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Predictors of School Exclusion as a Disciplinary Measure in New Zealand: A Maori, Pacific Peoples and Pakeha Comparison

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Abstract: This study analysed a cohort of over 43,000 students from their first day of school in 2008 to the end of their compulsory schooling in New Zealand in 2018. Data was collected from a range of linked national datasets collated by Stats NZ, New Zealand's official data agency. Variables were categorised into demographic, socioeconomic status (SES), learning support, family climate and parental education. These categories and the variables within them were identified in a review of the school exclusion literature. Regression analysis was applied to establish which variables correlated with school exclusion. A subset of over 34,000 students was also stratified by ethnicity and analysed to ascertain if predictors of school exclusion varied by ethnicity. The ethnic groupings compared were Pakeha (the largest ethnic grouping), Maori and Pacific Peoples (two ethnic groups over-represented in school exclusion statistics). Pakeha and Maori had very similar profiles in terms of which variables identified by the literature significantly correlated with school exclusion. However, when these explanatory variables are set to zero, Maori have higher rates of exclusion than Pakeha. There are also different drivers of school exclusion between Pacific Peoples who receive English as a second language (ESOL) support and Pacific Peoples who don't. The significant predictors of exclusion are different for these two groups of Pacific Peoples, as is the proportion of exclusions explained by the model. This research contributes to the literature by identifying predictors of school exclusion in a multicultural, international setting. It also examines how well a model based on existing literature predicts exclusion across populations with differing ethnic, SES, language and cultural characteristics.

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Introduction

A literature review on the continued disproportionate exclusion of certain children was commissioned for the Department of Education in the UK in 2019 (Graham et al, 2019). One of the main conclusions of the study was there were inter-connected drivers of school exclusion, including racial stereotyping and a feeling of not belonging at school (Graham et al). This conclusion was based on findings such as Paget et al (2018), who when analysing a sample of over 12,000 children in the Avon longitudinal birth cohort study, found significant factors associated with school exclusion included male gender, lower socioeconomic status (SES), language difficulties and special educational needs (SEN). Similar results were found by Kulz (2015) that race, class, gender and SEN were perceived by parents to be drivers of school exclusion. The body of literature, predominantly from the United States and the United Kingdom, as a whole identifies gender, SEN, ethnicity and SES as significant predictors of school exclusion. (Achilles et al., 2007; Bowman-Perrott et al., 2013; Strand & Fletcher, 2014; Strand & Lindsay, 2009; Theriot et al., 2010). These findings have led to the criticism of school exclusion being used as a form of punishment as it disproportionately impacts on children from lower SES areas, ethnic minorities and SEN students (Bowman-Perrott et al., 2013; Strand & Lindsay, 2009; Theriot, Craun, & Dupper, 2010). It has been argued that these students have the most to gain from consistent and structured learning environments (Achilles, McLaughlin, & Croninger, 2007). In the United Kingdom exclusion is even argued to be 'a pipeline to prison' (Perera, 2020). Analysis of exclusions data shows that it provides the desired behavioural change less than half the time per student exposed, with Strand & Fletcher (2014) finding that a little over half of those pupils that experienced one exclusion go on to be excluded again. Although the literature review undertaken by Graham et al (2019) identified a paucity of research explaining the differential in exclusions between genders, it did identify a body of literature examining school exclusion rates for low SES, SEN and ethnic minority children. This article derives a model based on that literature, and applies it to a large dataset linked across several government agencies in New Zealand.

Literature Review

Ethnicity
In some local authorities in the United Kingdom, black Caribbean students are excluded up to six times more than their white British peers (McIntyre, 2021), although this finding does not control for factors such as socioeconomic status (SES). When SES is accounted for the over-representation of ethnic minorities still persists (Strand & Fletcher, 2014). When controlling for SES through free school meals in a national cohort of 500,000 in the United Kingdom, Strand & Fletcher (2014) found over thirty percent of black Caribbean and Mixed White & Black Caribbean students experience a fixed-term exclusion compared to a national rate of around sixteen percent overall. They are also excluded for approximately twice as many days of fixed-term exclusions compared to white British peers. Black students are also found to have a much higher rate of permanent exclusion even after factoring in the higher rate of fixed-term exclusion. When SES and special educational needs (SEN) are not controlled for, racism is identified in some of the literature as a possible explanation for the higher exclusion rates of Black Caribbean students. It is suggested "racism was considered to influence schools' views on (un)acceptable behaviour and expectations of different sets of pupils" (Graham et al, 2019, p. 18). This has led researchers such as Hamilton (2018) to develop theoretical arguments that school curriculum and classrooms are White spaces. Unintentional racism can result in discriminatory practices in the classroom, such as lower expectations of Black students. (Stamou et al, 2014). In a report for the Institute of Public Policy Research, Gill et al (2017) suggests that subconscious stereotyping of Black pupils behaviour by teachers may contribute to the higher exclusion rates for Black students. In their review of the literature, Graham et al (2019) describe an experimental approach used by Okonofua & Eberhardt (2015). The more teachers believe fictional students to be Black, the more seriously they view their behavioural issues. They also consider future suspension from school to be more likely. While both the United Kingdom and United States have found a correlation between exclusion and ethnic minorities (Strand & Fletcher, 2014; Theriot et al., 2010), one American study found ethnicity variables (African American and Hispanic) not to be

significant after controlling for socioeconomic status (Achilles, 2007). It is also pertinent to note that ethnicity is more nuanced than simply Black and White students. In the UK for example, while Black Caribbean boys have higher exclusion rates than White students, while Black African pupils have lower rates of exclusion than White pupils (Graham et al, 2019). In New Zealand, Asian students have lower rates of school exclusion than Pakeha (White) students, while Maori and Pacific Peoples have higher rates of exclusion than Pakeha. The gap between Pakeha and Maori rates of exclusion is larger than for Pakeha and Pacific Peoples (see table 1). An additional dimension is Maori are the indigenous people of New Zealand, while Pacific Peoples are more recent immigrants to New Zealand. To reinforce the possible inter-relatedness of influences on school exclusion, relative to Pakeha, Maori and Pacific Peoples are over-represented in low SES statistics, crime statistics, and have poorer health outcomes.

SES and SEN
Strand and Lindsay (2009) found being registered for free school meals increases the risk of temporary exclusion by 4.1 percentage points. Having parents with no qualifications increases the risk of exclusion by 3.4 percentage points compared to students with parents who have a college or higher degree. Students with low SES not only have a higher risk of exclusion but also have a harder time continuing education or catching up on missed schooling from exclusion as they have fewer resources to do so. In New Zealand Covid-19 brought to light how many homes and students were still without suitable internet connection. A south Auckland school Kia Aroha reported ninety-seven percent of students did not have internet access at home before the COVID lockdowns (Franks, 2021).

