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High School Success and Access to Postsecondary Education

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Executive Summary

In this report, we utilize data from two cohorts of Toronto District School Board high school students to address the following research questions:

- How closely are current measures of secondary school success aligned with measures of postsecondary access? Do the predictors of high school graduation match the predictors of different postsecondary pathways, that is university and college?
- How have these alignments changed over time? Are the same predictors significant for different cohorts of students or has there been a shift?
- Are there gaps in secondary school success and PSE access between subgroups of students, particularly those who historically have been underrepresented at the postsecondary level, in terms of high school graduation, university pathways and college pathways? Are these gaps widening, shrinking or remaining stable over time?

Using both descriptive and multivariate techniques, as well as data visualizations and illustrations, we find evidence that secondary school measures of success are more aligned with measures of college confirmation than university confirmation. Confirmation refers to a student receiving an offer of admission and accepting that offer. While neighbourhood household income and parental postsecondary experience are not significant predictors of high school graduation and college confirmation, they are important predictors of university confirmation.

Our findings point to a diminishing importance of income and parental postsecondary education, but also that the social class gap in universities persists — and perhaps is even growing. Our analysis offers compelling evidence of a widening class-based gap between those who go to university and those who don't. Parental education and neighbourhood household income are still strong predictors of university confirmation, although they do not matter for high school graduation and college confirmation.

We also find evidence that racialized students, with the exception of Latin American and mixed-race students, have greater odds of confirming university and college than White students, when all control variables are taken into consideration. We offer reserved optimism, as previous studies have demonstrated that the playing field is not equal, and that racialized students — particularly Black males — must navigate a structural obstacle course to avoid being placed in applied streams and designated with a special education need, two characteristics that severely curtail the educational attainment prospects of youth.

Finally, having a special education need is not associated with high school graduation or college confirmation in the most recent cohort studied, but is negatively associated with confirming university. This, along with household income and parental education, are factors that are contributing to the increasingly widening disparities in social class, parental education and special education needs in accessing university education.

We conclude by discussing how these findings correspond to HEQCO's equity-of-access agenda and offer suggestions about how existing policies may have driven some of the findings we observed. We also suggest that access policies around addressing disadvantages experienced by those with special education needs, first-generation students and low-income students should be a primary objective of an equity-of-access agenda.

Introduction

Canada is a highly educated nation. Of Canadians aged 25–64, over 90% have at least a high school diploma, and over 50% have either a university or college qualification, placing us first among OECD countries for proportions of university and college graduates (StatCan, 2017a; StatCan, 2017b). Despite this enviable record, however, Canada still faces equity-related challenges when it comes to education access. Certain groups continue to be at-risk of not completing secondary school and of underrepresentation in postsecondary education: students with special needs, certain ethnic and racial minorities, recent immigrants and those from lower socioeconomic status groups (Robson, Anisef, Brown & Parekh, 2014; Finnie, Childs & Wismer, 2011). Moreover, while it is becoming the norm for young people to pursue university or college after completing high school, the relationship between success at the secondary and postsecondary levels is not well understood, making it difficult to craft policy designed to support at-risk groups through the transition.

In a recent review of data infrastructure in Ontario related to participation by underrepresented groups, Gallagher-Mackay (2017) concludes that the research base behind an equity-of-access agenda remains incomplete and disconnected, and that further research is required. Longitudinal data linking contextual and process data with outcomes is necessary to better understand the pathways of underrepresented groups, and to forge solutions that will improve their success in secondary school and enhance their participation in PSE. To that end, the Higher Education Quality Council of Ontario (HEQCO) has established improved access to higher education for non-traditional and underrepresented students as a key research priority. In a recent statement of strategic directions, HEQCO has indicated that by 2025, “Every Ontario student has an equal opportunity to attend and succeed in postsecondary education. Participation and graduation rates for underrepresented groups will equal those of the most advantaged groups currently well represented within our colleges and universities” (HEQCO 2017, p. 1).

In this paper, we use a unique and extensive longitudinal data set from the Toronto District School Board (TDSB) to help fill the gaps in our understanding of the relationship between secondary success and postsecondary access, in particular for underrepresented groups.¹ This data covers a range of years, allowing

¹ More recent research has reinforced the close association between high school graduation and postsecondary access with postsecondary graduation patterns. A series of studies by the Chicago Research Consortium has shown that Grade 9 marks are very strong predictors of high school graduation, college enrolment and success in college. Indeed, early secondary grades appear to be a stronger long-term predictor than standardized tests such as the SAT (See Easton et al., 2017). Particularly germane to this is a joint University of Toronto-TDSB research study that linked the Grade 9 cohort data set used in this study (including the Grade 9 cohort of 2005) with both entry into U of T and graduation from U of T. The findings reinforced that, in general, the patterns of TDSB students’ entry into U of T were similar to the patterns of graduation of TDSB students from U of T. For example, female students in the study were more likely to be admitted into U of T than male students; and female students in the study who entered U of T were more likely to graduate from U of T than male students. The strongest variable for both entry and graduation was the composite Grade 9 achievement variable also used in this study. (See Brown et al., 2019b, pp. 19–21).

us to identify patterns and changes over time in terms of who graduates from high school and goes on to PSE, and the potential barriers encountered along the way.

Research questions

High school is the most significant pathway and gatekeeper to PSE. Moreover, the research discussed in the literature below demonstrates that it is a structured pathway that has been shown to have variable outcomes for student success dependent on students' individual characteristics. At the broadest level, the main overarching research question that informs our examination of key issues in the area can be framed as follows: "What structural, school and individual factors affect student success at the secondary level and to what extent do these factors shape their postsecondary pathways?"

Until very recently, especially in Canada, the literature on academic success in secondary school tended to focus primarily on two issues: test scores and graduation (Quan, 2017). There has been very little research on how tightly the secondary school success factors map onto PSE pathways; they are not necessarily identical. For example, Frenette and Chan (2015) suggested that gaps between students from public and private schools were considerably wider for PSE participation than for measures of academic achievement at the secondary level. We also have very little research to indicate whether such factors and pathways are changing over time. In light of this gap in understanding, the research questions we address in this paper are:

- How closely are current measures of secondary school success aligned with measures of postsecondary access? Do the predictors of high school graduation match the predictors of different postsecondary pathways, that is university and college?
- How have these alignments changed over time? Are the same predictors significant for different cohorts of students, or has there been a shift?
- Are there gaps in secondary school success and PSE access between subgroups of students, particularly those who historically have been underrepresented at the postsecondary level, in terms of high school graduation, university pathways and college pathways? Are these gaps widening, shrinking or remaining stable over time?

Background

While the concern for and focus on improving the PSE participation of underrepresented groups of students is not a recent phenomenon in the Canadian landscape, it is important that we identify the important and shifting historical trends in order to fully understand current emphases on improving their PSE participation. Economic and industrial changes in the 19th and 20th centuries produced a strong need for young people to develop the requisite skills to cope with an ever more complex and technical world. At the same time, schools offered a promising venue to transmit the sorts of common values that youth required in an increasingly diverse society. From the mid-19th century, schooling in Canada became more centralized and

government control was key in determining what could be taught and how. From 1866 to 1960, the percentage of students attending public elementary and secondary schools daily increased from just over 40% to 90% (Davies & Guppy, 2006, p. 60). By the early 1960s, dropping out of school before completing secondary education, previously considered a natural or common activity, was reconstructed as a problem or threat to the well-being of the nation (Anisef & Andres, 1996, p. 86). Completion of high school became lauded as a panacea for resolving Canada's economic problems, and those who graduated were seen as prepared to "compete in the global market of tomorrow" because they possessed the necessary credentials to create a "skilled and competent work force" (Price Waterhouse, 1992, p. i).

This increased emphasis on high school completion was soon accompanied by a dramatic upsurge in the profile of postsecondary degrees, with a growing consensus developing among Canadians that high school completion was not only desirable in its own right, but also a prerequisite steppingstone to PSE. Completion of PSE became essential for success in the labour market, and, as a consequence, higher education expanded, moving from an elite to a universal (and very large) system that catered to many thousands of students. The expansion of higher education was accompanied by a revolution of educational expectations among students and their parents. In fact, a national survey conducted in 1999 indicated that only 12% of parents did not have postsecondary expectations for their children (Davies & Guppy, 2006).

Policies initiated in the 1960s to foster the growth of higher education responded not only to the increased number of students that sought entry to universities, but was also motivated by the belief, endorsed by economists, that higher education was the key to economic productivity and higher economic returns for individuals and society at large (Becker, 1964). A second important rationale for fostering growth related to the belief that PSE (especially universities) offered a direct route to social mobility. Improving accessibility to PSE was viewed as a major means of accommodating rising social aspirations and improving the economic prospects of disadvantaged social, cultural and regional groups (Anisef, Bertrand, Hortian & James, 1985, p. 1–2).

From the late 1960s, however, while public demand for advanced education only increased, the perceived and actual returns for PSE became somewhat contentious. During the 1980s and 1990s, Canadians with PSE enjoyed "no overall increase in the returns to education," in terms of relative wages or employment rates when compared with high school graduates, though employment rates fell for those with less than a high school education (Heisz, Jackson & Picot, 2002, p. 11). In the 1990s, researchers from across OECD countries identified a contradictory phenomenon with unprecedented numbers of highly skilled and educated workers, but simultaneous mass unemployment and underemployment — an education-jobs gap (Livingstone, 1999). Nevertheless, Canadians continue to pursue postsecondary studies at increasing rates, with the number of graduates steadily rising each year since 2000 (StatCan, 2016).

Literature Review

Predictors of academic success in secondary schools

Early research into inequalities in educational success focused on schools and their effects on student outcomes. Educational researchers were of the mind that differences in high school outcomes, usually in the form of grades, test scores or dropout rates, derived from large-scale inequalities that existed between schools in relation to budgets, class sizes, teacher salaries and library funds. Early school-effects studies since the 1960s, predominantly carried out in the United States, were motivated by “the question of how well schools reduce the inequity of birth” and have almost exclusively relied on student standardized test scores (e.g., reading, math) to evaluate school effects on student success (Jennings, Deming, Jencks, Lopuch & Schueler, 2015, p. 1). Recent research in this vein highlights the importance of school environments and resources in mitigating the risk of low achievement for disadvantaged students and identifies school-level factors associated with the likelihood of academic resilience among socioeconomically disadvantaged students. Agasisti, Avvisati, Borgonovi & Longobardi (2018) employed data from the most recent Programme for International Student Assessment (PISA) cycles to explore changes in the share of academically resilient students over time between 2006 and 2015 for over 50 countries. They defined academic resilience as the ability of 15-year-old students to perform at a certain level in reading, mathematics and science. The researchers report that:

In Canada, Denmark, Estonia, Finland, Germany, Hong Kong (China), Ireland, Japan, Korea, the Netherlands, Norway, Singapore, Slovenia and Vietnam, more than 30% of 15-year-old students with a socioeconomically disadvantaged background were resilient in 2015. By contrast, in Algeria, the Dominican Republic, Kosovo, Peru and Tunisia, resilient students accounted for less than 1% of the socioeconomically disadvantaged students who were eligible to participate in the PISA 2015 test. (Agasisti, et al., 2018, p. 3)

In-depth analysis of the PISA data indicated that in schools where students report a negative classroom environment, the likelihood of academic resilience among disadvantaged students is lower. Resilience was found to vary greatly within educational systems, suggesting that we need to look more closely at the role of school practices and policies in reducing the vulnerability of disadvantaged students.

Research on the impact of school-level factors on high school success has been mixed, however, and there is substantial evidence that demographic factors play a much stronger role in explaining educational inequality. American sociologist James Coleman and colleagues produced a report in the mid-1960s that jolted the educational community in that it concluded that parental socioeconomic status did a far better job in explaining student success than did school resources (Coleman, Campbell, Hobson, McPartland, Mood, Weinfield & York, 1966; Davies & Guppy, 2006, p. 97). Furthermore, in schools that served students from a broad range of socioeconomic backgrounds, large inequalities in test score outcomes emerged *within*

schools. While school resources can be of importance, they are not as powerful in their consequences as family background.

International research in this area generally supports Coleman’s assertion that family background matters more than school resources, though indicating that school resources do have a more potent impact on student success outcomes in poorer nations than wealthy ones (Davies & Guppy, 2006, p. 97). Since the publication of the Coleman report, there has been a general consensus that, despite a rapid expansion of PSE in Canada and elsewhere in the world, the relative gap between middle- and working-class students with respect to their academic success within secondary schools and transition to PSE has remained relatively stable (Edgerton et. al., 2008). Robson (2013, p. 195) argues that school readiness or preparation for early learning is an important factor, with low-income children being more disadvantaged in the classroom than higher-income students. In addition, differences in socioeconomic status of families also relate to the exposure of children to the provision of books in the home, being read to, and dedicating regular hours to homework and study (Davis & Guppy, 2006, p. 125).

Ontario’s investment in education coupled with the realization, particularly by parents, that educational attainment is a prerequisite for success in the labour market and life in general has resulted in driving the high school graduation rate to a historic new high (Sweet & Anisef, 2005). More students than ever are obtaining a high school diploma and acquiring the skills and experience required for the jobs in an ever-changing labour market. By 2016, the five-year graduation rate had increased to 86.5%, (up 18 percentage points from 2004), and the four-year graduation rate had increased to 79.6% (up 23 percentage points from 2004) (Rushowy, 2017). In addition to the realization by parents of the importance of children completing their formal education, the rise in graduation rates can also be attributed to policy interventions, such as the Student Success/Learning to 18 strategy that the Ontario government introduced in 2003. This strategy sought not only to close the gap between youth who completed high school and those who did not but was also motivated by the desire to raise the bar for all secondary school students (Zegarac, 2007). Based on a longitudinal study commissioned by the government, it was discovered that students who failed to accumulate 30 or more credits by Grade 12 were at risk of dropping out. Moreover, 27% of Grade 9 students and 40% of Grade 10 students were already at risk of not graduating because they had already missed at least one credit (Ontario Ministry of Education, 2005).

