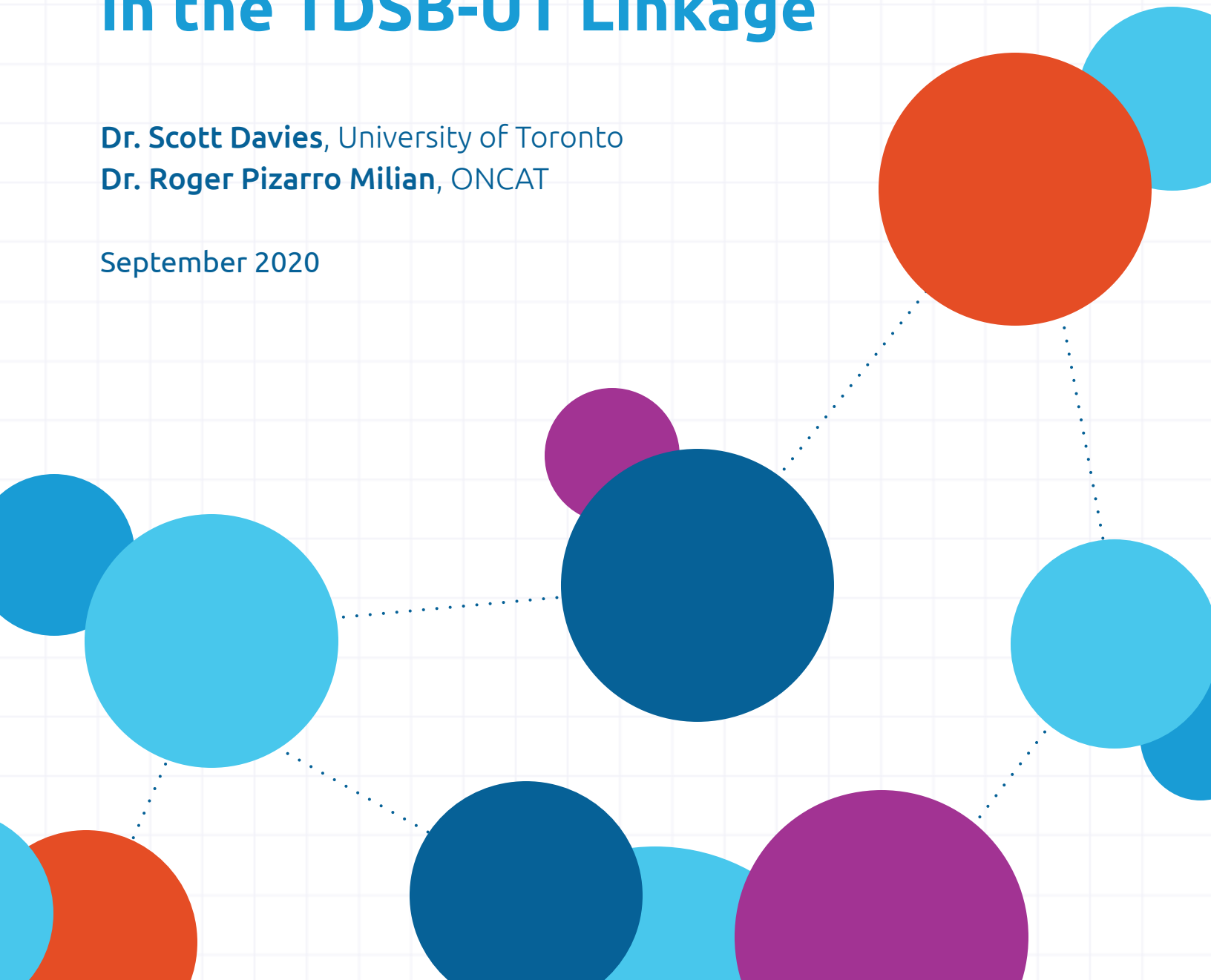**oncat ◯ caton**

RESEARCH BRIEF

A Statistical Portrait of Transfer Students in the TDSB-UT Linkage

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Last week, we went over some patterns in the rates, sources, and cohort differences in transfer within the TDSB-UT dataset. As we explained, most of that analysis could be replicated by institutional research offices across Ontario colleges and universities without the need for any elaborate administrative linkages. Today, we move towards presenting analyses that more fully leverage the breadth of measures and sample size of the TDSB-UT dataset. More specifically, we:

> **1)** Present descriptive profiles of transfer students—segmented by the type of institution they transferred from—using a mixture of academic, behavioural, demographic, and other variables measured during their high school years. For these profiles, we perform a series of difference of means tests (t-tests) that identify which disparities between groups are unlikely to be a result of chance alone (i.e., those that are statistically significant).[1]
>
> **2)** Simultaneously insert these variables into a statistical model that calculates what variables remain correlated with transferring into UT once we account for everything else we know about the students' characteristics.[2]

Before we dive into the details, there are a few things readers should keep in mind. A subset of our variables are based on information gathered by the TDSB through surveying. This means that this data is subject to various forms of **response bias**. Some people are less likely to respond to surveys than others. Among those who do respond, some are also more likely to leave certain questions (e.g., income) unanswered. The statistics we present should thus be interpreted as an estimate rather than exact population statistic.

The Different 'Flavours' of Transfer

Column 1 in **Table 1** presents the characteristics of TDSB students that enter UT directly, without making stops at any other PSE institutions. In turn, Column 2 presents the same characteristics for an aggregate grouping of all TDSB students that transferred into UT. Meanwhile, Columns 3–6 break down those students in Column 2, categorizing them by the type of institution that they transferred from.