SEN students have a greater risk of school exclusion, especially those with emotional and behavioural issues (Achilles et al., 2007). Black Caribbean students are more likely to be labelled as having emotional and behavioural problems than their white peers (Strand & Lindsay, 2009). Cole (2015) suggests mental health, education, social and political factors may all be interacting to increase the prevalence of school exclusion. His research suggests that excluded students face many life challenges including poverty, family breakdown, housing shortages and crime. Violence and abuse in the home (Apland et al, 2017), and parental imprisonment (Morgan et al, 2013) have also been identified as impacting on behaviour at school. These findings led Achilles (2007) to conclude "…youth who are perhaps most in need of enhanced supports due to academic, psychological, financial, and social disadvantages are most likely to experience disciplinary exclusion." (p. 25). These factors were described as "multiple, interrelated and layered vulnerabilities….including SEN needs, poverty, low attainment, being from certain minority ethnic groups, being bullied, poor relationships with teachers, previous life trauma and challenges in the home lives, including poor housing, abuse and parental illness" (p. 25).

In addition to SES, SEN and ethnicity, negative staff-pupil relationships along with a sense of 'not belonging' at school are prominent themes in the literature for contributing to higher rates of school exclusion (Graham et al, 2019; Craggs et al, 2017; Tucker, 2013; Robinson, 2014). When summarising a body of literature (Wright, 2010; Carlile, 2009, Gill et al 2017), Graham et al (2019) state students are more likely to report a feeling of 'not belonging' when they are being racially stereotyped, leaving them feeling isolated and disrespected. It is therefore worth describing the New Zealand context in terms of differing educational perceptions and achievement by ethnicity.

New Zealand Context

Definition of School Exclusion
There are a range of interventions used in NZ schools which are described as measures of a school's reaction to challenging behaviour (Education Counts, 2021).

A *stand-down* is where a student may be formally removed for up to 5 school days. A student can only be stood down for a maximum of 5 days a term, or 10 days a year. The student returns automatically to school following a stand-down. A *suspension* is where a student is formally removed until a Board of Trustees (BOT) meeting where the next course of action is decided. The BOT can lift the suspension, extend the suspension, or terminate the student's enrolment at that school. If the student is under 16 years of age, the termination of their enrolment is refered to as an *exclusion*, and the student is required to enrol at another school. If the student is over 16 years of age, the termination

of their enrolment is refered to as an *expulsion*, and the student may or may not choose to enrol at another school. (Education Counts, 2021). According to the courts, when considering exclusion, the principal must consider all circumstances, and not apply a predetermined rule. (Ministry of Education, 2021).

For the purposes of this paper, any student who has been stood-down, suspended or excluded is labelled as an exclusion. Students who are expelled are not present in this study which follows a cohort of students from the start to the end of their compulsary schooling.

Ethnicity

Māori are the tangata whenua, the indigenous people, of New Zealand. After their arrival from Polynesia in the 13th century Māori lived in relative isolation until the arrival of the first Pakeha (European/Caucasian) settlers in the 18th century. Māori are the second largest ethnic group in New Zealand, currently making up approximately 16.5% of the population. Pakeha are the largest ethnic group accounting for 70.2% of the population. The majority of Pakeha identify as New Zealand European. Asian account for 15.1% of the population, while Pacific Peoples account for 8.1% of the population. Pacific Peoples are more recent arrivals from Polynesia, the majority of whom are first, second or third generation New Zealanders (EHINZ, 2021).

Educational Inequalities in New Zealand

In UNICEF's 2018 report (Chzhen, 2018) New Zealand ranked in the bottom quarter (33rd out of 38) in terms of inequality of education in 'rich' countries. This low ranking is consistent across preschool, primary and secondary education. In earlier years of education, New Zealand ranks 30th out of 41 in preschool education participation. When examining reading comprehension in 10 year olds in 2016, New Zealand had the second largest gap between a student at the 10th percentile and one at the 90th percentile, only marginally ahead of Malta in last position. New Zealand was also identified as having some of the largest shares of students not achieving a good level of reading proficiency. The report also identifies a negative relationship between the percentage of students reporting being bullied and reading proficiency. Among the sample of 10 year olds, New Zealand was ranked last (30th out of 30) with the highest percentage of students reporting being bullied by students from their school. New Zealand had the 33rd largest gap in reading comprehension between the 10th and 90th percentile at the secondary level (15 year olds), out of 38 countries. A significant difference in reading proficiency between 15 year old boys and girls was also identified, with girls outperforming boys. New Zealand had the second largest gender gap (27th out of 28), ahead of only Malta.

Ethnicity Based Educational Inequalities in New Zealand

The National Certificate of Educational Achievement (NCEA) Level One is the qualification obtained at the end of compulsory schooling in New Zealand. Since this qualification was introduced in 2003, Pakeha have obtained the qualification at higher rates than Maori or Pacific Peoples. In 2020, those rates were 75% for Pakeha, 73% for Asian, 68% for Pacific Peoples and 60% for Maori (NZQA, 2021).

In a comparative study by Blank, Houkamau and Kingi (2016) comparing Maori and African American students' experience of unconscious bias in education, some key messages pertinent to this research emerged. Findings include that "Maori children face significant barriers to achievement, which stem from negative stereotypes attached to Maori as a social group" (Blank et al, 2016, p. 4). The term *Pygmalion Effect* is used to describe teachers having lower expectations of their Maori students leading to lower achievement of Maori. The authors conclude that "Recognising how unconscious bias influences teachers' relationships with Maori students is the key to lifting Maori educational achievement" (Blank et al, 2016, p. 4). It is also noted that an assumption is held by many that Maori educational underachievement is the result of coming from a disadvantaged background. This position is refuted by "evidence that a higher socio-economic position does not account for all advantage that is experienced by non-Maori" (Blank et al, 2016, p. 4). The authors go on to suggest socio-economic status is not the sole driver of Maori educational underachievement. This paper examines whether a similar effect is happening for school exclusions by asking the question how

much of the variance in exclusion rates between Maori, Pacific Peoples and Pakeha can be accounted for by variables identified by the literature such as SES and SEN?

It is already known that rates of exclusion for Maori and Pacific Peoples are higher than Pakeha rates of exclusion, as shown in Table 1 below.

Table 1. Age-standardised rates per 1,000 students, by ethnic group. (Education Counts, 2021).

	Pakeha	Maori	Pacific Peoples
Suspension	3.2	8.3	4.6
Stand-down	24.4	48.6	34.4
Exclusion	1.1	3.2	1.8
Expulsion	1.0	1.9	3.4

When examining selected SES wellbeing measures by ethnicity (StatsNZ, 2019), 31% of Pakeha reported having not enough, or only just enough, money to meet everyday needs. Comparable figures for Maori and Pacific Peoples are 50% and 72% respectively. When identifying the effect of crime on their life (0=no effect, 10=large effect), Pakeha report a score of 2.8, with Maori and Pacific Peoples reporting scores of 3.4 and 4.5. Pakeha are also less likely to be convicted of committing a crime. The proportion of the 1978 birth cohort that was convicted by the age of 38 (2016), is 22% for Pakeha, 46% for Maori and 33% for Pacific Peoples.