Mayor and Suarez (2019) recently completed a scoping review of studies in Canada dealing with the demographic and contextual factors relating to academic achievement, posing two questions: “What demographic and contextual factors are most commonly used in K–12 academic achievement studies in Canada?” and “What, if any, research gaps exist?” Fifty-four studies were identified for review. The results revealed 40 demographic or contextual factors, with socioeconomic status (SES), gender, language, immigrant status, family structure and Indigenous status being the most commonly studied. The scoping review revealed a dearth of studies in this area with race, religion and LGBTQ+ identity comprising the most understudied factors. They conclude their review by stating:

Many studies lacked an intersectional approach, potentially hiding the ways in which combinations of various social identities, contextual environments, and policy factors may lead to increased systemic educational disparities. Further, this scoping review revealed a reliance on a few academic measurements and databases, largely cross-sectional in nature. Relying on single-time exam scores as the primary assessment of academic success fails to account for more meaningful measures of success, including graduation rates or functional literacy. This form of data collection makes it difficult to see a fuller picture of a student's education and may unintentionally promote educational policies that focus on increasing a single score, rather than attend holistically to a student's education (Mayor & Suarez, 2019, p. 65).

Predictors of graduation rates in the TDSB

A separate and earlier analysis of the same cohorts by the TDSB's research department revealed the following trends with respect to predictors of graduation rates for the 2006–2011 cohort and 2011–2016 cohort (Brown and Tam, 2017a):

- Stream: There was a large and persistent gap in graduation rates between students who are in the “academic” stream versus the “applied” stream (88% versus 59% respectively for the 2006–2011 cohort and 93% versus 69% for the 2011–2016 cohort).
- Gender: A consistent gender gap existed between male and female students' high school graduation rates, with male students being less likely to graduate from high school than female students in both cohorts (75% versus 83% respectively for the 2006–2011 cohort and 82% versus 89% for the 2011–2016 cohort).
- Race: Self-identified Black and Latin American students had the lowest graduation rates among all ethno-racial groups for both cohorts. However, Black students saw the greatest increase in graduation rates between cohorts, improving by 13 percentage points from 64% for the 2006–2011 cohort to 77% for the 2011–2016 cohort. East Asian students had the highest graduation rates in both cohorts (91% for the 2006–2011 cohort and 96% for the 2011–2016 cohort).
- Family structure: For both cohorts, students living with both parents were more likely to graduate than students who lived with one parent (85% versus 70% for the 2006–2011 cohort and 90% versus 79% for the 2011–2016 cohort). However, students living with one parent saw a much greater increase in graduation rates between cohorts.
- Parental PSE: Students whose parents attended university (as opposed to attending college or high school) had the highest graduation rates for both cohorts (88% for the 2006–2011 cohort and 92% for the 2011–2016 cohort). Students whose parents had a high school diploma saw the greatest increase in graduation rates between cohorts, improving from 75% to 84%.
- Socioeconomic status: A measure of socioeconomic status (SES) based on parental occupations was derived from the TDSB's Student Census. Students whose parents'/caregivers' occupation was classified as “professional” (the highest category) had the highest graduation rates for both cohorts

(90% for the 2006–2011 cohort and 94% for the 2011–2016 cohort), while students whose parents'/caregivers' occupation was classified as “non-remunerative” (the lowest category) had the lowest graduation rates (72% and 83%). The largest increase in graduation rates was seen in students whose parents'/caregivers' occupation was classified as “unskilled/clerical,” an improvement from 76% for the 2006–2011 cohort to 86% for the 2011–2016 cohort.

In addition to student background characteristics, research has shown the importance of prior attainment, particularly early prior attainment, in explaining high school success. Examination of recent TDSB data showed the impact of credit accumulation on graduation rates and provided evidence that students who fell below standard rates of credit accumulation were less likely to graduate and to attend PSE (Brown, Marmureanu & Tam, 2017). To be designated at or above standard credit accumulation rates, secondary students are expected to obtain eight credits in Year 1 (Grade 9), 16 credits by Year 2, 23 credits by Year 3 and 30 or more credits by Year 4. An analysis of cohort data revealed that female students (79%) were more likely than males (71%) to be at or above standard credit accumulation rates. Students with an exceptionality (excluding gifted), or those with non-identified special needs or an Individual Education Plan (IEP) were more likely to be below standard credit accumulation. Finally, students from the lowest income neighborhoods had a much higher proportion of below standard credit accumulation (40%), while students from the highest income neighborhoods were least likely to be below standard (13%).

It is worth noting that the demographics of the TDSB are not reflective of the rest of Ontario. The TDSB is much more racially diverse than the province in general. According to the 2011 National Household Survey, 26% of Ontarians self-identified as having visible minority status, with about 29% born outside of Canada and about 31% who spoke a non-official language (StatCan, 2013). According to the 2011 TDSB Student Census, the TDSB population had a similar proportion of those born outside Canada (27%), but the visible minority population was much higher at 61%. Additionally, 56% spoke a non-official language (Yau, Rosolen & Archer, 2013). The TDSB (or rather, the parents of the students in the TDSB) also appears to have a more highly educated population than the province in general.

It is, moreover, difficult to compare the TDSB population with just the population of school-age people in Toronto or the rest of the province because we do not have access to similar data for this age group in these areas. Data from Statistics Canada, for example, provides population demographic information by age categories. The closest category to the TDSB age range is 15–24 years of age, which does not have enough overlap to make comparisons valid. School boards in other parts of the province do not collect or make available demographic data on their student populations.

Predictors of the transition to postsecondary education

The predictors of transition to PSE in Canada have been documented in detail by De Brouker (2005) and Cheung (2007). Key factors include students' socioeconomic status, including family income and parental education. Young people from high-income families are two to three times more likely to go to university

than those from low-income families. In terms of college, however, there are almost no differences in enrolments between high- and low-income students. Parental education has been found to be a stronger predictor of the transition to PSE in Canada than family income. Finnie, Mueller, Sweetman & Usher (2008; Finnie, Frenette, Mueller & Sweetman, 2010) also found parental education had an influence on other strong predictors of going on to PSE, such as high school grades, attitude toward education and educational aspirations.

Secondary schools also play an increasingly important gateway role in creating structures where students are pushed/pulled to enter universities or community colleges upon graduation. Program of study (i.e., streaming or academic tracks established in secondary school) has therefore also been identified as a key predictor of PSE transition. King and Warren (2006) established that the vast majority of students in applied courses did not go on to college or university. Rather, they were far more likely to drop out (Krahn & Taylor, 2005). Research studies conducted over many decades show a consistent and recurring pattern where youth from less advantaged backgrounds are over-represented in lower streams and underrepresented in upper streams. Conversely, students from wealthier and better resourced families are more likely to enter academic streams, access universities and experience more rewarding occupational outcomes. While the relationship between family socioeconomic background and school stream is imperfect, with some students from working class backgrounds entering academic streams, research studies consistently show that the probability of working-class students entering academic streams is far lower (Davies & Guppy, 2006). In addition, racialized students, particularly Black males, are more likely to be placed in special education and applied classes (Robson et al., 2014), a combination of programs of study that strongly curtail PSE options.

In addition to high school grades and program of study, our previous research has also pointed to the importance of Grade 9 credit accumulation as a very strong predictor of going on to PSE (Robson, Brown, Maier & Ranjbar, 2016). The importance of Grade 9 credit accumulation for postsecondary access cannot be understated. Generally, students who complete fewer than eight credits in Grade 9 have a quite limited chance of going to university, although they will graduate high school. In a previous study of the students in Grade 9 who completed eight credits, 59% confirmed an offer of admission from an Ontario university (nearly all confirmed by Year 5); of those completing seven credits, only 15% confirmed university; and only 4% of those completing six or fewer credits confirmed university (Robson, et al., 2016, p. 15–16).

Disciplinary actions, such as suspensions, can also impact the transition to PSE. A study by Brown and Parekh (2013) found that those who did not apply to PSE had a suspension rate of 44%, compared to students who had confirmed an offer of admission to university, who had a suspension rate of just 9%. Research conducted in the US showed that Black and Latino students were more likely to be suspended than children from other racial groups. Also, students who had been suspended earned significantly lower scores in math and reading on end-of-year exams. Students with a propensity to be suspended did worse on the exams during the years they were suspended than during years they were not (Morris & Perry, 2016).

Access to PSE has been a policy priority in Ontario, particularly over the past two decades. The Liberal government of the mid-2000s sought to expand the postsecondary sector by adding new places and creating measures to allow all Ontario youth to pursue PSE (Deller, Kaufman & Tamburri, 2019). These measures have been largely financial in nature, focusing on enrolment-based funding formulas, some of which target the recruitment and support of students from historically underrepresented groups and student loan programs. Like the steady increase in four- and five-year high school graduation rates, Ontario has indeed seen overall increases in postsecondary enrolment and postsecondary attainment over the past two decades, such that the province now leads not only Canada, but almost all other OECD countries in postsecondary attainment (Deller et al., 2019). This type of growth-model approach to access is not without controversy, however, and there is evidence to suggest that these overall increases to access have not led to equity of access, a point that will be discussed further in reviewing the results of this study.

Theoretical Orientation

The theoretical model for this study is informed by evidence from the research literature and previous research undertaken by the TDSB. Our outcome of interest is postsecondary pathways, and the above literature review indicates that there are a number of factors that are relevant determinants or predictors of postsecondary pathways. First are structural or ascribed factors, that is factors that characterize students but over which students have no control, such as race, gender, socioeconomic status, parental education, immigration status and special education needs. These factors exist externally to the education system; they are in place before the student sets foot in the classroom. Second, there are factors that are internal to the education system, such as streaming, academic-achievement measures, absenteeism and suspensions. These do not exist prior to the student's entrance into formal education and, moreover, some (to a greater or lesser extent) involve the student's own behaviour and personal agency. We conceptualize the relationship of these factors as interwoven but also linear; structural factors *shape the possibilities* of the education-related factors, which in turn *strongly determine* the postsecondary options available to students.

In this paper, we introduced a number of comparative elements to this theoretical model. As will be discussed in more detail in the next section, we had multiple outcomes of interest — high school graduation, university pathway, college pathway, applied to PSE but was not accepted and did not apply to PSE. Moreover, we had two cohorts of students spaced five years apart. We were therefore comparing the effects of the structural and education-related factors on multiple outcomes of interest at multiple points in time.

Data

Our research questions address the determinants of high school success and postsecondary enrolment. In order to discern the relationships between the various elements in our theoretical model, we need to examine a large number of cases for which the relevant data is available. Bearing this in mind, this study

examines the determinants of both high school success and postsecondary confirmations using longitudinal cohort data from the Toronto District School Board. The TDSB has created and extensively analyzed a unique longitudinal data set that gathers a rich range of information regarding high school students, including their postsecondary destinations. This data set includes Student Census-based survey information about students' backgrounds (including family education, gender, self-identified race, immigrant status and family structure) and attitudes, plus comprehensive administrative data including results of large-scale assessments over time, and information about key educational processes such as identification for special education and placements, school attendance, discipline, course choices in high school, and applications to college and/or university.

The unique and rich quality of the data deserves emphasis. We are very fortunate to have access to this data set in order to conduct the type of in-depth analysis used in this paper. The TDSB is by far the largest school board in Ontario and in the country and one of the most diverse, with over 246,000 students at the elementary and secondary level, 23% of whom were born outside of Canada (TDSB, 2014). In comparison, the next largest school board in Ontario is the Peel District School Board, which has approximately 155,000 students (PDSB, 2019). Moreover, at the time of writing, the TDSB was the only school board in Ontario that had and made available to researchers student data of the level of quality that allows for this kind of analysis.

This study uses a quantitative approach involving statistical analyses of two TDSB Grade 9 cohorts for which postsecondary application data is available. Cohort studies refer to study designs where inclusion is based upon study members sharing a common characteristic — in this case, being in Grade 9 in a specific school year. The cohort data includes administrative data on students' time in high school as well as demographic and attitudinal data that has been linked with the TDSB Student Census studies conducted in 2006 and 2011. Data on the students' application to Ontario universities and colleges is obtained by the TDSB from the Ontario Universities' Application Centre (OUAC) and the Ontario College Application Service (OCAS) and is merged to the file through the use of Ontario Education Numbers (OENs), unique identifiers assigned to every student in the Ontario elementary and secondary school system. This makes it possible to know if students applied, were accepted, and confirmed an offer of admission from an Ontario college or university, or did not apply to PSE at all. In Ontario, a third of students return for a fifth year of secondary school, often referred to as the "victory lap" (Brady & Allingham, 2010), and around 5% return for a sixth year. Most students who go to an Ontario college will apply in Years 5 and 6 (victory laps and beyond), while most who apply for university will do so in Year 4 (Grade 12). Thus, in the construction of cohorts, two application cycles are considered. We therefore follow each cohort from the beginning of their Grade 9 year through high school graduation (in either Year 4 or 5) to their admission to PSE.

The two cohorts we use in this paper will be referred to as Cohort 1 and Cohort 2. Students in Cohort 1 were in Grade 9 in 2005–06 and wrote the Student Census in 2006. They would have been in Year 4 (Grade 12) in 2008–09, and their relevant PSE application cycles are therefore 2009 and 2010. Students in Cohort 2 were

in Grade 9 in 2010–11 and wrote the Student Census in 2011. They would have been in Year 4 (Grade 12) in 2013–14, and their relevant PSE application cycles are therefore 2014 and 2015. This is visually depicted in Figure 1 and Table 1.

