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It's Not That Simple: A Large-scale Explorative Analysis of Indigenous People's Voter Turnout in Taiwan*

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Abstract

This explorative study employs a large-scale analysis of individual turnout data from the 2016 and 2020 presidential and legislative elections, alongside the 2018 local elections and referenda in Taiwan, to advance our understanding of Indigenous voting behaviour in three ways. Firstly, we challenge the conventional wisdom that Indigenous voters exhibit lower turnout rates compared to the non-Indigenous electorate. Secondly, we further compare turnout differences among Highland and Lowland voters. Lastly, we analyse turnout variations across different types of ballots: national and local elections and referendum bills. Contrary to prevailing international and domestic norms, we provide strong empirical evidence that Indigenous voters are diverse and dynamic in their voting behaviours, and this diversity extends not only in comparison to the Han voters but also within the Indigenous population, interacting with the different types of elections.

Keywords: Indigenous people, voting behaviour, election, referendum, Taiwan politics

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Introduction

This paper investigates the differences in political participation of Taiwanese voters according to the electoral rolls upon which they are registered by using large scale individual level data on voter turnout. Specifically, it focuses on electoral rolls categorized into majority Han voters and Indigenous voters, then further divided into Lowland and Highland Indigenous sub-categories across the years 2016, 2018, and 2020. The conventional wisdom is that Indigenous voters consistently exhibit lower electoral participation compared to non-Indigenous constituents. However, this shared understanding lacks extensive exploration, aside from rare exceptions (Davies 2023; Pao and Chou 2015), thus warranting a comprehensive individual-level analysis to either validate or challenge this assumption.

By acknowledging the international pattern of lower electoral turnout among Indigenous populations, we employ Taiwan as a valuable case study to examine the universality of this phenomenon. This research is crucial given its potential to present whether voter participation of Taiwan's diverse Indigenous communities validates international trends. Leveraging individual-level data from national and local elections and referenda in Taiwan, our comprehensive analysis allows for an in-depth examination of voting behaviour to explore nuanced factors influencing Indigenous voter turnout, providing valuable insights into how socio-political contexts shape electoral engagement among Indigenous populations.

The primary objective of this paper is to assess a potential variation in voter turnout trends across different electoral rolls. It not only tests the assumption of lower turnout of Indigenous people compared to non-Indigenous voters but also investigates a (dis)similarity of political participation between Highland and Lowland constituencies. It further examines the patterns of voter turnout across

national and local elections and referenda. By so doing, we challenge the conventional monolithic view of low Indigenous turnout, providing a nuanced analysis that highlights the complexities and heterogeneities within ethnic minority groups' political participation, and shine a light on the potential mechanisms influencing the political participation of ethnic minority voters.

We find that the conventional wisdom of lower Indigenous voter turnout is only partly validated by our individual level data analysis. Over all the election cycles, Indigenous turnout is lower than that of the non-Indigenous majority. However, once data is segregated according to electoral roll, including the separation of Lowland and Highland voters a more intricate relationship is visible. Rather than a single voting block, our observations suggest that voter behaviour of individuals on Lowland and Highland rolls are significantly different. Not only do Highland votes turnout in larger numbers than their Lowland counterparts, but differences between Highland Indigenous and majority Han voters is either negligible or opposite depending on the context of the election. In local elections, Highland voters are observed to have the highest likelihood of voting. Data from the 2018 referendum also supports the importance of context as turnout differed between ballots, again reducing the perceived deviation in voting patterns between Highland and majority voters.

The empirical evidence challenges widely held beliefs that Indigenous peoples are uniformly less likely to vote than majority populations. It also relegates the role of resource based arguments in favor of motivational mechanisms; socially oriented interest groups, ethnic cohesion, and community relations in shaping political participation of Indigenous voters. As one of the largest studies of its kind, this paper highlights the importance of individual level data in eliciting the intricacies in voting behaviour within racially and ethnically diverse societies. While data limitations constrain the scope of this study, the depth of analysis afforded by individual data allows for a reshaping of perceptions surrounding Indigenous political participation.

Literature Review and Three Research Objectives

In this section, we first introduce a general framework of voter behavior within minority Indigenous populations, thereby establishing our first research objective as a large-scale comparative analysis of voter turnout. Subsequently, we posit that the Indigenous electorate in Taiwan is not monolithic but pluralistic and articulate our second research objective as a comparative analysis of voting patterns among Taiwan's Indigenous voters. We then describe the varying contexts of Indigenous constituencies, types of elections and referendums pertaining to voter turnout, establishing our final research objective of examining the impact of different forms of voting on turnout.