SES and SEN indicators have been shown in the literature above to be predictors of school exclusion. Allowing for SES variables may remove the differences in school exclusion rates by ethnicity. However, there may also be non-SES factors influencing rates of exclusion such as unconscious bias identified in the student achievement literature above. Data from StatsNZ in 2018 indicates that 15.1% of Pakeha 16.0% of Pacific Peoples and 24.4% of Maori had experienced discrimination in the last 12 months. When asked a series of institutional trust based questions (with responses measured on a continuum with 0 = not trusted at all and 10 = trusted completely) table 2 below shows that Pacific Peoples have the most trust in the education system, followed by Pakeha and then Maori. Maori, who indicated higher levels of discrimination, had the least institutional trust. Pakeha and Pacific Peoples who reported similar levels of discrimination, also reported similar levels of institutional trust (StatsNZ, 2019).

Table 2. Institutional trust by ethnicity. (StatsNZ, 2019).

		Pakeha	Maori	Pasifika
	Trust held for courts	6.9	5.9	6.6
	Trust held for education system	6.9	6.3	7.2
	Trust held for health system	6.8	6.3	7.2
	Trust held for media	4.6	4.2	4.7
	Trust held for parliament	5.5	4.9	5.8
	Trust held for police	8.0	6.9	7.3

A 2018 PISA report (May, Jang-Jones & McGregor, 2019) surveyed the views of 15 year olds in New Zealand. The students self-reported attitudes towards, a sense of belonging at school, parental support for their schooling, and academic expectations. The results, stratified by ethnicity, are given in table 3. All ethnicities reported high levels of parental support, with similar scores across the different ethnic groupings. The average level of agreement across the three parental support statements are similar for all three ethnic groupings, with Pakeha at 90.7%, Maori at 89.3% and Pacific Peoples at 92%. For the two friendship statements the percentage of agreement is lower with Pakeha at 79.5%, Maori at 81% and Pacific Peoples at 84%. Interestingly, Pakeha students return the lowest percentage, perhaps reflecting the more whanau based cultures of Maori and Pacific Peoples. The higher Pacific Peoples percentage could also be the result of the Pacific Peoples students being clustered in a relatively small number of schools, as mentioned in the PISA report (May, Jang-Jones & McGregor, 2019). Whilst

Pakeha and Pacific Peoples return similar levels of feeling safe at school, Maori are five percentage points fewer than Pakeha, and 7 fewer than Pacific Peoples. A sense of belonging at school reveals the largest gap, with only 63% of Maori agreeing with the statement, five percentage points fewer than Pakeha, and eleven fewer than Pacific Peoples.

Table 3. Attitudes of 15 year old New Zealanders. (May, Jang-Jones & McGregor, 2019)

	Non-Maori & Non-Pacific Peoples	Maori	Pasifika
I feel like I belong at school	68	63	74
I feel safe at school	81	76	83
I make friends easily at school	74	78	81
Other students seem to like me	85	84	87
My parents encourage me to be confident.	91	90	93
My parents support me when I am facing difficulties at school.	88	87	90
My parents support my educational efforts and achievements.	93	91	93
% of students expected to go on to a degree or higher.	51	40%	48%
% of students expecting a level 1, 2 or 3 NCEA certificate to be their highest qualification.	29	40%	33%

Note: Pakeha trends mirror those of the non-Maori and non-Pasifika groups as Pakeha makes up most of the 2018 Pisa sample.

As discussed above Maori and Pacific Peoples have lower educational achievement and higher rates of school exclusion than Pakeha, the biggest gap being between Maori and Pakeha. It is plausible that the factors influencing this lower academic success may vary between Maori and Pacific Peoples. It is suggested that disparities between Maori and Pakeha educational outcomes are due to more than differences in SES (Blank et al, 2016). This suggestion is also plausible in New Zealand given that Maori report approximately a 50% (9 percentage points) greater experience of discrimination than Pakeha and Pacific Peoples. While Pacific Peoples reported the highest levels of peer acceptance and a sense of belonging and safety at school, Maori returned the lowest percentages of the three ethnic groupings. The PISA report does hint that SES may have more explanatory value for Pacific Peoples, stating that "Pacific students may have less access to educational opportunities, with Pākehā students more likely to have access to educational opportunities" (May, Jang-Jones & McGregor, 2019, p. 50). It noted that of the Pacific Peoples sample in the study, 47% were attending low SES (decile 1-3) schools, leading to the conclusion that "Pacific students in New Zealand tend to be situated in socio-economically disadvantaged neighborhoods" (May, Jang-Jones & McGregor, 2019, p. 43).

SES disadvantages may be resulting in lower educational outcomes for Maori and Pacific Peoples relative to Pakeha, as they are over-represented in lower SES households. Other factors such as a sense of acceptance in the education system could contribute to the difference Pacific Peoples and Maori academic outcomes. In terms of maintaining a strong cultural identity, the PISA report revealed that "While over 50% of Pacific students mostly used English at home, many lived in bilingual households. This suggests that parents are encouraging their children to learn and maintain their family's language at home and by association, retain a strong cultural identity" (May, Jang-Jones &

McGregor, 2019, p. 48). This is in contrast to Maori students, who in response to the question 'What language do you speak at home most of the time?' reported that 94% spoke English most of the time, with te reo Maori being the most common non-English language at 4%. There is however a cautionery note in the report that "PISA doesn't assess students who are studying in high Māori-immersion settings, so the data here almost certainly underestimates the proportion of 15-year-olds who speak Māori at home" (May, Jang-Jones & McGregor, 2019, p. 42).

Informed by the literature, a model is developed including SES, SEN, fanily climate and parental education as explanatory variables. Coefficients and model intercepts are then compared to establish whether the model adequately explains different rates of exclusion for Pakeha, Pacific Peoples and Maori students, using a large national cohort. The model will also disclose whether the three different ethnicities have similar drivers of school exclusion.

Materials and Methods

Data was collected either prior to the child commencing their primary school education, or from the national census held in 2013. An analysis was then conducted on a subset of over 43,000 students from their first day of school in 2008 to the end of their compulsory schooling in New Zealand in 2018. Any student who spent more than 6 months outside of New Zealand since turning five has been removed from the dataset. This is necessary given time outside of New Zealand influences the probability of being excluded from a New Zealand school. The dataset of 43,386 is obtained from the New Zealand Integrated Data Infrastructure (IDI) is a large research database holding data for the whole New Zealand population. It holds microdata about people and households. The data is about life events, like education, income, benefits, migration, justice, and health. It comes from government agencies, the Ministry of Social Development, the Ministry of Education, Stats NZ surveys, and non-government organisations (NGOs). The data is linked together, or integrated, to form the IDI. (StatsNZ n.d.).

This study uses a similar initial approach to Strand & Fletcher (2014) which also uses population data to determine the risk of exclusion for students with particular characteristics. This is in contrast to most studies exploring the predictors of school exclusion based on relatively small sample sizes such as Theriot et al. (2010), or those that use databases such as the Special Education Elementary Longitudinal Study (SEELS) (Achilles et al., 2007; Bowman-Perrott et al., 2013). These studies based on samples of the population can fall victim to sample bias as those who remain in the study may be different from those that drop out. This study differs from Strand & Fletcher (2014) which used secondary school education data while this study uses data from the first day at school to the final year of compulsory education. This study also adds to the overall understanding of exclusion as more SES predictors can be included due to the wealth of information in the IDI. This enables including 'family climate' variables due to the linked nature of the data between children and parents. Another dimension this research contributes is the nuanced differences between the New Zealand context, and that of countries such as the United States and the United Kingdom. One of these nuanced differences is a substantial indigenous population that is overrepresented in exclusions in New Zealand. New Zealand's Māori population often speak English as their first language as a result of colonisation while Pacific Peoples, the other ethnicity shown to be at higher risk of exclusion (Education Counts, 2021), are substantially more likely to have English as their second language.