Figure 1: Visualization of Two TDSB Cohorts

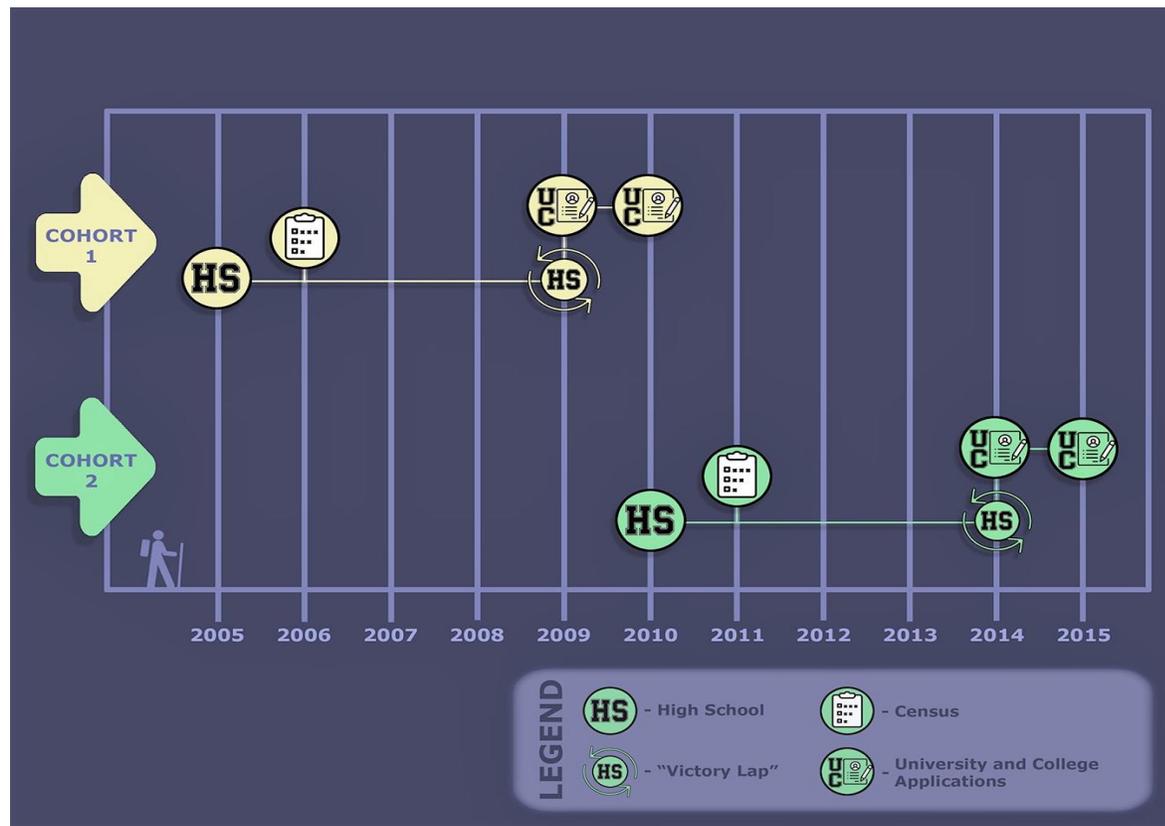


Table 1: TDSB Cohort Data

	Year 1 (Grade 9)	Year 4 (Grade 12)	Year 5 (victory lap)	Census year	PSE application cycles
Cohort 1	2005–06	2008–09	2009–10	2006	2009, 2010
Cohort 2	2010–11	2013–14	2014–15	2011	2014, 2015

Selecting the cohorts to use for this study required careful examination of the data available to determine which cohorts would be the most comparable. This decision involved consideration of the variables available, the year in which the Student Census was written, completion rates and patterns of missing data. For a full description of the cohort choice rationale, please see Appendix A. Hereafter, we will refer to the cohort that started Grade 9 in 2005 as Cohort 1 and the cohort that started Grade 9 in 2010 as Cohort 2.

Variables

The operationalization of each variable used in the analytic models is described below.

Outcomes

High school graduation: In the first set of models, the outcome of interest was whether the student graduated from a TDSB high school at the end of the fourth year (or had accumulated enough credits to graduate) or did not graduate from a TDSB high school at the end of the fourth year. This information was derived from TDSB administrative data and was set up as a dichotomous variable, where 1= graduated and 0 = not graduated.²

Postsecondary confirmations: In the second set of models, the outcome of interest was whether the student confirmed an offer to an Ontario university, confirmed an offer to an Ontario college, applied to an Ontario postsecondary institution but was not accepted, or did not apply to an Ontario postsecondary institution. This information was obtained from OUAC and OCAS. It should be noted that “confirmation” indicates that a student was offered a place and accepted the offer.

Predictors

Sex: This was a binary variable, female and male, with female = 1 and male as the reference category (= 0).

Stream: Ontario high schools offer two “streams” of courses: applied and academic. Applied courses, “have an emphasis on concrete and practical learning,” and academic courses, “have an emphasis on theoretical and conceptual learning” (TDSB, 2014). Academic streams are aimed at eventually entering PSE, particularly university. This data was provided by the TDSB administrative data and was a dichotomous variable, with academic = 1 and applied as the reference category (= 0).

Self-identified race: For the Toronto data, race was originally measured using a 14-category self-identification item on the Student Census; that is, students identified from a list of categories the one they felt best described their racial identity (Yau & O’Reilly, 2007). Some of these categories were combined for the purposes of the analysis (e.g., Black African, Black Caribbean and Black Canadian were combined into a single Black category), resulting in eight race categories: Black, East Asian, Latin American, Middle Eastern, Mixed, South Asian, Southeast Asian and White, with White as the reference category (= 0). We were not able to include Indigenous students because the numbers were too small for analysis (i.e., < 50 per cohort).

² The “not graduated” category also includes those who transferred out of the TDSB. Because we are employing logistic regression and are concerned with patterns, rather than simple descriptives and rates, we have elected to leave transfer students in the analysis. Moreover, data from the Ministry of Education has shown that students who transfer from the TDSB to other boards do not do as well as those who remain, hence our inclusion of transfers in the “not graduated” category.

Ever suspended: This data was obtained from the administrative records and was coded as a dichotomous variable, where 1= suspended at least once (at any point in K–12) and 0 = never suspended.

Grade 9 achievement: For TDSB students, there are four compulsory Grade 9 subjects: English, mathematics, science, and geography. Research at the TDSB has found that marks in these four subjects and other Grade 9 achievement indicators, such as total credit accumulation, are highly related to postsecondary success. We have followed the lead of the TDSB in its most recent research collaborations with the University of Toronto and York University (Brown, Davies & Chakraborty, 2019) and created a composite Grade 9 achievement variable using the four compulsory subjects and total Grade 9 credit accumulation, resulting in four possible categories:

- very high achievement: level 4 (A) in all four mandatory Grade 9 credits
- high achievement: grade of level 4 (A) in one to three of the four mandatory Grade 9 credits
- medium achievement: a mark of below 80 in all four subjects, but with a credit accumulation of eight or more Grade 9 credits
- low achievement: completed fewer than eight Grade 9 credits

The reference category is low achievement (= 0).

Passed OSSLT: A literacy requirement is necessary in order to obtain a high school diploma in Ontario, which is usually fulfilled by the Ontario Secondary School Literacy Test (OSSLT). This variable, derived from administrative records, indicates whether the student passed the OSSLT in Grade 10, which is the first time they are eligible to write it, or did not pass, with did not pass as the reference category (no pass = 0). It is important to note that if students were absent, deferred or failed, they could take the test in Grade 11 or 12, or take a literacy course for the requirement, which also counts as an English credit for graduation. OSSLT is a requirement for college and university programs.

Parental PSE: The Student Census contained items asking the highest level of education for the parents or guardian of the student. This was constructed as a dichotomous variable where 1= at least one parent participated in PSE (either college or university) and 0 = no parental postsecondary participation.

Two-parent household: This was a dichotomous variable drawn from data in the Student Census, which indicated whether the student lived with two parents or not, with the latter as the reference category.

Born abroad: This was a dichotomous variable drawn from data in the Student Census that indicated whether the student was born in Canada or abroad, with born in Canada as the reference category (born in Canada = 0).

Special education needs: TDSB administrative data contains information on whether students have been identified as having special education needs (SEN), usually in the form of additional support or resources to accommodate sensory, physical, learning or mental health difficulties. This was created as a dichotomous

variable, with no SEN as the reference category (no SEN = 0). For the purposes of this analysis, we have categorized students identified as gifted, technically an SEN category in the TDSB, as having no SEN.

Grade 9 absenteeism: This was a continuous variable drawn from administrative data indicating how many days a student was absent during Grade 9.

Income: Data on family income is not directly available from the Student Census (students often do not know). To estimate median neighbourhood family household income, a variable from Environics Analytics measuring median household income as of 2018 was used, which is associated with six-digit postal-code dissemination areas (matched by postal code to the Census Dissemination Area of around 300 households). A ranking of 1 corresponds to the lowest income group and a ranking of 20 corresponds to the highest income group. Thus, it should be noted that the variable itself is not attached to the characteristics of an individual student, but rather to the characteristic of the neighbourhood in which they live. Although not ideal, this type of income measurement is commonly used (Dooley, Payne & Robb, 2017).

School enjoyment: In the Student Census, students were asked to respond to the statement, “I enjoy school,” on a 5-point Likert-type scale, where 1 = all the time and 5 = never. We reverse coded this item, so that 1 = never and 5 = all the time for ease of interpretation.

Analytic strategy and results

There are a number of stages to the analyses that we undertake. The first is a purely descriptive comparison of Cohorts 1 and 2 using average scores on the variables of interest. We then move to multivariate strategies that allow us to look at the effect of numerous indicators on our dependent variables of interest. Multivariate strategies allow us to examine the effect of individual indicators on a dependent variable of interest, taking into account the effect of other variables in the model. Unlike bivariate models that just look at the association between two variables and may overstate their relationship, multivariate models allow us to control for the multiple effects of various characteristics that are known from the literature to be predictors of the high school and PSE outcomes we are considering here. Additionally, we are able to look at the effect of cohort on the impact of the variables (i.e., has there been a change in the effect of the variables from Cohort 1 to Cohort 2). We undertake this analysis by using interaction terms, explained below.

Descriptive statistics

Table 2 lists the means or proportions for all the variables included in our final model. The proportions of high school students graduating in four years, confirming college and confirming university have all

increased from Cohort 1 to Cohort 2. The number of TDSB students graduating from high school increased by approximately 7 percentage points.³

Figure 2: Distribution of Postsecondary Confirmations by Cohort

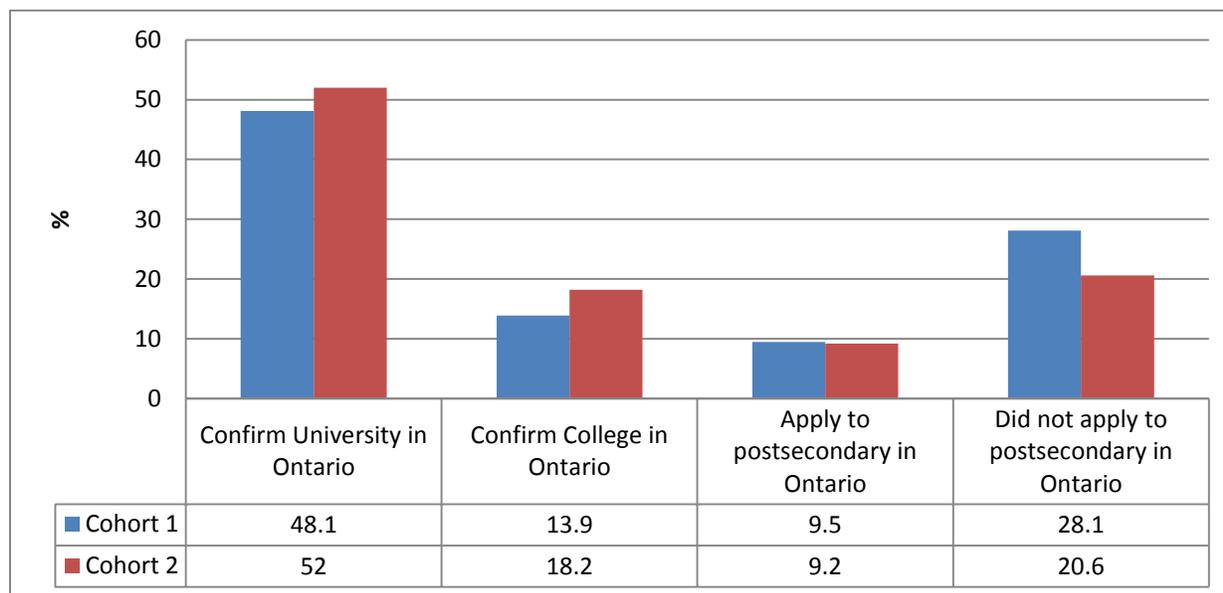


Figure 2 shows the proportions of students in the four postsecondary pathways.⁴ University and college confirmations each increased about 4 percentage points: University confirmations rose from 48% for Cohort 1 to 52% for Cohort 2 and college confirmation rose from 14% and 18%. The proportion of those who applied but confirmed no offer declined very slightly from 9.5% for Cohort 1 to 9.2% for Cohort 2, while the proportion of those who did not apply showed a much greater decrease from 28% for Cohort 1 to 21% for Cohort 2.

Other notable changes from Cohort 1 to Cohort 2 included:

- decreases in the proportion of students receiving suspensions (from 20% for Cohort 1 to 14% for Cohort 2)
- decreases in the proportion of students born abroad (35% for Cohort 1 to 30.5% for Cohort 2)

³ Descriptive statistics were calculated for both full and estimation samples. The full sample consisted of all students in each cohort for whom any data was available. The estimation sample consisted of students included in the final model because they had data available for all the variables included in the model. Only descriptive statistics from the estimation sample are reported here, but they are largely consistent with the descriptive statistics from the full sample. See Table B-1 in Appendix B for the descriptive statistics for the full and estimation samples.

⁴ These are the proportions for the estimation sample. See Figure B-1 in Appendix B for the proportions for both full and estimation samples.

- decreases in the average number of days absent in Grade 9 (4.1 days for Cohort 1 to 3.7 days for Cohort 2)
- Grade 9 achievement variable showed a decrease of about 5 percentage points for those in the lowest category, and small increases for those in the high and very high categories (3 percentage points and 1.5 percentage points, respectively), while the proportion in the medium category remained steady
- the proportion of students with SEN increased more dramatically, from 11% in Cohort 1 to 18% in Cohort 2⁵
- the proportion of White students in the TDSB decreased 6 percentage points from Cohort 1 to Cohort 2, while all other racial categories either remained steady or had small increases or decreases
- all other variables remained steady or showed very slight changes

The decline in suspension rates since 2005 may be at least partially attributable to the change from the “Zero Tolerance” policy practised by Ontario and the TDSB after a settlement by both with the Human Rights Commission in July 2005. (See Ontario Human Rights Commission, 2005; see also Yuen, 2005).