The choice to vote, or not, and the role of individual factors affecting voter participation has been analysed from different perspectives. While extensive Political Science literature has observed a diversity of factors, voters' decisions to cast their vote on election day has commonly been projected as a question of individual cost/benefit analysis influenced by socio-economic factors, sociological norms, and pre-existing political ties. The expansive list of potential factors under scrutiny most simply can be reduced to the interaction of an individual's (a) resources and/or (b) motivations. This paper draws on the theoretical frameworks of both rational choice theorists, highlighting the role of resources, and contrasting sociologically oriented Political Science theories and Social Capital Theory which underline the role of motivational factors.

Resource focused arguments championed by rational choice theorists understand turnout as calculable, based on an individual voter's likelihood to maximise individual benefits relative to the costs endured in voting (Downs 1957; Landa et al. 1995; McGregor et al. 2017). The relative resources which act to increase or decrease individual benefits and costs include factors such as class, occupation, education, income, or measurements of social inclusion relating to age,

marital status, cohabitation and employment. Accordingly the decision to vote is defined by Riker and Ordeshook (1968) by the equation:

$$\text{Turnout} = (p)B - C \tag{1}$$

Where p is the probability of an individual voter’s ballot making a difference to the outcome of the election, B is the sum of net benefits attained by the individual voter if a their chosen candidate wins, and C is the total costs endured by the voter for casting their votes. If benefits ((p)B) exceed costs (C) then the voter will turn out (Bowler and Donovan 2013). According to this Downsian logic, a voter may turn out to vote when he/she believes his or her single vote to have the potential to change the election result, although such expectations could rarely be supported by a rational voter.

The second category of factors influencing an individual voter’s likelihood to turnout; motivational explanations relieve this paradox of rational choice voting. Motivational factors are more closely linked to sociological circumstances, such as social and party identification, political interest, media consumption and a sense of duty (Green and Shapiro 1994). Sociologically oriented theories from Political Science literature, as well as sociology’s Social Capital Theory both focus on elements which include the role of group relations and collective emotive factors and the resultant impact that they may have on an individual’s choices regarding political participation. While connected to individual benefits (B) these forces are best applied to Riker and Ordeshook’s (1968) equation by an additional factor; D, the psychological and civic benefits of voting (Aldrich 1993).

$$\text{Turnout} = (p)B - C + D \tag{2}$$

Indigenous Voter Turnout

Resource and motivational aspects have been highly instrumental in attempts to explain the international phenomenon of Indigenous voter turnout consistently falling below national averages across geographical regions, political systems, and social backdrops (Banducci et al. 2004; Greaves et al. 2018; Kao 2014; Lehoucq and Wall 2004; Pao 2013; Pao and Chou 2015; Pao and Davies 2021; Quiroga 2021). On the one hand, lower levels of turnout have been linked to individual resource factors; income, employment, and education levels highlighting economic and socio-demographic differences between individual Indigenous and non-Indigenous voters as significant explanatory factors for the lower levels of Indigenous voter turnout. On the other hand, in opposition to resource based arguments, directed studies have shown that even when demographic variables have been controlled for, lower turnout still persists within Indigenous electorates (Berdahl et al. 2012; Greaves et al. 2018). These studies stress the importance of motivational aspects. Low levels of political participation are seen as a function of collective disenfranchisement, including; reduced levels of political empowerment (Banducci et al. 2004), shared histories of political and social marginalisation; feelings of distrust in colonial political systems (Berdahl et al. 2012), and/or historic differences in political cultures (Lehoucq and Wall 2004).

In the specific case of Taiwan, research on Indigenous turnout is few. Due to limited access to individual data that correlates voter ethnicity with voter resources, targeted research on racially divided voting behavior is limited, existing studies either concentrate on aggregate factors or target motivational factors of voter turnout. Comparative analysis of aggregate data at the township/district level gives a potential starting point to understand how socio-demographic characteristics may differ between the two racial groups. Theories that see levels of absenteeism as a result of resource distribution are generally assumed to have

the greatest explanatory power. These assumptions are supported in Taiwan by the trends of Indigenous townships/districts being shown to fall behind general voters in terms of key indicators such as income and education, according to data collected by the Ministry of the Interior prior to the 2020 elections (see appendix). Regarding motivational aspects, academic contributions remain scarce. Kao (2014) employs a survey on the electoral behaviour of Indigenous elites that finds that social relations and political party orientations are the dominant features; affiliation to the political parties, social groups, and personal connections of relatives and friends are among the top factors cited as affecting voting behaviour. These findings are also supported by Pao and Chou (2015), utilising the "2013 Indigenous Political Behaviours and Attitudes Survey" which presents voter turnout as a result of the mobilisation capacity of political parties and church organisations.