There are four categories of predictors explored in this study which the literature above suggests are related to exclusion: demographic variables, dimensions of SES, dimensions of SEN (referred to as learning support in this paper), parental education and what is referred to in this paper as family climate variables. Note that all of the variables below are binary in nature.

Demographic Variables
The gender variable is sourced from the 2013 Census, with all students identifying as male or female. The ethnicity variables were sourced from the Ministry of Education'(MOE) personal details table, which captures the ethnic group all students put down as their first ethnicity on their school forms.

The Late start variable is used to show if a student started school at year one (first attending school before the end of June) or year zero (first attending school after the end of June). This policy means that students receive more formal education if they are born between months June and December.

Learning Support

The SEN variable is used to capture students who are recorded as needing a special education service before their first exclusion. The information used to create this variable is sourced from the MOE intervention data in the IDI. It is possible a child has been enrolled in different special education services at different times, so the earliest intervention date is used. The reading recovery indicator variable is used to show if a child has been part of a reading recovery program at any point before they were excluded. Reading recovery is an intervention method used in schools to help students who are struggling with reading and writing. The variable is created using the same process as the SEN variable. The disability variable captures students who were listed on the 2013 census as having a disability. Where the SEN variable records students with emotional and behavioural needs this self-reported variable is more likely to be a physical disability. The English for speakers of other languages (ESOL) indicator variable is used to show students that attended ESOL programs before exclusion. ESOL programs are used to help students struggling with English as a second language with reading and writing. As with the SEN and reading recovery variables, the ESOL variable is recorded for students who attended an ESOL program before exclusion. Students identified as requiring ESOL support post-exclusion are not included. This is done to avoid reverse causality. The information used to create the ESOL variable is sourced from MOE's intervention data in the IDI. An additional ESOL Pacific Peoples variable is also included. This is an interaction variable that captures all Pacific Peoples students that receive ESOL support. While both Maori and Pacific Peoples are over-represented in exclusion statistics, Pacific Peoples use English as the first language in the home in smaller numbers than Maori (May, Jang-Jones & McGregor, 2019).

Dimensions of SES

The parent homeownership variable captures students who live in a home where the owner of the home resides, rather than renting the property (Hernandez, 2019). The warm home variable is when the number of heating sources in the home is more than two (Hernandez, 2019); while the internet variable captures the students with internet access at home (Hernandez, 2019). The information used to create these three variables is sourced from the 2013 census, as is the information used to create the parental education dummy variables. The family benefit recipient variable records if a child is been listed on a parent's social welfare benefit before the first day of school. The information for this variable is sourced from Ministry of Social Development's (MSD) benefit dynamics data in the IDI.

Dimensions of Family Climate

The abuse victim indicator variable is used to show if a child has encountered a form of abuse that has been recorded by Oranga Tamariki (Ministry for Children) before the first day of school. Oranga Tamariki is a government agency supporting children whose wellbeing is at significant risk of harm now, or in the future. The information to create this variable is sourced from the Oranga Tamariki (formerly known as children and young families) dataset in the IDI. Type of abuse events includes sexual abuse, physical abuse, behavioural abuse, emotional abuse and neglect. The parent absent variable shows if either the mother or the father was not recorded on a child's birth certificate. The mother and father criminal charge variables signal if a parent of a student had any criminal offence charges laid before the child's first day of school. These charges could have been laid before the child is born.

Table 4. Number counts – Full Sample.

	Sample population		Excluded students	
Number of Students	43,386		5589	
Number of Students Excluded	5,589		N/A	
Demographic				
Female	21,264		1,875	
Early Start	32,679		4,239	
Maori	10,212		2,463	
Pacific Peoples	3,243		645	
Asian	2,637		99	
Pakeha	26,532		2,322	
Other Ethnicity	762		162	
SES				
Parent Home Ownership	20,487		1,665	
Warm Home	37,674		4,761	
Internet Access at Home	35,646		3,501	
Family Benefit Recipient	19,914		4,110	
Learning Support				
Reading Recovery	5,967		1,275	
Special Educational Needs	1,242		300	
Self-Reported Disability	1,671		321	
English Second Language	3,750		552	
Pacific Peoples English Second Language	1,806		423	
Family Climate				
Abuse Victim	2,049		771	
Parent Absent	2,280		687	
Father Criminal Charge	15,441		3,162	
Mother Criminal Charge	7,272		2,082	
Parental Education	Mother	Father	Mother	Father
No School Qualification	5,826	5,784	1,434	1,137
High School Qualification	14,496	9,753	1,698	951
Above High School	6,672	8,586	615	630
Bachelor Degree	6,762	4,449	366	168
Postgraduate Qualification	2,364	2,172	117	72

Three different approaches are initially used to analyse the data. A Logit model is used to show the probability of an event. In this case, the event is the first exclusion. All coefficients in this model have been altered to show average marginal effects on the probability of being excluded. This way differences in probabilities can be discussed, which are intuitively easier to understand than odds ratios. A Poisson model is also used. Poisson regression is a generalised linear model with a count dependant variable. In this study, the count of exclusions one child faces in their school career is used as the dependant variable in the Poisson model. Finally, a Cox proportional-hazards model, a type of survival regression, is used. This model is commonly used in medicine to test how long patients survive on certain treatments. For this study, the Cox model accounts for the speed at which an exclusion happens. The number of days before the first exclusion is taken into account when making predictions. Where there was no exclusion, the number of days between the first day of school and

2019 was used. This model only accounts for the time of first exclusion, and does not account for the number of times a child can be excluded. Equation (1) below is used for all three approaches.

$$Y^* = a + \beta_1\text{Female} + \beta_2\text{Early Start} + \beta_3\text{Maori} + \beta_4\text{Pacific Peoples} + \beta_5\text{Asian} + \beta_6\text{Other Ethnicity} + \beta_7\text{Home Ownership} + \beta_8\text{Warm Home} + \beta_9\text{Internet Access} + \beta_{10}\text{Family Benefit} + \beta_{11}\text{Reading Recovery} + \beta_{12}\text{SEN} + \beta_{13}\text{Disability} + \beta_{14}\text{Reading Recovery} + \beta_{15}\text{Special Educational Needs} + \beta_{16}\text{Disability} + \beta_{17}\text{ESOL} + \beta_{18}\text{ESOLPacific Peoples} + \beta_{19}\text{Abuse Victim} + \beta_{20}\text{Parent Absent} + \beta_{21}\text{Father Criminal Charge} + \beta_{22}\text{Mother Criminal Charge} + \beta_{23}\text{Mother High School} + \beta_{24}\text{Mother Above High School} + \beta_{25}\text{Mother Bachelor} + \beta_{26}\text{Mother Postgrad} + \beta_{27}\text{Father High School} + \beta_{28}\text{Father Above High School} + \beta_{29}\text{Father Bachelor} + \beta_{30}\text{Father Postgrad} + e \quad (1)$$

To establish if the variables are consistent across different ethnic groups, logit regressions are run with the data stratified by ethnicity. In addition, OLS regressions are also run to determine how much of the correlations with exclusion the model explained for each ethnicity. To enable a discussion around the explanatory value of the model for each ethnicity, OLS results are reported, which allows for intercept to be compared (logit results are shown in appendix one). The dataset used for this analysis is smaller, as additional information is collected measuring the percentage of each ethnicity attending the school of each student. This information is most accurately gathered at the secondary school level, however some students do not have this data recorded, so are removed from the dataset. The dataset is still substantial at over 34,000 students. Number counts are shown in table 5 below.