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1. Without getting into too much detail, these tests assess whether the size of the observed difference between two groups is large enough to be considered unlikely to exist just due to chance. Generally speaking, the bigger the difference, the less likely it is to be due to chance alone.

2. More specifically, we use binary logistic regression models suitable when dealing with dichotomous (0/1) dependent variables.

In place of "significance stars," we colour-code cells to represent the results of difference of means tests (e.g., t-tests) between each transfer grouping and that of direct-entry students.

Column 2 shows that transfers, as an overall group, are significantly more likely than direct-entry counterparts to be female, born in Canada, speak English at home, self-identify as "white," self-identify as a sexual minority[3], have special education needs, and have parents who hold a "professional" occupation.

Meanwhile, academically, transfers had poorer high school track records than their direct-entry peers, with lower average grades, higher rates of suspension and absenteeism, and being more likely to drop out of high school at some point. They were also more likely to spend an extra year in high school.

3. Within the TDSB records, this includes those individuals that self-identify as LGBTQ+, questioning, or not sure of orientation.

TABLE 1

Variables	Direct Entry (n=26,916)	All Transfers (n=1,223)	Ontario University (n=689)	Ontario College (n=275)	Other Canadian University (n=174)	Internat'l University (n=64)
Female	0.562	0.603	0.611	0.535	0.672	0.578
English	0.317	0.523	0.486	0.478	0.734	0.594
White	0.234	0.402	0.358	0.359	0.685	0.419
Professional (Parent)	0.337	0.411	0.42	0.366	0.488	0.37
University (Parent)	0.691	0.717	0.741	0.569	0.871	0.667
Two-Parent Family	0.837	0.811	0.845	0.748	0.795	0.774
Sexual Majority	0.91	0.898	0.894	0.9	0.905	0.903
Born in Canada	0.54	0.673	0.673	0.618	0.816	0.578
Ever Suspended	0.063	0.098	0.087	0.12	0.103	0.094
Average Grades	79.3	76.6	78.2	71.4	79.7	75.7
Absenteeism	1.51	1.81	1.79	1.68	2.05	2
Extra Year HS	0.007	0.012	0.006	0.033	0	0
Ever Drop Out	0.022	0.034	0.022	0.047	0.034	0.094
Transfer out of TDSB	0.048	0.074	0.054	0.102	0.08	0.125
Gifted	0.045	0.056	0.039	0.036	0.08	0.063
Special Needs	0.031	0.052	0.038	0.087	0.046	0.063

Note: Sample sizes vary across each metric due to missing data.

LEGEND: Significantly More   Significantly Less   Not Significant

This is not to say that transfer students are a homogenous group—far from it. There is much variation in how different types of transfers differ from or resemble their direct-entry counterparts. In Columns 3 and 5, we see that transfers from Ontario and other Canadian universities have academic profiles in HS that are comparable to those of direct entries. They have similar HS grades, drop-out rates, extra year rates, and K–12 transfer rates. Interestingly, community college transfers statistically differ from direct-entry students across all of those dimensions. At the same time, we see that community college transfers resemble direct-entry students with respect to their gender and their parents' occupational category: two areas where significant differences are observed between direct entry and both Ontario and Canadian university transfers.

We interpret this array of differences between transfer sub-categories as indicating that there are likely various 'flavours' of transfer students at UT. This is a finding that has important implications for those thinking about developing transfer student supports. Perhaps a one-size-fits-all approach may not be the most effective way of supporting transfers.

In statistical models that integrate all of these variables (along with other controls) to estimate their net effects—holding the effect of all others constant—we are able to establish more confidently which variables are correlated with the decision to transfer. Again, with all other things being equal, we see that:

1) As average HS grades increase, the likelihood of a student taking a transfer route into UT decreases; however, having a higher English EQAO score increases the odds of a student engaging in transfer, and the same is true of having a special education need (SEN);

2) Increases in absenteeism in HS correspond with an elevated chance of transfer; and

3) Being female, a sexual minority, white, coming from a higher income neighbourhood, and being born in Canada all improved the odds of engaging in transfer into UT.

It is interesting to note that our models, despite containing an extensive number of academic and demographic variables, explain only a relatively small amount of variance (~6%) in our outcome. This means that there are many other factors we don't account for that influence the pathways that students take. This makes sense, given

that transfer is likely the outcome of life circumstances, which may be difficult to capture in surveys or administrative records.

Our statistics and model are useful in that they allow us to establish statistically significant differences and relationships between a wide range of variables and transfer. Nevertheless, they don't tell us what processes produce these relationships. Further (likely qualitative) research is needed to understand the story behind these numbers. However, we can devise a few educated guesses. With respect to lower grades, for example, we believe that it is plausible that students who underperform academically while in HS are more likely to be denied direct entry into UT, given the institution's relatively high admission standards. This could mean that they are funneled into other institutions that have lower admission standards, from which they eventually find their way back into UT after completing their coursework. Numerous other interpretations of our other significant predictors are plausible. However, we'll let readers come to their own conclusions about the mechanisms that may explain them.

Up Next

Having a sense of which TDSB students tend to transfer into UT, next week, we move towards developing an understanding of their outcomes once they enter the institution. More specifically, we will look at their cumulative GPAs, access to STEM fields, and eventual graduation rates.

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oncat.ca/en/projects/tdsb-ut-linkage-and-transfer-project

Established in 2011, the Ontario Council on Articulation and Transfer (ONCAT) was created to enhance academic pathways and reduce barriers for students looking to transfer among Ontario's public colleges, universities, and Indigenous Institutes.