The first goal of this paper is to investigate individual voter turnout using large scale data analysis to validate the conventional but simple wisdom that Indigenous voters are less likely to vote than the non-Indigenous electorate using empirical data. In Taiwan, political participation is racially divided, in legislative elections Indigenous constituents and candidates are only eligible to vote or run for Indigenous seats. While the majority of Taiwan's parliament are elected in geographical constituencies using single member districts, Indigenous voters cast their ballots in a separate electoral competition which uses two historically defined electoral rolls to elect six legislators through a single non-transferable voting in multi-member districts. As is this case with many studies centred on minority groups, substantive advances in the study of Indigenous voting behaviour in Taiwan is limited due to the lack of comprehensive data. Due to the rights of anonymity for voters, and the limitations of ecological inference, reliance on aggregate voter data fails to give significantly reliable results. Individual level data is rare, and the limited studies which are available often fall short of obtaining the required number of observations and variations required to provide sub-

stantive and robust findings. The most substantial studies on electoral behaviour; Taiwan's Election and Democratization Study (TEDS) and the Taiwan Social Change Survey (TSCS), show little interest in Indigenous issues, or collecting a significant number of observations from Indigenous respondents. The most significant survey to focus on Indigenous political attitudes the "2013 Indigenous Political Behaviours and Attitudes Survey" is unfortunately limited to only Indigenous respondents, making cross ethnic analysis unfeasible, only has a small number of observations, and only provides analysis on two national election cycles.

Utilising a large-scale report of micro-level information on voter turnout provided by the Central Election Commission (CEC), allows for the analysis of Indigenous voter participation across two presidential and legislative elections, as well as local elections and nationwide referendums. Including data on a large cross-section of Taiwan's electorate, including both Indigenous and non-Indigenous voters, electoral data from the 2016 and 2020 presidential and legislative elections and 2020 local elections and referendums, as well as additional information of voter age, gender, and residential registration area allow for a substantial contribution to the field. While individual level socio-demographic indicators are not included in the dataset used, this study attempts to test whether general theories sufficiently explain voter behavior.

Indigenous Plurality

The shortcomings of existing research findings are that results are limited to the binary divisions between Indigenous and majority voters, while research on the internal variation of political participation within Indigenous populations allows for a more refined understanding of factors influential to electoral turnout. In Berdahl et al. (2012) research in Canada, for example, ethnic status and

location of voters are shown to have a strong effect on voter turnout, with Métis groups and off-reserve First Nations shown to have higher turnout rates than voters who live on delegated First Nation reserves. In Bolivia, Hirseland and Strijbis (2019) show intra-Indigenous identity and ethnicity to influence voter practice, due to regional political entrenchment. Similarly, geographical and ethnic divisions are also evident in Taiwan’s Indigenous voters.

The second aim of the paper is to test for differences in electoral turn-out between voters in Highland and Lowland constituencies. The roots to the modern political distinction date back to the classification of non-Han frontier peoples as “raw” (sheng) or “cooked” (shu). The distinction was a fluid and shifting boundary, not based on ethnic designations but applied to peoples and lands alike under the context of the colonial expansion of the Qing dynasty. With the beginnings of centralised administration on the island, finer distinctions of the singular group known as ‘the eastern savage’ (dongfan) on the island were constructed, distinguishing those who had succumbed to Qing linguistic and cultural assimilation, submitted to political control, and paid taxes, from those groups that were potentially hostile or likely to rebel against Han encroachment (Shepherd 1993).

The administrative differentiation between general and Indigenous constituencies is implemented at the third tier geographical area of township or district level. Of Taiwan‘s 365 designated township/district areas 55 are given Indigenous status, 35 of which are Highland and 25 Lowland. While the electoral participation of Indigenous voters as either Highland or Lowland constituents is fixed and assigned by ancestral lineage, voter registration can change, which means, due to over 100 years of migration, the two Indigenous constituencies both include voters from all parts of Taiwan. This electoral design of Taiwan’s Indigenous constituencies into two geographically overlapping Mountain and Lowland constituencies has attracted relatively large interest from scholars (Kao 2014; Kuan et al. 2015), however, to date little research has focused on the sustained differences in voter turnout between the areas. The current effect of the

divide is described as arbitrary, based on historical, colonial era divisions between residents living in or close to the mountains with those who lived slightly further from the mountains.