Table 5. Number Counts – High School Sample.

		Maori	Pacific Peoples		Pakeha
			ESOL	Non-ESOL	
Number of Students	34,662	8,175	1,647	1,206	20,703
Number of Students Excluded	4,677	2,049	378	210	1,884
Demographic					
Female	16,974	3,996	819	639	10,053
Maori	8,178	----	----		----
Pacific Peoples	2,853	----	----		----
Asian	2,271	----	----		----
Pakeha	20,703	----	----		----
Other Ethnicity	660	----	----		----
SES					
Parent Home Ownership	16,359	2,670	258	357	11,439
Warm Home	30,351	7,047	1,386	1,062	18,228
Internet Access at Home	28,416	5,319	840	843	18,810
Family Benefit Recipient	18,747	6,318	1,344	879	8,610
Learning Support					
Reading Recovery	4,587	1,404	315	159	2,505
Special Educational Needs	912	279	45	24	519
Self-Reported Disability	1,197	390	48	30	696

	Mother	Father	Mother	Father	M	F	M	F	Mother	Father
English Second Language	3,360		96		----		----		180	
Pacific Peoples English Second Language	1,647		----		1,647		1,206		----	
Family Climate										
Abuse Victim	3,780		1.821		270		171		1,377	
Parent Absent	1,863		939		141		135		594	
Father Criminal Charge	13,554		4,674		882		609		6,660	
Mother Criminal Charge	7,068		3,324		486		357		2,697	
Parental Education	Mother	Father	Mother	Father	M	F	M	F	Mother	Father
Education Unknown	5,775	10,356	1,590	3,642	654	951	255	537	2,163	4,026
No School Qualification	4,686	4,644	1,842	1,539	366	390	207	201	1,950	2,217
High School Qualification	11,451	7,599	2,802	1,545	447	198	435	255	7,371	5,289
Above High School	5,430	6,810	1,029	984	111	81	162	135	3,846	5,250
Bachelor Degree	5,394	3,567	726	351	57	21	117	57	3,876	2,640
Postgraduate Qualification	1,929	1,686	186	117	12	<4	30	24	1,494	1,284

For this analysis, the data is collected either in the child's last year of compulsory school (2018), or from the national census held in 2013. As a result, some variables such as parental criminal charges have increased from the original analysis. Where table 4 shows parental conviction counts prior to the child starting school in 2008, table 5 shows conviction counts of parents in 2018, when the child finished their compulsory schooling.

The model uses the same independent variables as (1) above, with two exceptions. The early start variable in model (1) is found to be not significantly correlated to school exclusion. In model (2), the variables are collected from the 2013 census or in 2018 at the end of compulsory schooling. The early start variable is therefore removed from model (2) given the length of time that has passed since the child commenced school in 2008. The ethnicity variables are removed as the data is stratified by ethnicity for model (2). Regressions are run seperately for Pakeha, Pacific Peoples receiving ESOL, Pacific Peoples not receiving ESOL and Maori. The resulting model is shown below (2).

$$Y^* = a + \beta_1 \text{Female} + \beta_2 \text{Maori} + \beta_3 \text{Pacific Peoples} + \beta_4 \text{Asian} + \beta_5 \text{Other Ethnicity} + \beta_6 \text{Home Ownership} + \beta_7 \text{Warm Home} + \beta_8 \text{Internet Access} + \beta_9 \text{Family Benefit} + \beta_{10} \text{Reading Recovery} + \beta_{11} \text{SEN} + \beta_{12} \text{Disability} + \beta_{13} \text{Reading Recovery} + \beta_{14} \text{Special Educational Needs} + \beta_{15} \text{Disability} + \beta_{16} \text{ESOL} + \beta_{17} \text{ESOLPacific Peoples} + \beta_{18} \text{Abuse Victim} + \beta_{19} \text{Parent Absent} + \beta_{20} \text{Father Criminal Charge} + \beta_{21} \text{Mother Criminal Charge} + \beta_{22} \text{Mother High School} + \beta_{23} \text{Mother Above High School} + \beta_{24} \text{Mother Bachelor} + \beta_{25} \text{Mother Postgrad} + \beta_{26} \text{Father High School} + \beta_{27} \text{Father Above High School} + \beta_{28} \text{Father Bachelor} + \beta_{29} \text{Father Postgrad} + e \qquad (2)$$

Results and Discussion

Table 6 shows correlations for Logit, Poisson and Cox regressions. All three types of regressions report the same significant correlations with the exception of Logit, for which the ESOL indicator is not significant. We can therefore conclude that essentially the same variables significantly correlated with a higher probability of exclusion are also correlated with being excluded more often, and earlier

in their schooling. Note that as the hazard ratio increases, the hazard of being excluded increases, and the length of survival before being excluded decreases.

Table 6: Regression Results – Full Sample.

	Logit	Poisson	Cox
	dy/dx	dy/dx	Haz. Ratio
Demographic			
Female	-0.079***	-0.248***	0.519***
	(0.003)	(0.011)	(0.015)
Early Start	0.000	-0.009	0.959
	(0.003)	(0.011)	(0.032)
Maori	0.038***	0.071***	1.340***
	(0.004)	(0.012)	(0.045)
Pacific Peoples	0.007	-0.024	1.016
	(0.008)	(0.025)	(0.076)
Asian	-0.083***	-0.277***	0.437***
	(0.012)	(0.040)	(0.053)
Other Ethnicity	-0.006	-0.022	0.868
	(0.014)	(0.046)	(0.112)
SES			
Parent Home Ownership	-0.015***	-0.041***	0.847***
	(0.003)	(0.012)	(0.028)
Warm Home	-0.002	-0.0135	0.993
	(0.004)	(0.013)	(0.040)
Internet Access at Home	-0.030***	-0.068***	0.774***
	(0.004)	(0.011)	(0.028)
Family Benefit Recipient	0.044***	0.159***	1.528***
	(0.004)	(0.014)	(0.056)
Learning Support			
Reading Recovery	0.023***	0.056***	1.234***
	(0.004)	(0.011)	(0.045)
Special Educational Needs	0.032***	0.128***	1.235***
	(0.008)	(0.023)	(0.099)
Self-Reported Disability	-0.001	0.055**	1.076
	(0.007)	(0.023)	(0.073)
English Second Language	-0.017	-0.089**	0.802**
	(0.012)	(0.036)	(0.089)
English Second Language – Pacific Peoples	0.042***	0.118***	1.334**
	(0.015)	(0.046)	(0.190)
Family Climate			
Abuse Victim	0.044***	0.124***	1.403***
	(0.005)	(0.015)	(0.077)
Parent Absent	0.057***	0.148***	1.702***
	(0.006)	(0.018)	(0.106)
Father Criminal Charge	0.051***	0.142***	1.594***
	(0.004)	(0.013)	(0.056)
Mother Criminal Charge	0.043***	0.101***	1.440***
	(0.004)	(0.011)	(0.050)
Parental Education			
Mother: High School Qualification	-0.033***	-0.109***	0.740***
	(0.004)	(0.013)	(0.031)