Increases in TDSB achievement have been incremental but consistent since consistent measurement started in the 2000–01 school year. For example, course completion and marks in Grade 9 mathematics, English, science and geography have usually increased every year, a pattern consistent with secondary school graduation (See Brown et al., 2017; Brown & Tam, 2017). Achievement and graduation increased regardless of what political party was in power and what policies were in place; there seems to be no clear explanation available for this increase.

Table 2: Descriptive Statistics by Cohort

Variable	Cohort 1 (N=13,296)	Cohort 2 (N=14,889)
Outcomes		
High school graduation	0.779	0.844
Confirm university	0.481	0.520
Confirm college	0.139	0.182
Applied but no offer	0.095	0.092
Did not apply	0.281	0.206
Female	0.502	0.489
Academic stream	0.767	0.772

⁵ There were 42 students with an autism exceptionality in the 2005 cohort; this had more than doubled to 95 in the 2010 cohort, however, this still only comprises half a percentage of the total cohort. In contrast, giftedness had doubled from 335 to 656 while those with an IEP only had the largest numerical increase, from 927 to 1,408.

Variable	Cohort 1 (N=13,296)	Cohort 2 (N=14,889)
Self-identified race		
Black	0.114	0.119
East Asian	0.182	0.167
Latin American	0.019	0.021
Middle Eastern	0.044	0.055
Mixed	0.056	0.074
South Asian	0.193	0.222
Southeast Asian	0.037	0.049
White	0.356	0.294
Ever suspended	0.204	0.139
Grade 9 achievement		
low – fewer than 8 credits	0.158	0.110
med – below level 4 but 8+ credits	0.309	0.313
high – level 4 in 1 to 3 subjects	0.399	0.429
very high – level 4 in all 4 subjects	0.135	0.148
Passed OSSLT first time	0.792	0.784
Parent has PSE	0.641	0.656
Two-parent household	0.771	0.804
Born abroad	0.352	0.305
Special education needs	0.108	0.178
Grade 9 absenteeism	4.10	3.74
Neighbourhood HH income (ordinal)	10.76	10.83
Enjoy school	3.51	3.59

Multivariate analyses

In this section, we present the results from a binomial logistic regression model where high school graduation was the outcome of interest and a multinomial logistic regression model where postsecondary pathway was the outcome of interest. Logistic regression techniques are a family of estimation techniques used on limited dependent variables. In the case of high school graduation, our outcome has two possible values: 1 = yes, 0 = no. Logistic regression is an appropriate estimation technique for this type of non-continuous dependent variable. Our other dependent variable of interest has four possible outcomes: confirmed university, confirmed college, did not confirm PSE and did not apply. Such a variable is considered “categorical” or “nominal” in nature because it has multiple categories that cannot be ordered. To use such a variable in an estimation procedure as a dependent variable, an extension of logistic regression, namely multinomial logistic regression, is used. Similar to logistic regression, a reference (omitted) category is used to discuss the estimation results associated with the remaining categories. In our case, the omitted category is “did not apply to PSE” and therefore our estimation results for the remaining categories are in comparison to this omitted category. Although this interpretation can indeed be tedious, it is the only way to accurately model multinomial outcomes without violating the assumptions of regression.

Because we examined two cohorts spaced five years apart, we can discuss not only the variables that were significant predictors for each outcome of interest, but also changes in the significance of predictors over time. In order to determine changes in the effects of predictors between the cohorts, we used a pooled estimation where all cases were entered into the same logistic regression with an independent variable for “cohort” entered (see Table B-2 in Appendix B for details). This cohort variable was used as a moderator (or “interaction term”) between all other variables in the model. If these interactions were statistically significant, it indicated that the relationship between the predictor and outcome changed from Cohort 1 to Cohort 2.

We discuss each outcome of interest in turn, first examining the significant predictors of that outcome, then those predictors that changed from Cohort 1 to Cohort 2, as determined by the pooled estimation using the interaction term. We then compare each outcome to the other outcomes in terms of the patterns of significant predictors.

Table 3 displays the estimations (presented as odds ratios) predicting all outcomes of interest for both Cohort 1 and Cohort 2. It should be noted that the effects discussed here are net of the effects of the other variables in the model. The odds ratios presented in red are those that were found to be significantly different from one another using the cohort interaction term. Results are presented as odds ratios; values over 1.00 are associated with an *increase* in the odds of an outcome while those below 1.00 are associated with a *reduction* in the odds of an outcome. Values of 1.00 are considered to have no effect. Thus, values above 1.00 are considered to be positively associated with the outcomes considered here while those below 1.00 are considered to be negatively associated with the outcomes considered here.

Predictors of high school graduation

Significant predictors

Referring to the table of results (Table 3), a number of variables were significant predictors of high school graduation. The ascribed or structural characteristics from our theoretical model had scattered effects. The only racial categories that were statistically significant predictors in either cohort were East Asian, South Asian, and Southeast Asian, and these were all positive. In other words, students who were from these racial groups were more likely to graduate high school in comparison to the reference group, which was White. Being from a two-parent family was also a significant positive predictor relative to other family structures. Having a special education need and coming from a neighbourhood with median household income also had positive effects, but only for Cohort 1, which will be discussed in the next section. Being born outside of Canada was a significant negative predictor, and parental PSE had no significant effect.

Measures of academic behaviour and academic success (also commonly referred to as prior attainment), the central section of our theoretical model, behaved as expected. Being in the academic stream (compared to not being in the academic stream) was a significant positive predictor of high school graduation in both

cohorts (OR = 1.524 for Cohort 1 and 1.292 for Cohort 2). Passing the OSSLT on the first eligible attempt and enjoying school were also significant positive predictors. The Grade 9 composite achievement variable also had positive effects, with the strength of the relationship increasing with each level up, remembering that these are all in relation to the lowest category of that variable. In other words, if we look at the results for Cohort 2, for example, those who scored in the medium category of the Grade 9 composite variable were 3.9 times as likely to graduate high school as those in the lowest category; those in the high category were 4.9 times as likely to graduate as those in the lowest category; and those who were in the very high category were 13 times as likely as those in the lowest category. The variables that were negative predictors were, unsurprisingly, suspensions and absenteeism, though absenteeism did change between cohorts, as will be discussed below.

Table 3: Logistic Regressions Predicting High School Graduation and Postsecondary Confirmations, by Cohort**Odds Ratios**

	Cohort 1 <i>HS grad</i>	Cohort 2 <i>HS grad</i>	Cohort 1 <i>University</i>	Cohort 2 <i>University</i>	Cohort 1 <i>College</i>	Cohort 2 <i>College</i>	Cohort 1 <i>Applied not admitted</i>	Cohort 2 <i>Applied not admitted</i>
Female	1.029	1.152**	1.204***	1.369***	1.076	1.235***	1.210**	1.346***
Academic stream	1.524***	1.292***	5.549***	5.027***	0.907	0.822**	1.966***	1.814***
Self-identified race								
Black	1.086	1.140	1.290*	1.566***	1.436***	1.615***	1.336*	1.199
East Asian	1.524***	1.285**	3.336***	3.723***	1.399**	1.741***	1.438**	1.641***
Latin American	0.925	0.858	0.580**	0.786	1.319	0.953	0.824	0.895
Middle East	0.979	1.054	1.831***	2.575***	1.351*	1.789***	0.980	1.646**
Mixed	0.818	0.979	0.914	1.178	0.887	1.034	0.841	1.005
South Asian	1.065	1.275**	2.394***	3.704***	1.664***	2.212***	1.087	1.617***
Southeast Asian	1.127	1.330*	1.398*	1.494**	1.425*	2.519***	1.080	0.702
Ever suspended	0.517***	0.469***	0.435***	0.400***	0.576***	0.499***	0.809*	0.686***
Academic achievement								
Medium	3.138***	3.900***	4.153***	4.990***	2.487***	2.904***	2.166***	1.846***
High	4.882***	4.905***	8.351***	9.861***	1.806***	2.316***	2.366***	2.044***
Very high	14.03***	13.00***	20.74***	16.52***	0.982	0.983	6.048***	3.331***
Passed OSSLT	1.908***	2.119***	4.073***	3.900***	1.441***	1.576***	1.654***	1.914***
Parent PSE	1.024	1.068	1.422***	1.504***	0.942	0.981	1.316***	1.483***
Two-parent household	1.477***	1.388***	1.547***	1.535***	1.372***	1.241**	1.424***	1.446***
Born abroad	0.741***	0.753***	0.919	0.860*	0.668***	0.772***	0.882	0.860
Special education needs	1.541***	1.034	0.853	0.500***	1.355***	0.976	0.874	0.760**
Grade 9 absenteeism	0.925***	0.951***	0.916***	0.930***	0.918***	0.943***	0.959***	0.967***
Median neighbourhood inc	1.020***	1.006	1.029***	1.018***	1.010	1.004	1.022***	1.027***
Enjoy school	1.134***	1.129***	1.226***	1.247***	1.045	1.077*	1.245***	1.173***
<i>N</i>	13296	14889					13303	14889

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

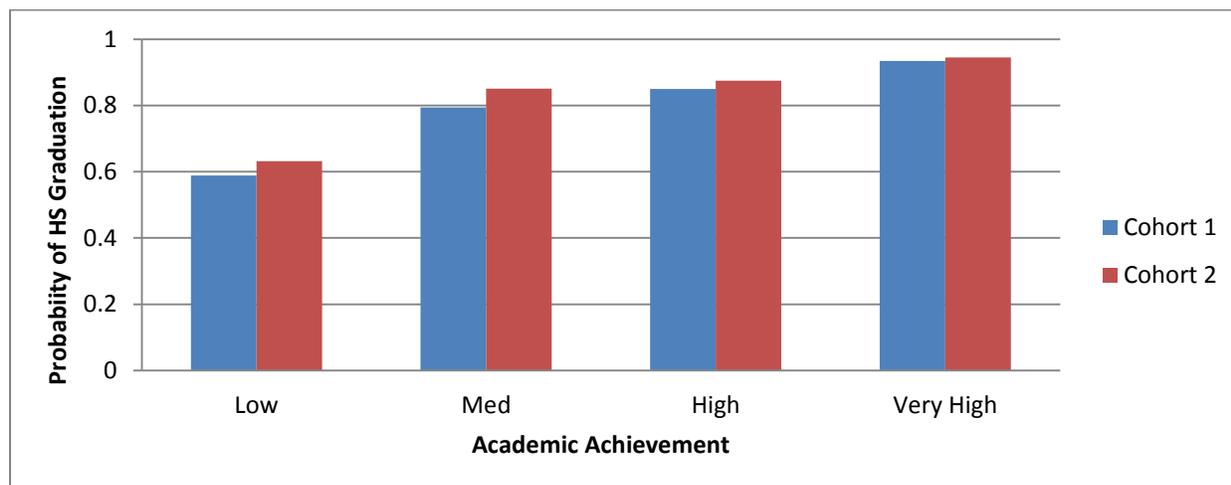
Note: The odds ratios presented in red indicate those that are significantly different by cohort.

Significant predictors — Changes between Cohort 1 and Cohort 2

For the sections in which we discuss changes between cohorts, we have used predicted probabilities to graph the likelihoods of the outcomes in question as it is associated with the independent variable of interest in order to better illustrate the results. Focusing on the numbers for high school graduation that are in red in Table 3, we can see that four variables showed a statistically significant difference between Cohort 1 and Cohort 2: academic achievement, having a special education need, absenteeism and neighbourhood household income. The effects of academic achievement in Grade 9 on high school graduation changed between the two cohorts for those in the “medium” category. Having “medium” achievement (below Level 4 but eight or more credits) was more important in predicting high school graduation for Cohort 2 compared to Cohort 1, meaning that medium achievers in Cohort 2 were more likely to graduate high school relative to medium achievers in Cohort 1. Figure 3 illustrates these differences. Those in the “high” and “very high” categories were still more likely than the medium achievers to graduate in both cohorts, but their graduation rates were not significantly higher for Cohort 2 compared to Cohort 1, while the medium achievers made a significant gain in graduation rates in that same time period.

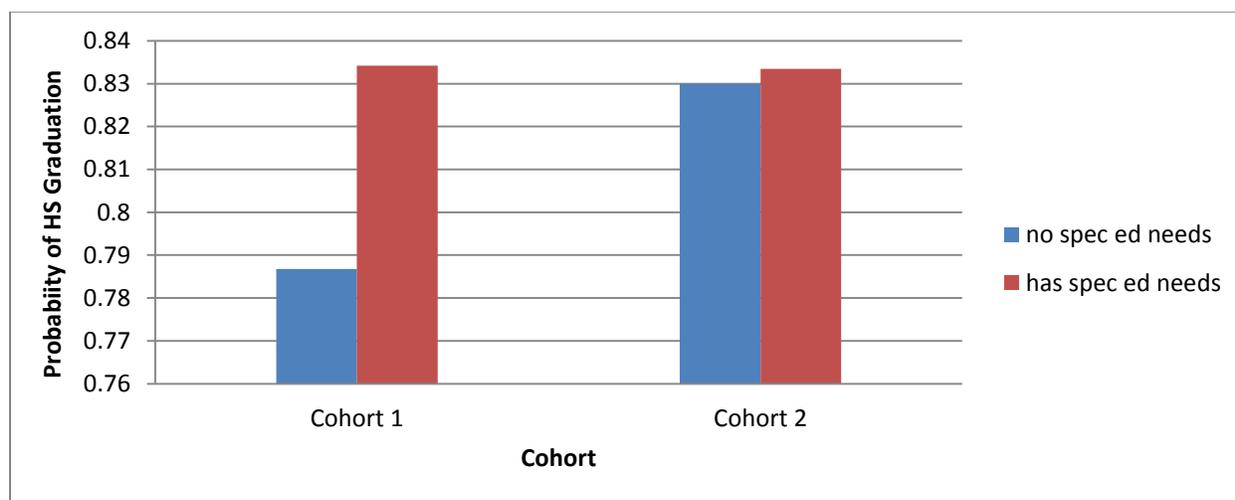
Other cohort differences in high school graduation prediction included the effects of having a special education need, which increased the odds of graduation by 1.5 times for Cohort 1 but had no effect for Cohort 2, controlling for the other variables in the model. Figure 4 illustrates this difference using predicted probabilities of high school graduation, showing that the gap between students with and without special education needs in terms of graduating high school decreased for Cohort 2. This finding makes it appear as though special education needs were advantageous for graduation for Cohort 1, but for Cohort 2 the difference between SEN and non-SEN students closed. However, closer inspection of this result in the context of SEN students reveals a worrying trend. It is the case that all students, both SEN and non-SEN experienced increases in graduation rates and transitions to PSE from Cohort 1 to Cohort 2.