Mother: Above High School but Sub-Degree	-0.036*** (0.006)	-0.127*** (0.018)	0.694*** (0.038)
Mother: Bachelor Degree	-0.056*** (0.007)	-0.193*** (0.023)	0.576*** (0.037)
Mother: Postgraduate Qualification	-0.043*** (0.010)	-0.124*** (0.039)	0.666*** (0.067)
Father: High School Qualification	-0.031*** (0.005)	-0.081*** (0.017)	0.782*** (0.038)
Father: Above High School but Sub-Degree	-0.038*** (0.006)	-0.100*** (0.020)	0.740*** (0.041)
Father: Bachelor Degree	-0.070*** (0.009)	-0.235*** (0.031)	0.521*** (0.045)
Father: Postgraduate Qualification	-0.076*** (0.013)	-0.241*** (0.045)	0.503*** (0.063)

Concentrating on the logit marginal effects, being female significantly reduces the probability of exclusion, with a 7.9 percentage point difference relative to males. Of the ethnicity variables, relative to Pakeha, Asian students are 8.3 percentage points less likely to be excluded, while Maori are 3.8 percentage points more likely to be excluded. Pacific Peoples however are not significantly more likely to be excluded than Pakeha. When examining the counts in table 4, the rates of exclusion for Asian, Pakeha, Maori and Pacific Peoples are 4%, 9%, 24% and 20% respectively. The variables other than ethnicity contained in this model explain the majority of the difference in exclusion rates between Pakeha and Pacific Peoples. Once the remaining variables in the model are accounted for, Pacific Peoples are not significantly more likely to be excluded than Pakeha, For Maori however, a significant difference still persists.

For the variables in the SES category, home ownership and having internet access in the home are both correlated with lower rates of school exclusion, while being a family benefit recipient (a form of welfare assistance from the Government for low income households with a child) is correlated with higher rates of school exclusion. These findings confirm that children from higher SES households are less likely to be excluded.

Students receiving learning support in the form of reading recovery are more likely to be excluded, as are those students who have been identified through the education system as having special educational needs. Students who are self-report through the nationwide Government conducted census as having a disability are not more likely to be excluded. It is worth noting this data is self-reported, and may relate to physical rather than cognitive disabilities. Receiving ESOL support is not significantly correlated with school exclusion. The interaction variable of Pacific Peoples receiving ESOL support is significantly correlated with a greater risk of exclusion, with a marginal effect of 4 percentage points. Table 4 shows that of the 645 students who were excluded, 423 (or two thirds) of them were receiving ESOL support. This finding intuitively suggests a significant contribution to higher rates of exclusion for Pacific Peoples comes from a smaller subset of Pacific Peoples for whom English is a second language. Pacific Peoples receiving ESOL support are significantly more likely to be excluded than non-Pacific Peoples. This is in contrast to the general ESOL support variable, which is being driven by low rates of exclusion for Asian students. In line with the body of literature cited above that students with additional learning needs are more likely to be excluded (Achilles et al., 2007; (Strand & Lindsay, 2009); Cole (2015); (Morgan et al, 2013); (Apland et al, 2017); students who are receiving reading recovery or have been identified as having special educational needs are significantly more likely to be excluded.

A higher level of parental education is correlated with lower rates of exclusion. This is true for both mother and father. Every level of qualification is correlated with lower exclusion rates compared to a parent having a highest qualification of no school qualification. Broadly speaking, for both mother and father, the higher level of qualification, the greater the marginal effect. The four

family climate variables of having a parent with a criminal conviction, having a parent absent (unnamed on the birth certificate) and a child being a victim of abuse are all correlated with higher rates of exclusion.

As all the variables in the model are binary, a comparison of effect sizes can be intuitively easily understood by comparing the marginal effects. The largest marginal effect for variables that are correlated with a lower rate of exclusion is 8.3 percentage points for students of Asian ethnicity, followed by being of female gender with 7.9 percentage points. The highest parental qualification make up the next largest marginal effects, with SES variables reporting the lowest marginal effect of those variables signifcantly correlation with lower rates of school exclusion. The top four marginal effects for variables correlated with higher rates of school exclusion are the family climate variables, ranging from 5.7 percentage points to 4.3 percentage points. A child who is an abuse victim, and has an absent parent has an increased marginal effect of being excluded of 10 percentage points. A child who is an abuse victim, and for whom both parents have a criminal conviction has an increased marginal effect of being excluded of almost 15 percentage points. The interaction variable of being of Pacific Peoples ethnicity and receiving ESOL support has the fifth largest marginal effect, closely followed by being of Maori ethnicity, having special educational needs, and receiving reading recovery. The significant variables are broadly consistent across the logit, poisson and cox regressions, with a small amount of variation for the learning support variables. Broadly speaking, the variables which are significantly correlated with risk of exclusion are also correlated with the risk or being excluded more than once, and the length of time until a first exclusion.

The results for model (2), using the reduced sample are given in table 7 below. For this analysis, the data was collected either in the child's last year of compulsory school (2018), or from the national census held in 2013. The early start variable was removed from the model, and the dataset was stratified by ethnicity.

Table 7: OLS Regressions – High School Sample (See Appendix One for Logit Results).

	Pakeha	Pacific Peoples - ESOL	Pacific Peoples – Non ESOL	Maori
Demographic				
Female	-0.066*** (0.004)	-0.133*** (0.020)	-0.117*** (0.021)	-0.085*** (0.009)
SES				
Parent Home Ownership	-0.011*** (0.004)	-0.019 (0.026)	-0.032 (0.022)	-0.031*** (0.010)
Warm Home	-0.002 (0.006)	0.015 (0.029)	-0.111*** (0.083)	0.009 (0.013)
Internet Access at Home	-0.035*** (0.009)	-0.027 (0.022)	-0.019 (0.027)	-0.065*** (0.012)
Family Benefit Recipient	0.020*** (0.004)	0.034 (0.025)	0.037 (0.023)	0.033*** (0.011)
Learning Support				
Reading Recovery	0.030*** (0.007)	0.039 (0.027)	0.050 (0.035)	0.046*** (0.013)
Special Educational Needs	0.050*** (0.018)	0.088 (0.069)	0.054 (0.092)	0.042 (0.029)
Self-Reported Disability	0.023 (0.015)	-0.094 (0.054)	0.034 (0.072)	0.001 (0.024)
English Second Language	-0.050** (0.020)	----	----	0.092 (0.049)
Family Climate				