Figure 3: Interaction between Cohort and Academic Achievement to Predict High School Graduation



When we look at the raw graduation rates for SEN and non-SEN separately, we see an increase from Cohort 1 to Cohort 2 of 10 percentage points for non-SEN students (80% for Cohort 1 to 90% for Cohort 2), but only a 1 percentage point increase for SEN students (65% for Cohort 1 to 66% for Cohort 2). These raw rates are corroborated by the regression results; non-SEN students made significant gains in terms of the probability of graduation from Cohort 1 to Cohort 2, whereas SEN students experienced trivial gains. This finding indicates that while both SEN and non-SEN experienced raw graduation gains from Cohort 1 to Cohort 2, the graduation gap between the two groups actually widened significantly.

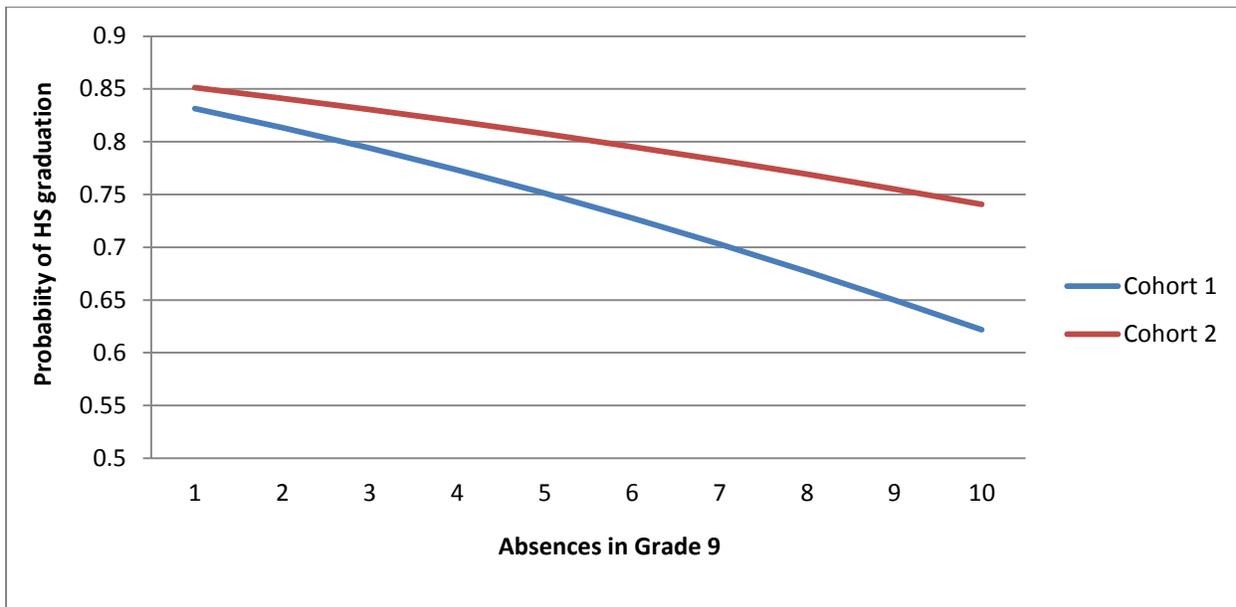
Figure 4: Interaction between Cohort and Having a Special Education Need to Predict High School Graduation



This pattern is particularly worrying when we consider that there was an 8 percentage-point increase from Cohort 1 to Cohort 2 in the proportion of students identified as SEN. While comprising a growing subgroup within the TDSB, their success with regard to high school graduation relative to the non-SEN group actually decreased from Cohort 1 to Cohort 2.

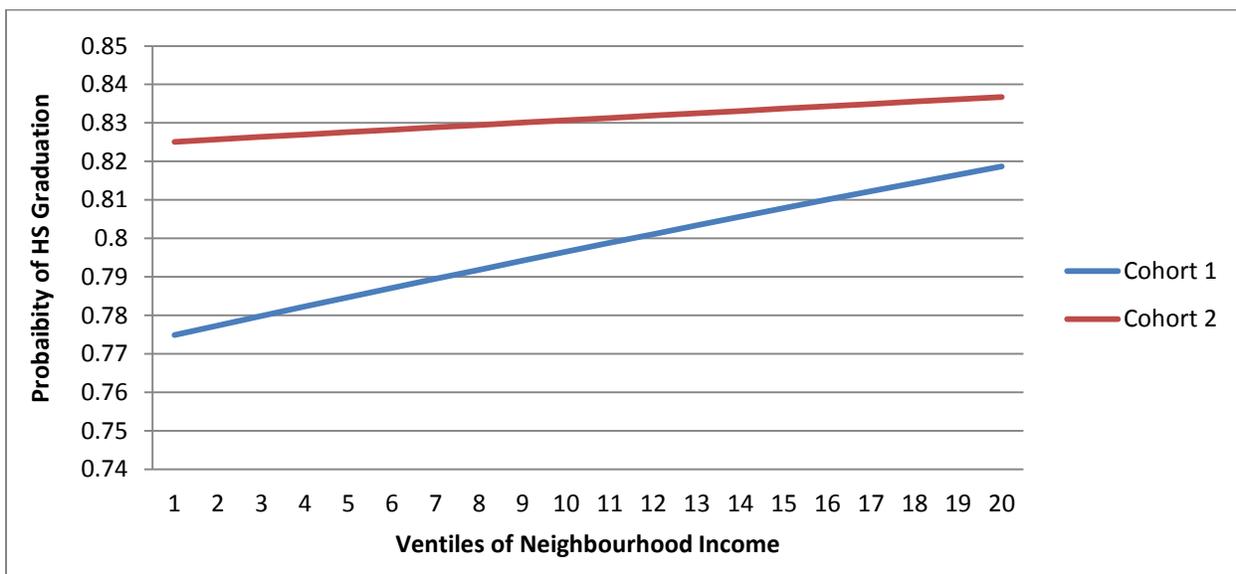
The results in Table 3 indicate that the association between absenteeism and graduation changed from Cohort 1 to Cohort 2. Absenteeism is still a statistically significant negative predictor in both cohorts, but its effect has weakened over time. Figure 5 shows that the effect of one absence on graduation was quite similar for both cohorts, but increasing numbers of absences had a much stronger negative effect for Cohort 1 than Cohort 2, indicating that the association flattened in the intervening years. The relationship was much steeper for Cohort 1, with 10 absences associated with around a 0.62 odds in graduation. For Cohort 2, the odds rose to 0.74 for students with the same number of absences.

Figure 5: Interaction between Cohort and Grade 9 Absenteeism in Predicting High School Graduation



Higher neighbourhood income increased the probability of high school graduation for Cohort 1 but was no longer statistically significant for Cohort 2. The relationship between neighbourhood income ventiles and odds of high school graduation by cohort are illustrated in Figure 6. Again, this relationship has flattened from Cohort 1 to Cohort 2. This indicates that the effect of neighbourhood income has become a less important predictor of high school graduation for Cohort 2 than it was for Cohort 1.

Figure 6: Interaction between Cohort and Neighbourhood Income Ventiles in Predicting High School Graduation



Predictors of postsecondary pathways

The four- and five-year confirmation outcomes were examined using multinomial logistic regression, due to their categorical nature. The categories that were possible were: 1) confirmed university; 2) confirmed college; 3) applied but not admitted; and 4) did not apply. Because logistic multivariate techniques require an omitted reference category for interpretation of results, we have omitted the “did not apply” category. Thus, all the odds ratios considered in these estimations should be interpreted as the outcome in question compared to not applying to PSE. For example, in Table 3 the first odds ratio for the variable female is 1.204. This means that females were 20.4% more likely than males to confirm university as opposed to not applying to PSE at all, controlling for all the other variables in the model. This phrasing is somewhat awkward, so we use figures where appropriate to more clearly illustrate significant differences in the cohort effects.

Predictors of university confirmation

Significant predictors

Race featured more prominently in predictors of confirming a place at university than it did for high school graduation. Compared to White students, students who were Black, East Asian, Middle Eastern, South Asian and Southeast Asian were more likely to confirm university in both cohorts, accounting for other variables in the model. Some of the other ascribed characteristics that did not factor into high school graduation also featured as significant positive predictors for university confirmation in both cohorts, such as parental PSE and income. Being identified as SEN had a significant negative effect for Cohort 2, though it did not for Cohort 1, which will be discussed further in the next section.

Academic behaviour and success variables again performed as expected. Students who were in the academic stream, passed the OSSLT on their first eligible attempt and who achieved medium or better on the Grade 9 composite variable were all more likely to confirm a university place than students who were in the applied stream, did not pass OSSLT or were in the low category on the Grade 9 composite variable. Suspensions and absenteeism were, unsurprisingly, significant negative predictors of university confirmation in both cohorts.

Significant predictors — Changes between Cohort 1 and Cohort 2

The predictors of university confirmations in both cohorts are very similar, with only two variables showing a significant difference from Cohort 1 to Cohort 2 in the pooled analysis using the cohort interaction term — the South Asian racial category and students with SEN. Again, these are indicated in red in Table 3. In other cases where the odds ratios look different, they were deemed not to be significantly different by cohort through the pooled estimations.

Figure 7: Interaction between Cohort and being South Asian in Predicting University Confirmation

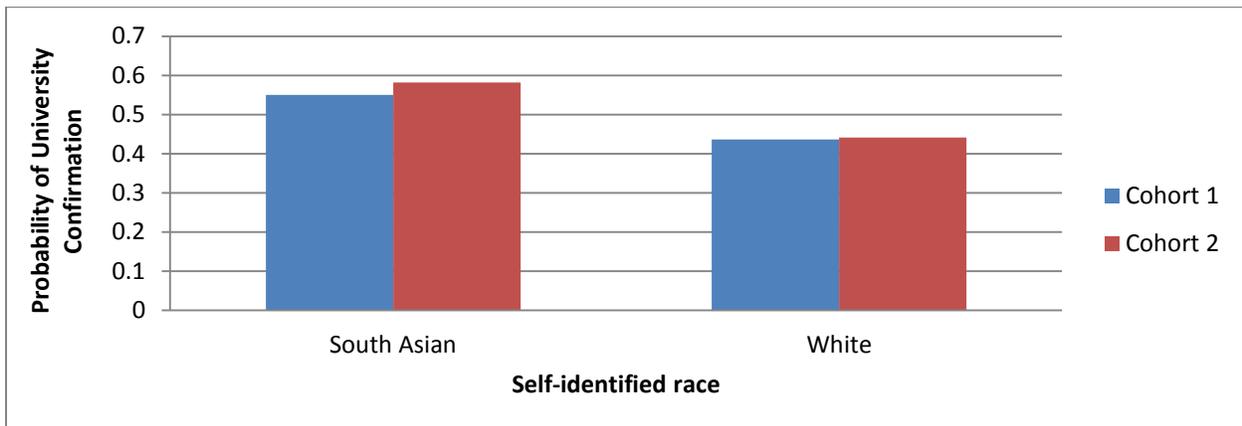
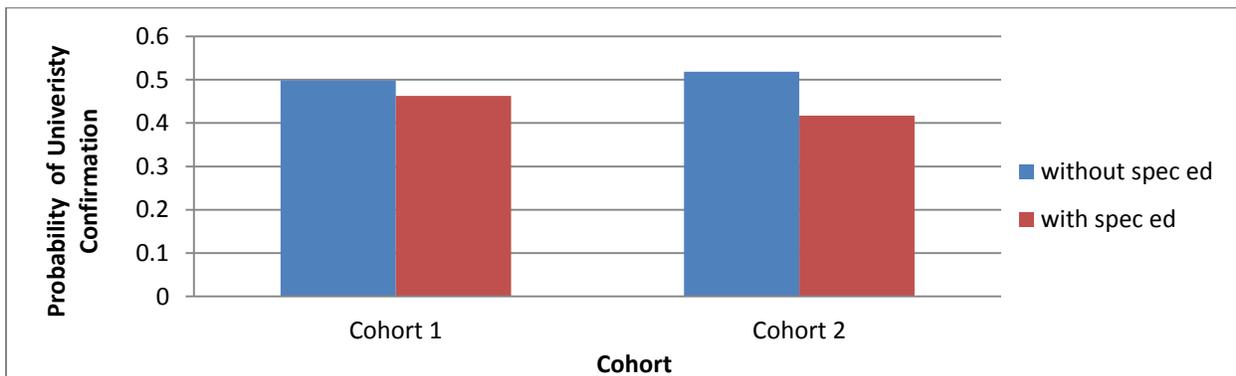


Figure 7 illustrates South Asian university confirmations relative to Whites (the reference category). While both groups made some gains in the predicted probability of confirming university from Cohort 1 to Cohort 2, the predicted probability for South Asians grew significantly more (about 3% versus about 0.5% for Whites).

Figure 8 illustrates that from Cohort 1 to Cohort 2, the odds of students with special education needs confirming university have dropped significantly. Indeed, for Cohort 1 it was not a significant predictor of university confirmation either positive or negative, meaning there was no statistically significant difference in the likelihood of an SEN student versus a non-SEN student confirming a university spot (relative to no PSE application at all). For Cohort 2, SEN became significant and negative, decreasing the odds of university confirmation by 50% compared to those without SEN. The predicted probability of non-SEN students entering university saw a slight gain from Cohort 1 to Cohort 2 (about 2%), but SEN students saw a significant loss (about 4.5%) during that same time period, creating an even wider gap for Cohort 2 than had existed for Cohort 1.

Figure 8: Interaction between Cohort and Having Special Education Needs in Predicting University Confirmation



Predictors of college confirmation

Significant predictors

Race again featured more prominently in predictors of college confirmations (relative to no PSE application) than it did for high school graduation. Students who were Black, East Asian, Middle Eastern, South Asian and Southeast Asian were all more likely than White students to confirm college in both cohorts. Coming from a two-parent family was also a positive predictor in both cohorts, but parental PSE and neighbourhood income had no significant effect. Being born abroad was a significant negative predictor in both cohorts. For students with SEN, we see a similar pattern as we did for high school graduation — it was a significant positive predictor for Cohort 1 but neutral for Cohort 2. We discuss this further in the following section.

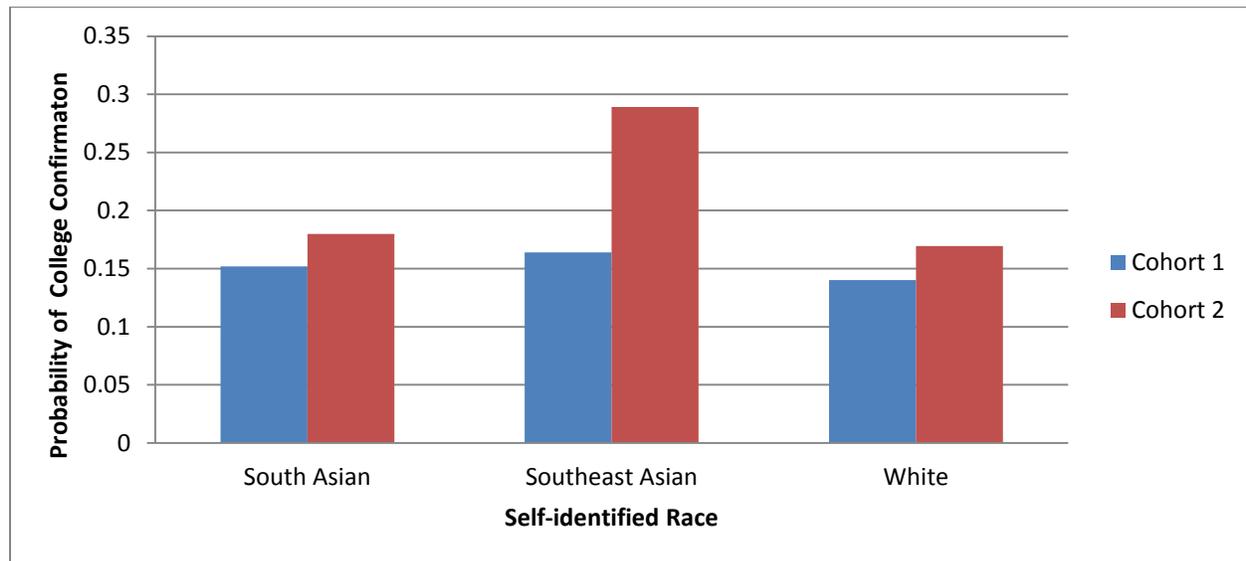
School behaviour variables performed as expected, with suspensions and absenteeism making college confirmations less likely in both cohorts, though the negative strength of absenteeism was somewhat tempered for Cohort 2, which will also be addressed in the next section on changes between the cohorts. School success variables behaved somewhat differently for college confirmation than for either high school graduation or university confirmation. Passing the OSSLT remained a positive predictor, but for Cohort 2, students in the academic stream were actually significantly less likely than students in the applied stream to confirm college (relative to not applying to any PSE). The Grade 9 composite variable’s “medium” and “high” categories were positive predictors in both cohorts, but the strength of the relationship *decreased* with each level up, and the “very high” category was not a significant predictor at all. This is contrary to the pattern we saw for the effects of this variable on high school graduation and university confirmations. The positive relationship between the “high” category and college confirmations also intensified from Cohort 1 to Cohort 2, as will be discussed in the following section.

Significant predictors — Changes between Cohort 1 and Cohort 2

There were five predictors that showed a significant change from Cohort 1 to Cohort 2, according to the pooled analysis: the South Asian and Southeast Asian racial categories, the “high” achievement level of the Grade 9 composite variable, having a special education need and absenteeism.

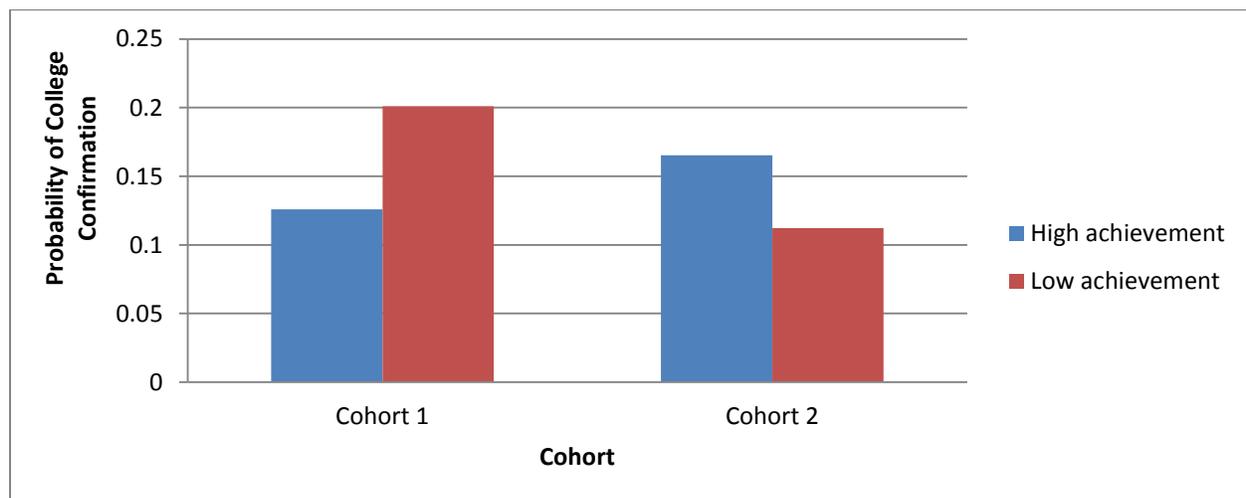
In terms of self-identified race, the odds of going to college for South Asian and Southeast Asian students rose more significantly from Cohort 1 to Cohort 2 compared to White students, as illustrated in Figure 10. All groups made gains in the predicted probability of confirming a college place, but the gains were much more dramatic for the Southeast Asian students in particular. South Asians and Whites made about equal gains in the predicted probability of confirming college, but at the same time, South Asians experienced a much bigger drop in non-applications than Whites from Cohort 1 to Cohort 2 (see Figure B-2 in Appendix B). This accounts for the significant difference between South Asians’ college confirmations compared to Whites from Cohort 1 to Cohort 2.

Figure 9: Interaction between Cohort and Self-identified Race in Predicting College Confirmation



The association between Grade 9 achievement and college confirmation changed between cohorts with regard to those who were high achievers (Level 4 in one to three subjects). As illustrated in Figure 10, the probability of attending college for high achievers went up considerably between the two cohorts (0.126 versus 0.175), while the likelihood of low achievers confirming college was nearly halved. This suggests that the applicant pool to colleges has shifted between these two cohorts.

Figure 10: Interaction between Cohort and Academic Achievement in Predicting College Confirmation



Having special education needs was found to be positively associated with college confirmation for Cohort 1 (OR = 1.355) but not a statistically significant predictor of college confirmation for Cohort 2 (Table 3). The statistically significant interaction in Table B-2 (Appendix B) between cohort and special education needs confirmed that these two effects are different from one another. Figure 11 uses

predicted probabilities to illustrate how special education needs have had a changing association with college from Cohort 1 to Cohort 2, using the reference category as a point of comparison (the odds ratios are, after all, derived from a comparison to the reference category). For Cohort 1, SEN students were more likely than non-SEN students to confirm college, but when it came to not applying to PSE at all, the two groups had an equal probability. For Cohort 2, though both groups increased their probability of confirming college, SEN students were still more likely than non-SEN students to confirm college; however, they were now also more likely than non-SEN students to not apply to PSE at all. This suggests that non-SEN students have made an indirect gain in that, though they were still less likely to confirm college than SEN students for Cohort 2 (by about the same margin as for Cohort 1), they showed a significant drop in non-applications for Cohort 2.

The final covariate of college confirmation that was found to have a statistically significant change from Cohort 1 to Cohort 2 was absenteeism. The odds ratio for this association (Table 3) had weakened between Cohort 1 (OR = 0.918) and Cohort 2 (OR = 0.943), in a pattern similar to the one we observed in the results for high school graduation. As shown in Figure 12, the association has flattened, meaning that while absenteeism was negatively associated with the probability of confirming college for both cohorts, the relationship is not as strong as it was for Cohort 1. This could be the consequence of the pattern we saw with absenteeism and high school graduation. Absenteeism is no longer preventing people from graduating from high school as much as it used to, so it is likely that some students who previously might not have been able to apply to college (either because they did not graduate high school or did graduate but did not have sufficient grades to qualify for college) are now in a position to do so, resulting in a weakening of the negative relationship between absenteeism and college confirmation.

Figure 11: Interaction between Cohort and Having a Special Education Need in Predicting College Confirmation

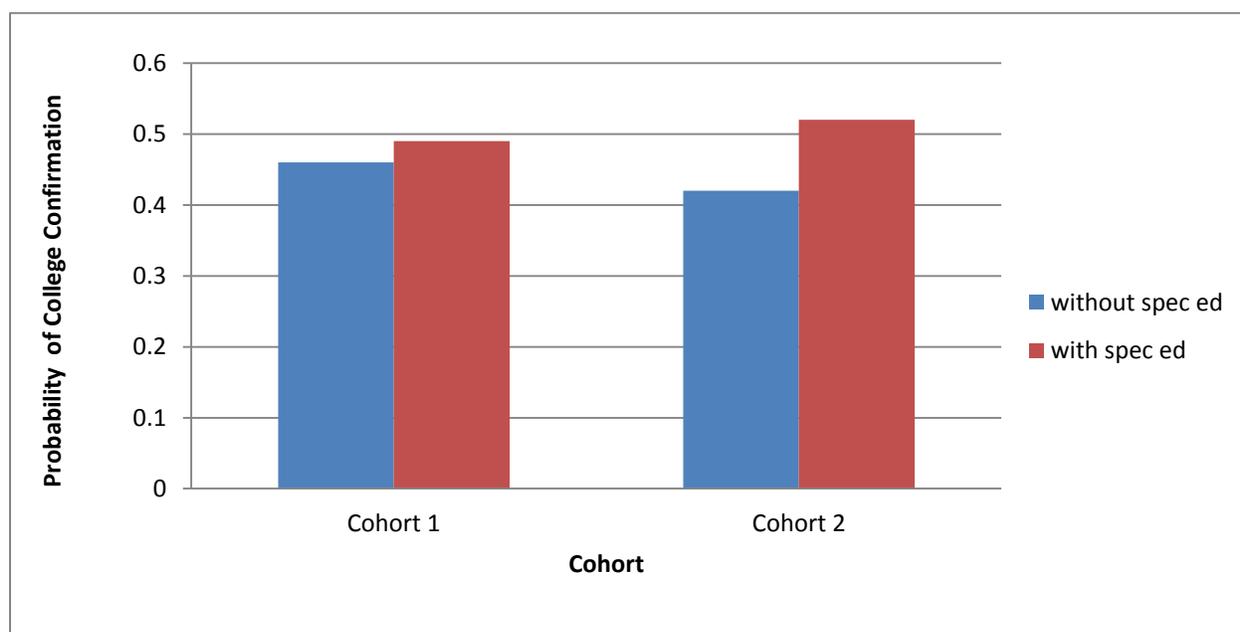
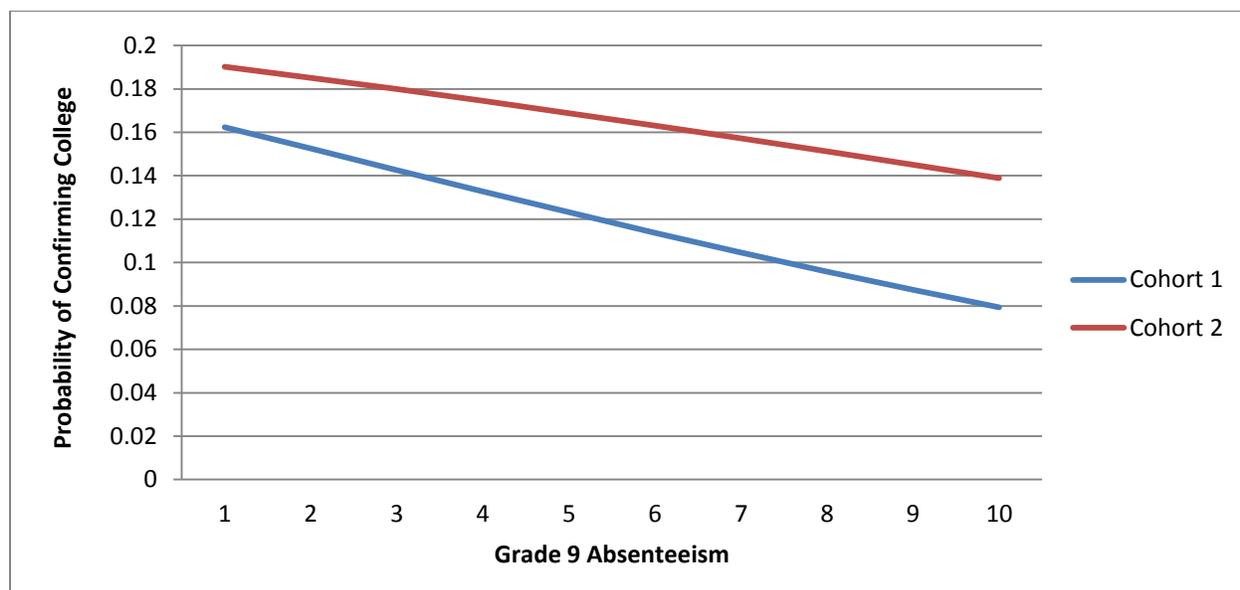


Figure 12: Interaction between Cohort and Grade 9 Absenteeism in Predicting College Confirmation

Predictors of applying but not confirming an offer

The final group we consider is those who applied to college or university but did not receive an offer of admission. This is the smallest group of cohort members comprising less than 10% of the population. There are different reasons why students may not receive or confirm offers of admission: their grades may not have been high enough, they may have only applied to highly competitive programs, they may have received an offer but decided to decline it. Our data does not contain information on the reason for not receiving an offer for the programs to which students applied. Thus, we must caution the reader that this likely includes a very diverse group of students, making it difficult to interpret the results with any coherence.