Abuse Victim	0.136*** (0.013)	0.079** (0.031)	0.185*** (0.039)	0.128*** (0.014)
Parent Absent	0.075*** (0.018)	0.088** (0.042)	0.004 (0.043)	0.052*** (0.019)
Father Criminal Charge	0.049*** (0.005)	0.054** (0.021)	0.031 (0.022)	0.043*** (0.010)
Mother Criminal Charge	0.059*** (0.008)	0.070*** (0.025)	0.035 (0.026)	0.072*** (0.011)
Parental Education				
Mother: High School Qualification	0.053*** (0.010)	-0.029 (0.028)	-0.087** (0.035)	0.074*** (0.012)
Mother: Above High School but Sub-Degree	-0.057*** (0.010)	0.016 (0.052)	-0.121*** (0.040)	-0.081*** (0.016)
Mother: Bachelor Degree	-0.069*** (0.010)	-0.038 (0.151)	-0.114*** (0.042)	-0.092*** (0.017)
Mother: Postgraduate Qualification	-0.070*** (0.010)	0.133 (0.029)	-0.101 (0.062)	-0.080*** (0.024)
Father: High School Qualification	-0.036*** (0.008)	-0.065 (0.036)	0.004 (0.034)	-0.039*** (0.015)
Father: Above High School but Sub-Degree	-0.036*** (0.008)	-0.135*** (0.062)	-0.013 (0.037)	-0.054*** (0.016)
Father: Bachelor Degree	-0.047*** (0.009)	-0.068 (0.065)	-0.027 (0.042)	-0.068*** (0.019)
Father: Postgraduate Qualification	-0.043*** (0.009)	-0.259*** (0.027)	0.111 (0.083)	-0.056** (0.026)
Constant	0.193*** (0.014)	0.215*** (0.046)	0.322*** (0.060)	0.274*** (0.024)

Females being less likely to be excluded is consistent across all three ethnic groupings, with Pasific Peoples having the largest effect size, approximately double that of Pakeha. The significant SES drivers of exclusion are identical for Maori and Pakeha. Having parents that own their home, having access to the internet at home, and living in a household that does not receive a family benefit are all correlated with lower rates of school exclusion. Maori do have larger effect sizes. None of the SES variables are significantly correlated with rates of exclusion for Pacific Peoples. The only SES variable correlated with Pacific Peoples is a lower rate of exclusion correlated with living in a warm home, for Pacific Peoples children who are not receiving ESOL support. The effect size is large, at over 11 percentage points. When the significant SES coefficients are summed for each ethnic grouping, they combine for 6.6 percentage points for Pakeha, 12.9 percentage points for Maori, and 11.1 for Pacific Peoples not receiving ESOL support. For Pacific Peoples receiving ESOL support the significant SES variables contributed zero percentage points. This suggests the exclusion drivers for Pacific Peoples receiving ESOL support may be quite different to Pacific Peoples not receiving ESOL support. The significant SES variables increase the probability of exclusion by similar amounts for Maori and Pacific Peoples not receiving ESOL support. For Pakeha students, the risk of exclusion is only increased by approximately half those amounts. SES variables do not significantly increase the risk of exclusion at all for Pacific Peoples receiving ESOL support.

Of the learning support variables, being identified as having special educational needs is significant only for Pakeha, increasing the risk of exclusion by 5%. Receiving ESOL support was also significant for Pakeha, reducing the liklihood of exclusion by 5%. The Pacific Peoples sample is been stratified by whether ESOL support was received or not. The ESOL support variable therefore did not appear in their regressions. It is however included in the earlier regressions, where a significant effect

was established (see table 6). The remaining learning support variables do not have a significant effect on rates of exclusion for either sub-group of Pacific Peoples. For Maori, receiving reading recovery support increases the risk of exclusion by 4.6%.

The family climate variables show a starker snapshot of the drivers of exclusion. Being a victim of abuse (an event that prompted a Family/Oranga Tamariki intervention) is significantly correlated with a higher risk of exclusion for all groups, with substantial effect sizes. For a Pacific Peoples student not receiving ESOL support, being the victim of abuse increases the risk of exclusion by a large 18.5 percentage points. For Pakeha and Maori students, the corresponding figures are 13.6 and 12.8 percentage points respectively. For these three groups, being a victim of abuse is the variable which increases the risk of exclusion by the largest amount. The corresponding figure for Pacific Peoples not receiving ESOL support is 7.9 percentage points. None of the three other family climate variables are significant for Pacific Peoples not receiving ESOL support. Having a parent absent (not listed on the birth certificate), a mother with a criminal charge, and a father with a criminal charge are however significant for Maori, Pakeha and Pacific Peoples receiving ESOL support. The magniture of the effect sizes for all of the ethnic groupings show the impact family climate variables have on the risk of school exclusion. For example, a Pakeha student who is the victim of abuse and has both parents with a criminal charge has an increased risk of exclusion of 24.4 percentage points. The comparable figures for Maori and Pacific Peoples receiving ESOL support are 24.3 and 20.3 percentage points respectively. For Pacific Peoples not receiving ESOL support the increased risk of exclusion is 25.1 percentage points. As mentioned above, the victim of abuse variable is the only significant family climate variable for this group.

The final category of parental education shows the same broad trend for both Pakeha and Maori students. The risk of exclusion drops if a student has a more educated parent. This relationship holds for both mothers and fathers. For Pacific Peoples not receiving ESOL support, the relationship holds only for the mother, while for Pacific Peoples receiving ESOL support, the relationship only holds for the father.

Overall, the variables which significantly impact on risk of exclusion are very similar between Maori and Pakeha. Seventeen significant variables for Maori are also significant for Pakeha. Two additional variables are significant for Pakeha, having special educational needs (positively correlated with exclusion, with a coefficient of 5%) and receiving English as a second language support (negatively correlated with exclusion, with a coefficient of 5%). While the drivers are essentially the same between Pakeha and Maori, the intercepts of the model are not. The intercepts show the probability of being expelled if all explanatory variables are set at zero. For Pakeha, that figure is 19.3%, while the comparable figure for Maori is 27.4%. The intercept is considerably larger for Maori than for Pakeha. In percentage terms, it is almost 50% larger for Maori. The variables in the model are informed by the literature on school exclusion. The variables omitted from the model (and thus not prevalent in the literature) have a larger influence on the risk of exclusion for Maori than for Pakeha. Comparing the intercept between the two groups of Pacific Peoples shows a similarly large difference, 21.5% for Pacific Peoples receiving ESOL support, and 32.2% for Pacific Peoples not receiving ESOL support. When comparing intercepts, the Pakeha model is most similar to the Pacific Peoples receiving ESOL support model (19.3 and 21.5), while the Maori model is more similar to the Pacific Peoples not receiving ESOL support model (27.4 and 32.2).

The data was examined to see if any peer effects have an impact on the probability of exclusion. The school each student attended was categorised according to the ethnic breakdown of the school. Using a contingency table and conducting chi square tests, the only significant peer effect was for Maori students. The higher the percentage of Maori students in a school, the lower the risk of a Maori student being excluded for gross misconduct.

Conclusion

Once variables identified in the literature for SES, gender, learning support, family climate and parental education have been accounted for, there is no significant difference in the rate of exclusion between Pakeha and Pacific Peoples. A significant difference in rates of exclusion for Maori relative to Pakeha persists. When the sample is stratified by ethnicity, noticeable differences emerge. For SES variables, Maori and Pakeha have similar predictors of exclusion. For Pacific Peoples who do not receive ESOL support, living in a warm home is the only significant SES variable. It does have a large coefficient, roughly comparable to the sum of the SES variables for Pakeha and Maori. For Pacific Peoples who do receive ESOL support, no SES variable is significantly correlated with school exclusion. This is despite well-being measures reporting more than twice the number of Pacific Peoples than Pakeha reported not having enough, or only just enough, money to meet everyday needs. (StatsNZ, 2019).

Of the learning support variables, reading recovery is significantly correlated with higher rates of school exclusion, while for Pacific Peoples receiving ESOL support is a significant driver. Both reading recovery and special educational needs are significantly correlated with higher exclusion rates for Pakeha. Maori and Pakeha have the same significant correlations for both family climate variables and parental education variables (negatively correlated), with all of the variables being significant. For Pacific Peoples receiving ESOL support, family climate variables and paternal education (negatively correlated) are correlated with school exclusion. For PacificPeoples not receiving ESOL support, maternal education (negatively correlated) is significant. Being a victim of abuse is the only significant family climate variable, albeit with a large coefficient similar in size to the family climate variables combined for Maori and Pakeha respectively. One purpose of this paper is to establish if the predictors of school exclusion are consistent across the different ethnicities. While the predictors for Maori are very similar to Pakeha the predictors for Pacific People are less so.

A second purpose of this paper is to identify if a difference still exists in rates of exclusion between Pakeha, Pacific Peoples and Maori once a collection of demographic, SEN, SES and family climate variables had been accounted for. While Maori and Pakeha have similar predictors of school exclusion, their respective model intercepts are different. For Pakeha, the percentage of school exclusion when explanatory variables are set to zero is 19.3%, while for Maori it is 27.4%. For Pacific Peoples, those receiving ESOL support have an intercept much closer to Pakeha at 21.5% of school exclusions not explained by the model. Pacific Peoples not receiving ESOL support have an intercept closer to Maori at 32.2% of school exclusions not explained by the model.

Whilst not establishing the cause, this paper shows that while no significant gap in exclusion rates persist for Pacific Peoples relative to Pakeha, it does for Maori. When Pacific People are stratified by whether they receive ESOL support, Pacific People who receive ESOL support are more likely to be excluded than Pakeha. Comparing intercepts reveals the literature informed model is a better predictor of exclusion for Pakeha and Pacific Peoples receiving ESOL support than for Maori and Pacific Peoples not receiving ESOL support.

As outlined earlier, previous literature has hypothesised school curriculum and classrooms to be 'white spaces' due to unintentional discriminatory practices (Hamilton, 2018; Stamou et al, 2014), with the suggestion that higher rates of exclusion for Black students could be down to subconscious stereotyping (Gill et al, 2017). The *Pygmalion Effect* of teachers having lower expectations of Maori students (Blank et al, 2016) may also entend to school exclusion. As outlined in the New Zealand context section above, Maori students report lower rates of belonging at school, and feeling safe at school; while Pacific Peoples report the highest rates. Reported levels of discrimination are very similar for Pacific Peoples (16%) and Pakeha (15%), at much lower rates than Maori (24%). These findings may provide a hint as to why there is no significant difference between rates of exclusion for Pakeha and Pacific Peoples, while exclusion rates for Maori are significantly higher. The predictors of school exclusion for Pacific Peoples are more complex, with language being a confounding factor. This research finds that variables identified in the literature do not explain all the difference in school exclusion rates between Maori and Pacific Peoples not receiving ESOL support relative to Pakeha.

More research is required to examine whether differences in exclusion rates are due to a potential *Pygmalion Effect*.

Disclosure Statement

The authors report there are no competing interests to declare. The requirement for ethics committee approval was waived by the authors' institution as a secondary dataset collected and held by StatsNZ was used.

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Appendix 1

Logit Regressions – High School Sample.

	Pakeha	Pacific Peoples - ESOL	Pacific Peoples – Non ESOL	Maori
Demographic				
Female	-0.069*** (0.004)	-0.132*** (0.020)	-0.120*** (0.021)	-0.085*** (0.009)
SES				
Parent Home Ownership	-0.011*** (0.004)	-0.029 (0.031)	-0.042 (0.027)	-0.037*** (0.011)
Warm Home	-0.005 (0.006)	0.015 (0.027)	-0.090*** (0.078)	0.008 (0.013)
Internet Access at Home	-0.016*** (0.005)	-0.025 (0.021)	-0.014 (0.022)	-0.054*** (0.010)
Family Benefit Recipient	0.037*** (0.005)	0.037 (0.028)	0.047 (0.029)	0.058*** (0.015)
Learning Support				
Reading Recovery	0.020*** (0.005)	0.035 (0.024)	0.037 (0.028)	-0.039*** (0.011)
Special Educational Needs	0.027*** (0.010)	0.066 (0.055)	0.038 (0.061)	0.033 (0.023)
Self-Reported Disability	0.016 (0.009)	-0.101 (0.071)	0.023 (0.055)	0.003 (0.021)
English Second Language	-0.042 (0.004)	----	----	0.073 (0.037)
Family Climate				
Abuse Victim	0.057*** (0.006)	0.066*** (0.025)	0.126*** (0.024)	0.095*** (0.010)
Parent Absent	0.048*** (0.009)	0.086** (0.037)	0.012 (0.038)	0.057*** (0.016)
Father Criminal Charge	0.045*** (0.004)	0.059** (0.022)	0.039 (0.024)	0.055*** (0.012)
Mother Criminal Charge	0.035*** (0.005)	0.064*** (0.022)	0.029 (0.022)	0.065*** (0.010)
Parental Education				
Mother: High School Qualification	-0.029*** (0.007)	-0.036 (0.030)	-0.077*** (0.027)	-0.064*** (0.012)
Mother: Above High School but Sub-Degree	-0.034*** (0.008)	0.016 (0.045)	-0.113*** (0.038)	-0.074*** (0.017)
Mother: Bachelor Degree	-0.056*** (0.012)	-0.052 (0.068)	-0.112** (0.047)	-0.108*** (0.023)
Mother: Postgraduate Qualification	-0.066*** (0.007)	0.147 (0.136)	-0.110 (0.102)	-0.100** (0.047)
Father: High School Qualification	-0.026*** (0.006)	-0.073 (0.039)	-0.004 (0.035)	-0.043*** (0.015)
Father: Above High School but Sub-Degree	-0.023*** (0.010)	-0.201*** (0.070)	-0.028 (0.045)	-0.072*** (0.019)
Father: Bachelor Degree	-0.059*** (0.013)	-0.105 (0.114)	-0.081 (0.081)	-0.120*** (0.037)

| Father: Postgraduate Qualification | -0.053*** (0.006) | Omitted | 0.104 (0.069) | -0.102 (0.062) |