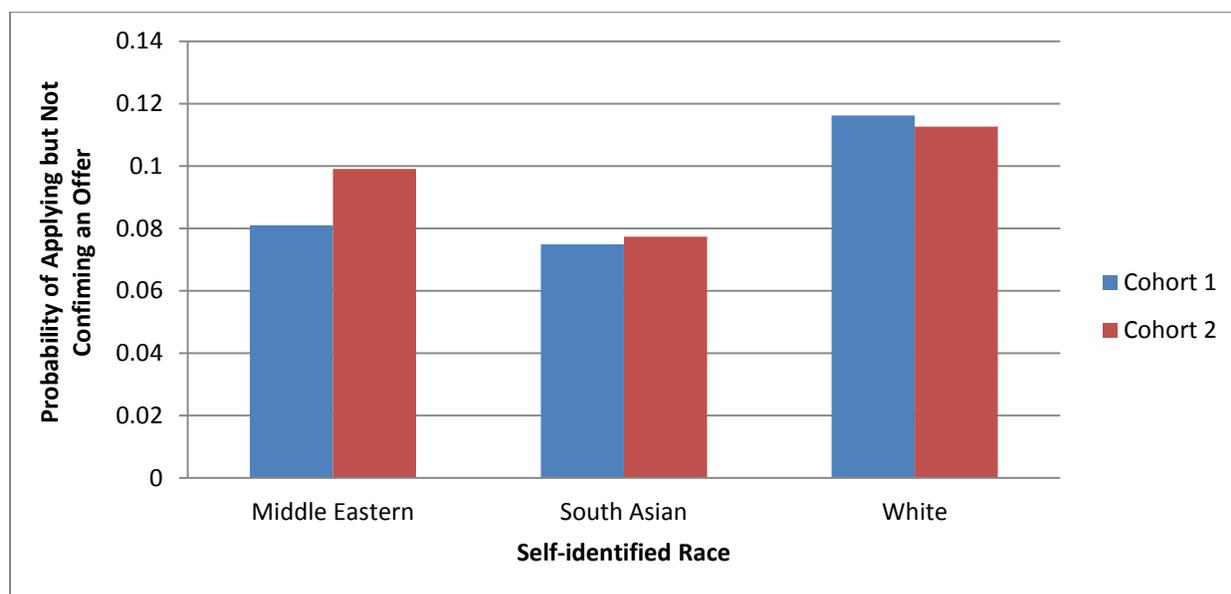
Significant predictors

Race did not figure prominently here. Only students who were East Asian were more likely than White students to apply but not confirm an offer in both cohorts. Middle Eastern and South Asian students became significantly more likely than White students to apply but not confirm for Cohort 2, which will be discussed in the next section. Females were more likely than males to apply but not confirm in both cohorts, as were students from two-parent families. Parental PSE and neighbourhood income were significant positive predictors in both cohorts but being born abroad had no effect. School behaviour variables, that is suspensions and absenteeism, were significant negative predictors in both cohorts, and being in the academic stream, passing the OSSLT, and the “medium,” “high,” and “very high” levels of the Grade 9 composite variable were all significant positive predictors in both cohorts.

Significant predictors — Changes from Cohort 1 to Cohort 2

In terms of self-identified race, cohort changes were observed among Middle Eastern and South Asian students in Cohort 2, who were both about 1.6 times as likely as Whites to apply but not be admitted; this relationship was not significant for Cohort 1. Figure 13 illustrates how these racial differences play out in terms of the reference category (Whites). The gap for Whites between the two cohorts is negligible (in fact, it appears to decrease in Cohort 2), however, the probability of not confirming PSE is greater for Middle Eastern and South Asians students in Cohort 2 than those in Cohort 1.

Figure 13: Interaction between Cohort and Self-identified Race in Predicting No Confirmations



The final difference between cohorts and not confirming PSE was found in the “very high” level of the Grade 9 composite variable (level 4 in all four subjects). In Table 3, the odds ratio for this variable was reduced by around half from Cohort 1 to Cohort 2. However, further investigation into this subgroup revealed a small number of cases (approximately 150 per cohort), with probabilities of this outcome around 0.01 for Cohort 1 to 0.008 for Cohort 2. For this reason, these results have not been graphed as they may be statistically significant but certainly lack substantive significance.

Predictors across the different education outcomes

Predictors of high school graduation performed largely as expected (with the exception of SEN, which we discussed above), though some appear to be weakening over time. But how well do they align with predictors of postsecondary confirmations overall? Table 4 summarizes which covariates were significantly associated with the different outcomes considered here. A ✓ represents a statistically significant positive association while a ✓– represents a statistically significant negative association.

Income and parental education

Overall, predictors of high school graduation map reasonably well onto postsecondary confirmations, though they more closely fit with college confirmations than university confirmations in terms of some key structural variables, namely income and parental PSE. The introduction of cohort year as an interaction term in the high school graduation model indicated that there was a significant difference between income's predictive power for Cohort 1, when it was statistically significant and positive, and for Cohort 2, when it lost its statistical significance. Neighbourhood income was also not a statistically significant predictor of college confirmations for either cohort. However, income was still a significant and positive predictor of university confirmation for both cohorts. Similarly, parental PSE was not significant for either high school graduation or college confirmation, but it was significant and positive for university confirmation. This suggests that while structural factors may be weakening or non-significant in terms of secondary and college education, they continue to have a sustained impact on university confirmations. Wealth and parental PSE, along with the transmission of values or cultural capital that often accompany these, may not be influencing whether students graduate from high school or get into college, but they do still appear to be influencing whether students get into university.

Absenteeism and special education needs

Patterns of significance for absenteeism and special needs were also more closely aligned between high school graduation and college confirmation than high school graduation and university confirmation. We noted that introducing the cohort year interaction term showed a significant and negative effect of absenteeism on high school graduation, but that this association had weakened from Cohort 1 to Cohort 2, which was the same pattern found for college confirmations. For university confirmations, on the other hand, the association was significant and negative, but there was no difference between the cohorts, indicating that the association is not weakening at the university level. Having a SEN was shown to have a significant and positive association on high school graduation for Cohort 1, but became non-significant for Cohort 2, and again we find this same pattern for college confirmations. In terms of university confirmations, SEN was non-significant for Cohort 1, and then significant and negative for Cohort 2.

Table 4: Significant Predictors Across Education Outcomes

	Graduated High School		Confirmed University		Confirmed College		Applied Not Admitted	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
Female		✓	✓	✓		✓	✓	✓
Academic stream	✓	✓	✓	✓		✓-	✓	✓
Self-identified race								
Black			✓	✓	✓	✓	✓	
East Asian	✓	✓	✓	✓	✓	✓	✓	✓
Latin American			✓-					
Middle East			✓	✓	✓	✓		✓
Mixed								
South Asian		✓	✓	✓	✓	✓		✓
Southeast Asian		✓	✓	✓	✓	✓		
Ever suspended	✓-	✓-	✓-	✓-	✓-	✓-	✓-	✓-
Academic achievement								
Medium	✓	✓	✓	✓	✓	✓	✓	✓
High	✓	✓	✓	✓	✓	✓	✓	✓
Very high	✓	✓	✓	✓			✓	✓
Passed OSSLT	✓	✓	✓	✓	✓	✓	✓	✓
Parent PSE			✓	✓			✓	✓
Two-parent household	✓	✓	✓	✓	✓	✓	✓	✓
Born abroad	✓-	✓-		✓-	✓-	✓-		
Special education needs	✓			✓-	✓			✓
Grade 9 absenteeism	✓-	✓-	✓-	✓-	✓-	✓-	✓-	✓-
Neighbourhood income	✓		✓	✓			✓	✓
Enjoy school	✓	✓	✓	✓		✓	✓	✓

Prior attainment and academic stream

Secondary school performance variables and their association with high school graduation were unsurprising: being in the academic stream (as opposed to the applied stream), passing the OSSLT at first eligibility, and being in the medium category or better of the combined Grade 9 achievement variable were all significant and positive across both cohorts. It is revealing, however, to examine the way these variables operated in terms of college confirmations and university confirmations. Being in the academic stream was a significant and positive predictor of university confirmations, and the effect was even stronger here than it was for high school graduation, but it was non-significant for Cohort 1 and negatively associated for Cohort 2 with college confirmations. Passing the OSSLT when first eligible is significant and positive for both university and college confirmations, but the magnitude of the effect was much stronger for university than for college. Perhaps most interestingly, the Grade 9 achievement variable shows a significant and positive association with university confirmations, with the strength of the association increasing dramatically at each level (medium, high, very high). Those in the medium category in Cohort 2 are around 5 times as likely to confirm a university place as those in the low category, those in the high category are 10 times as likely, and those in the very high category are around 16.5 times as likely. When it comes to college confirmations, however, we see the reverse; the strength of the association is much weaker, and it *decreases* as achievement level increases. Indeed, those in the very high category are not significantly more or less likely to have a college confirmation than those in the low category. This suggests that the more academically successful you are in high school, the more likely you are to confirm university and the less likely to confirm college. In other words, high achievement in high school appears to be much less important for predicting college confirmations than university confirmations.

Self-identified race

The association between self-identified race and the outcomes considered here is complex. In terms of high school graduation, race was statistically significant (and positive) for only one group in Cohort 1 — East Asians — and only three groups in Cohort 2 — East Asians again, South Asians and Southeast Asians (remembering that these results are in comparison to the reference group, which is White). When the cohort interaction term was introduced, none of the racial categories showed a statistically significant change from Cohort 1 to Cohort 2 in terms of high school graduation, indicating that its predictive power did not increase or decrease to any significant degree. University and college confirmations, on the other hand, show much more statistical significance related to race, and their patterns are quite similar. Students in both cohorts who are Black, East Asian, Middle Eastern, South Asian and Southeast Asian are more likely than White students to confirm university or college. Moreover, South Asian students showed a statistically significant increase in university and college confirmations from Cohort 1 to Cohort 2. Southeast Asian students showed this same statistically significant increase between the cohorts, but only for college confirmations. The only other overall pattern difference between university and college confirmations in

relation to race is that Latin American students had a significant negative association with university confirmations for Cohort 1 (this disappeared for Cohort 2).

From these results, race appears to be a limited and patchy predictor of high school graduation but becomes a more important and largely positive predictor for university and college confirmations. It must be emphasized that these findings are derived from statistical models that assume “all things being equal,” but as numerous reports by us and others have demonstrated, this assumption of equality (particularly in terms of prior attainment, streaming and special education needs) is often very faulty, with racialized children (particularly Black boys) being far more likely to be low achievers, streamed into “applied courses” and designated with special education needs (Robson et al., 2014). Our findings indicate that if racialized children have high achievement, are in the academic stream and carry a host of characteristics also associated with positive educational outcomes, they are just as or more likely than White children to graduate high school and confirm PSE.⁶

Summary of Findings

We have used two cohorts of TDSB students — who went through high school five years apart — to examine the determinants of high school graduation and PSE confirmation, which has produced a great multitude of findings. We now return to our original research questions to provide general answers to them, which are also supplemented by conceptual visualizations.

How closely are current measures of secondary school success aligned with measures of postsecondary access? Do the predictors of high school graduation match the predictors of different postsecondary pathways, that is university and college?

In general, we found that measures of secondary school success are more closely aligned with college confirmations than university confirmations. A summary of these alignments is depicted in Figure 15 where “important” denotes statistical significance.

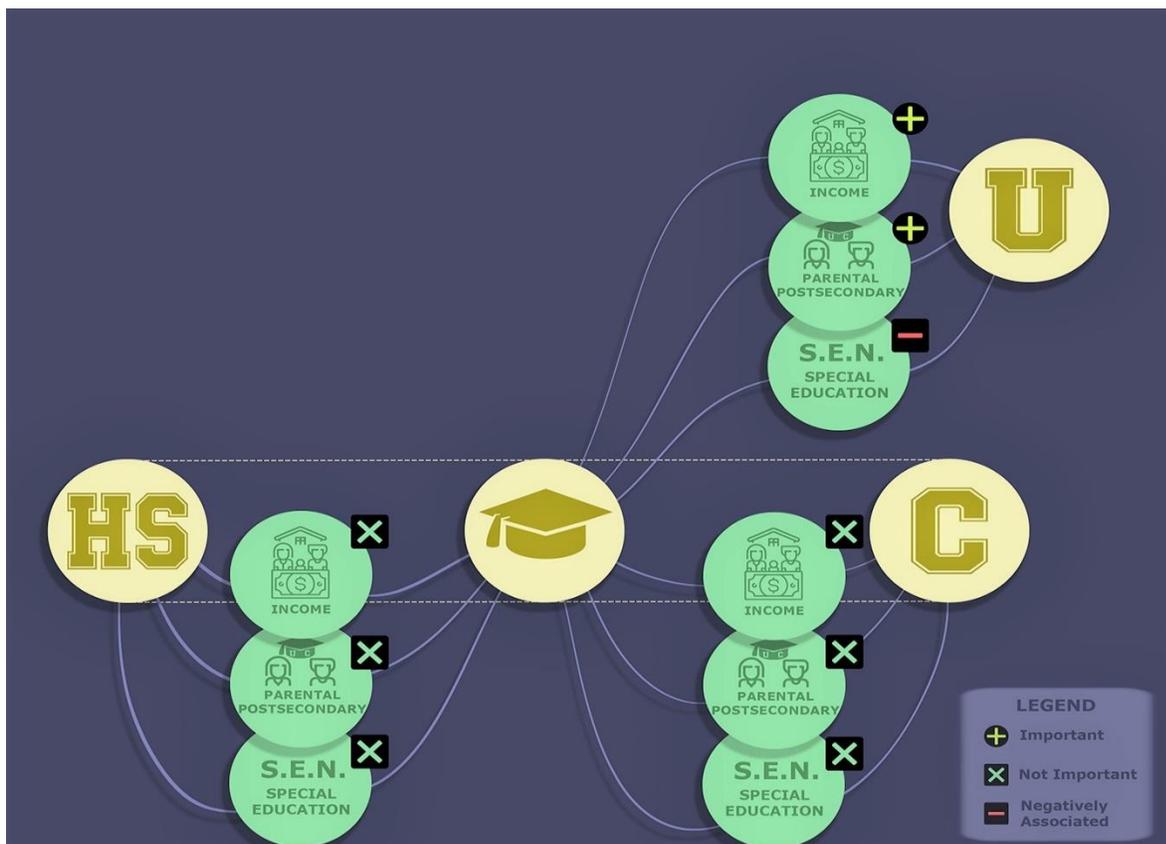
In particular:

- neighbourhood household income was not statistically significant in predicting high school graduation or college confirmation, but was important in predicting university confirmation
- parental PSE was not statistically significant for predicting high school graduation or college confirmation, but was important for predicting university confirmation

⁶ Bivariate findings in our other research (Robson, Anisef, Brown & George, 2018) has demonstrated quite clearly that when we examine many of these factors associated with postsecondary confirmation against race, there are notable gaps, with Black students having lower achievement, higher rates of special education needs and higher likelihood of being placed in applied streams.

- having special education needs was not a significant predictor for high school graduation or college confirmation, but was negatively associated with university confirmation
- academic achievement (as measured here by the Grade 9 composite variable and passing the OSSLT on the first eligible attempt) was a statistically significant predictor of all three outcomes, but the association with university confirmation was stronger than for either high school graduation or college confirmation in both cohorts

Figure 14: General Alignment of Secondary School Success Measures with Postsecondary Access



How have these alignments changed over time? Are the same predictors significant for different cohorts of students, or has there been a shift?

We were able to address the question of whether the alignments had changed over time by looking at the statistical interaction between cohort and the predictors we used in the models. While we provided numerous detailed findings above, here we focus on those that we believe are the most important. A summary of these shifts is depicted in Figure 16.

Neighbourhood income was:

- positively associated with high school graduation in Cohort 1 but not Cohort 2
- not associated with either cohort for college confirmation
- positively associated with university confirmation for both cohorts

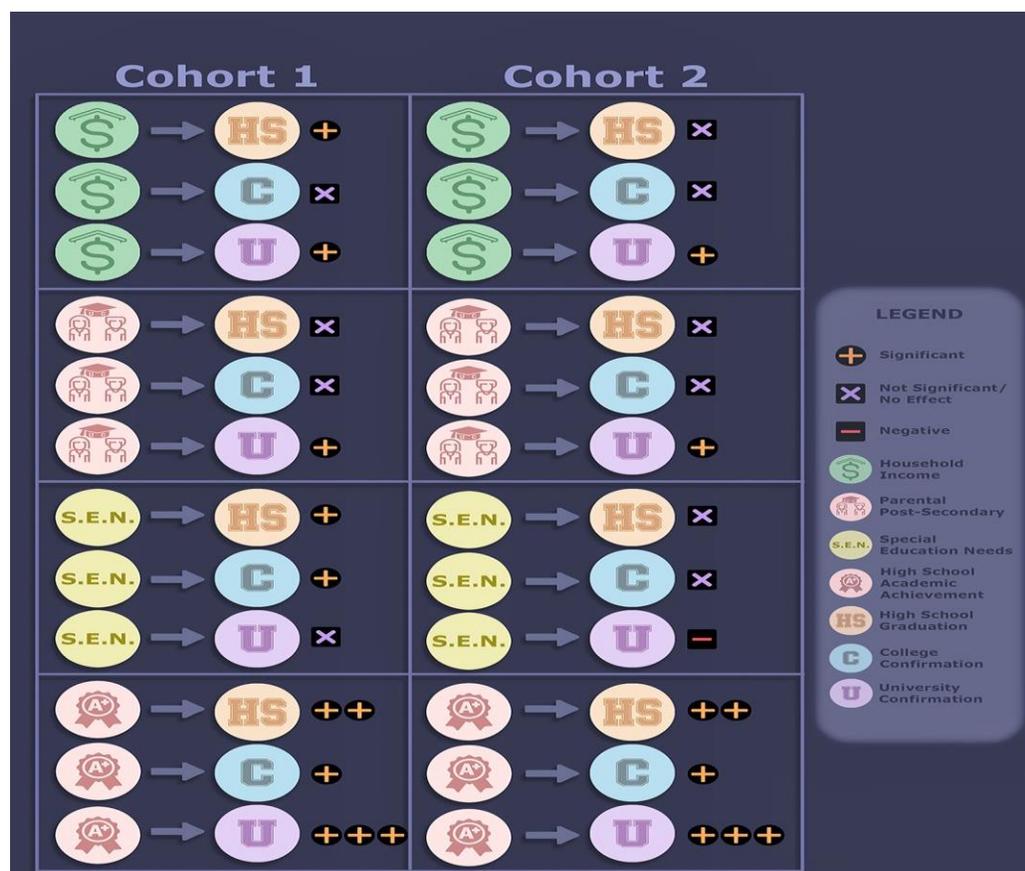
Parental PSE was:

- not significant for either cohort in terms of high school graduation or college confirmation
- positively associated with university confirmation in both cohorts

Special education needs were:

- positive and significant for high school graduation in Cohort 1 but not significant in Cohort 2, with college confirmations following the identical pattern
- not significant for university confirmations in Cohort 1 but significant and negative for Cohort 2

Figure 15: Changes to Predictors of School Success Alignments by Cohort



Are there gaps in secondary school success and PSE access between subgroups of students, particularly those who historically have been underrepresented at the postsecondary level, in terms of high school graduation, university pathways and college pathways? Are these gaps widening, shrinking or remaining stable over time?

In terms of self-identified race:

- East Asian students continue to be more likely to graduate high school compared to Whites, with some suggestion that South Asians and Southeast Asian students in Cohort 2 are also more likely than White students to graduate high school⁷
- Nearly all students in self-identified racial categories were more likely to confirm college compared to White students, with the exception of Latin American and mixed-race students. Relative to White students, there has been growth in the proportions of Southeast and South Asian students confirming college from Cohort 1 to Cohort 2
- In terms of university confirmations, students in all self-identified racial categories except Latin American and mixed race were more likely to confirm university than White students. There was some suggestion that the probability of South Asian students confirming university increased between Cohort 1 and Cohort 2

Returning to students with special education needs, it bears repeating that:

- having a special education need was not associated with high school graduation or college confirmation in Cohort 2, but it was negatively associated with university confirmation in Cohort 2

Discussion and Implications for an Equity-of-Access Agenda

In a recent report, the Higher Education Quality Council of Ontario argued that public policy related to postsecondary access in Ontario must shift from a growth model to an equity-of-access model. Growth model policies, such as basing funding on enrolment in order to get universities to expand their numbers of places,

have resulted in a dramatic increase in overall enrolment at Ontario's colleges and universities over the last two decades. Ontario is now a world leader in adult postsecondary attainment. The assumption inherent in these policies was that growth would also improve the equity of access. However, the evidence suggests that it has done little to achieve equitable access for those students who have been traditionally excluded

⁷ In TDSB data, South Asian countries include India, Pakistan, Bangladesh and Sri Lanka and Southeast Asia includes the countries of Vietnam, Cambodia, Laos and the Philippines.

from postsecondary and labour market opportunities (Deller, Kaufman & Tamburri, 2019, p. 3).

The democratization of high schools and colleges?

This report provides some evidence that high school and college are moving toward becoming democratized, in other words there are decreases observed in the effects of structural barriers, as described below. The weakening or non-significance of structural factors in terms of high school graduation and college confirmation, such as income and parental PSE, and school behaviour factors, such as absenteeism, is good news for students from traditionally disadvantaged groups. Programs and policies at the secondary level aimed at increasing the success of such groups, such as those that fall under the Ministry of Education's Student Success/Learning to 18 Strategy, appear to be having a positive effect on graduation and drop-out rates (Ungerleider, 2008). Student Success Teams may well be the answer to our curious finding about why absenteeism had a weaker negative effect on high school graduation and college confirmations between Cohort 1 and Cohort 2. By identifying at-risk students, Student Success Teachers work to ensure students can earn enough credits to graduate, often through offering students alternatives in terms of timetables, workloads and educational settings. Student Success Teachers would have been fully allocated to TDSB boards by 2007–08, after the deputy minister called for their implementation in 2006 (Ontario Ministry of Education, 2005, 2006). Given the timing of our cohorts in their progress through high school, students in Cohort 2 would have had Student Success Teams in place throughout their high school experience, while such programs would have just been in their initial phases for students in Cohort 1. Because absenteeism is no longer preventing people from graduating from high school as much as it used to, it is likely that some students who previously might not have been able to apply to college (either because they did not graduate high school or did graduate but did not have sufficient grades to qualify for college) are now in a position to do so, which may also explain the weakening of the negative relationship between absenteeism and college confirmation.

Gaps attributable to having special education needs

However, our analysis also provides further evidence that attention must be given to relative gains and persistent gaps. This is perhaps most starkly illustrated by our findings related to students with special education needs. Recall that in terms of high school graduation, students with SEN saw little increase in the predicted probability of graduation from Cohort 1 to Cohort 2, compared to non-SEN students who saw a dramatic increase (see Figure 4). SEN students also saw a significant loss in predicted probabilities of university confirmations, while non-SEN students saw a slight gain. They maintained an advantage over non-SEN students in predicted probability of college confirmations from Cohort 1 to Cohort 2 but saw almost no decrease in predicted probability of not applying to PSE during that period, while non-SEN students saw a significant decrease. Moreover, while SEN is no longer a predictor of high school graduation or college confirmation, it is a strong negative predictor of university confirmation in Cohort 2.

The role of economic and cultural capital

The differing alignment of high school graduation and college confirmation predictors from university confirmations is also revealing insofar as it suggests that real social class differences are being maintained when it comes to university confirmations. While imperfect, our neighbourhood household income indicator was a significant positive predictor for high school graduation in Cohort 1, but became non-significant in Cohort 2, and it was non-significant for college confirmations in both cohorts. Parental PSE was also non-significant for high school graduation and college confirmations in both cohorts. But when we look at university confirmations, however, both neighbourhood income and parental PSE were positive predictors, a pattern that did not change from Cohort 1 to Cohort 2, even with all other variables controlled, including the prior attainment measures. This points to a persistent gap in terms of university access for low-income students and first-generation students (first-generation in the sense that neither parent participated in PSE). They may be making gains in terms of high school graduation (even relative gains) and college confirmations, but they are still at a disadvantage when it comes to university. Not having familial “university experience” has been shown by scores of other researchers as being a hindrance to many aspects of the university application procedure, such as not understanding the costs, financial aid possibilities or even potential programs of study (Phillips, Stephens, Townsend & Goudeau, 2016). Some limited success has been seen in increasing first-generation students to apply to university in intervention models than have been undertaken in Ontario (Ford, Kwayke, Hui & Oreopoulos, 2016). Such programs have offered information sessions to high school students that focus on disseminating information on programs of study, financial aid and filling out the application forms.

Conclusion

This study raises important questions about equity of access to postsecondary for the TDSB and for school boards in the rest of the province. Our findings point to a mix of good and bad news. In terms of good news, we see that coming from a low-income neighbourhood, being a first-generation student, or having a special education need are not barriers to graduating high school and attending college. Absenteeism, while still negatively associated with educational success, is not as strong of a predictor for high school graduation for Cohort 2, quite possibly due to the Student Success programs that were established during the latter half of the first cohort’s high school journey. Self-identified race is not negatively associated with high school graduation or PSE, with the notable exceptions of Latin American and mixed-race students. However, we must remember that these findings on race are from a statistical model that “assumes all things being equal,” which they are often not. Like previous work we have published, we have found that Black students are actually more likely to go university, for example, if they can successfully navigate what we call the “structural obstacle course” that disproportionately places Black youth (particularly boys) in applied streams and designates them as having a special education need (Robson, Anisef, Brown & George, 2018). Assuring racialized families have the information they need to navigate the system to best serve their children is

imperative for their continued success and upward mobility. In the complete absence of race-targeted policies in Ontario (for a full analysis of policy see Robson, Anisef, Newton & Tecle, 2015), the information sheets written by Professor Carl James (n.d.) entitled “The Engaged Parent: Navigating the School System for Black Student Success” are an example of a resource that provides excellent information for parents and that can help them make the best decisions for their children.

In terms of “bad news,” we have found evidence of a persistent class-based gap between those who go to university and those who do not. Parental education and neighbourhood income are still strong predictors for university confirmation, although they do not matter for high school and college. An equity-of-access agenda must address these gaps. Attempts to close these gaps through directed access strategies for first-generation students through Strategic Mandate Agreements do not appear to have helped this second cohort.⁸ Additionally, the “free tuition” program for low-income students that was introduced in 2017 (but has since been eliminated) cannot be examined here because the second cohort would have started university before this program began. Our findings suggest such cuts are likely detrimental to the university prospects of low-income and first-generation students.

As discussed earlier in this paper, a lack of data prevents us from extrapolating to other jurisdictions. The demographics of the TDSB are different from the province in general, as we have mentioned, but the larger problem in terms of generalizing our findings is that we do not have demographic data specific to the school-age population of the province. The other school boards either do not collect such data or have not made it available for research. This is a significant barrier to studying other regions of the province in greater depth and making comparisons between them in order to advance policy related to access, equity and other key educational issues.

⁸Strategic Mandate Agreements are formal agreements between the Ministry of Training, Colleges and Universities (MTCU) and postsecondary institutions that include significant accountability measures. Each year since 2007, PSE institutions must submit reports that demonstrate their success at reaching specific MTCU targets, particularly as they relate to “access groups,” which have been defined as first generation, Indigenous, disabled and francophone students (see Robson, Anisef, Newton & Tecle, 2015).

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