Paradoxically, while the Highland-Lowland distinction is criticized as arbitrary aggregated data has shown sustained differences between turnout in the two Indigenous electoral rolls. Turnout for the elections of legislators in the Lowland Indigenous constituency was lower than 45% in both the 2004 and 2008 elections, while the rates for voters in the mountain constituency surpassed 50% (Pao and Davies 2021). To date there has been no academic attempt to define the consistent differences in political participation between the constituencies. Focusing on resources based factors, internal variation in income levels within the Indigenous population is pronounced with Highland townships/districts showing nearly double the level of low income households than Lowland areas (Ministry of Interior 2019). While educational attainment for both constituencies marginally falls behind the general population, no significant differences are observable between the Indigenous constituencies. As such, limited resources could be seen as acting to decrease turnout in Indigenous electoral rolls, with the effect more visible in Highland voters than Lowland voters.

Motivational factors are less easily invoked through reliance on government statistics, however, by seeing motivational factors as being associated with civic duty and sociological linkages, one relevant indicator is the concentration of Indigenous peoples to a given area. Lending from Social Capital Theory, i Coma and Nai's (2017) discussion of the effects of ethnic diversity on electoral turnout suggest that areas of higher ethnic concentrations of minority groups lead to increased bonding social capital and in turn increased mobilisation within those communities. As such, in areas populated mainly or exclusively by minority residents, political organisations, voter mobilization and turnout would be expected to be higher. In this respect, voters in Highland areas, used as an indicator for enrollment within the Highland constituency would be expected to vote at higher

levels than their Lowland counterparts as the concentration of Indigenous peoples to townships/districts designated as Highland is much higher than Lowland areas according to statistics from the Council of Indigenous Peoples (2020).

Different Scales of elections

Finally, data will be used to test for difference in electoral turnout at different types of ballots (1) national legislative elections, (2) local County and City Council elections, (3) Township and City Representative elections, and (4) referendum bills. Observed variation at the level of electoral participation is another factor which has been shown to be highly significant in the deviation in participation in the electoral system. Reif and Schmitt (1980) have described a fundamental divide between national and local elections, describing the former as 'first-order' elections, while the latter are categorised along-side by-elections, regional elections, and referendums as 'second-order' competitions. Accordingly, local elections and referendums are expected to be treated with less rigour by the electorate displaying a lower turnout and larger variance in the types of parties and candidates which they are willing to cast their votes for.

In the specific case of Indigenous voting, these predictions are challenged. Through the case of Mapuche voters in Chile, Quiroga (2021) is able to show that Indigenous voters were more active in local elections than in national elections. From a comparison of national, and sub-national municipality elections, Indigenous voters are shown to. It is observed that although Mapuche voters were less likely to turnout in large numbers for national elections, there was no discernable difference from the majority population for local elections. Quiroga concludes that analysis of voter turnout in national elections that concludes that Indigenous people are structurally marginalized from political systems is misleading, but rather Indigenous voters feel more integrated in the local political system than the national one.

This contradictory trend has also been identified in Taiwan as a whole, with voter turn-out generally very high in municipal council elections, slightly lower in mid-level municipal executive elections, and lower still in national elections (Rigger 2002). From a theoretical perspective, the contradictory behaviour of Indigenous voters in Chile and general voters in Taiwan, are explained by the comparative weight of socio-demographic characteristics in subnational compared to national elections. Both aggregate factors, including smaller population sizes, population concentration, and homogeneity are suggested to matter more at the subnational electoral level, while an individual's attachment to the local community is also expected to increase the personal connections between voters and candidates (Cancela and Geys 2016). Following Aldrich (1993) and Riker and Ordeshook's (1968) equation, in local elections the costs (C) of turning out decreases, while increasing social pressure to turn out increases the potential costs of abstaining (Uhlaner 1989). Furthermore, the sense of duty is likely driven up by a voter's increased level of interest and engagement in politics at a local level (Bowler and Donovan 2013). For referendums, by taking into consideration the role of social and political elite, such as unions, business groupings and religious organisations in determining the stances of voters referendum outcomes, the cost/benefit of analysis of voters are also affected (Szczerbiak and Taggart 2013). Following such a rationale, the increased sense of duty held by constituents at a local level brings a new layer of importance to elections which would traditionally be described as 'second order'. To date, except for brief mention in political blogs which highlights the phenomenon of Indigenous voters coming-out in larger numbers for local elections than national elections, no substantive research has been made on voter turnout across local elections or referendums in Indigenous constituencies.

Research design

A large-scale analysis of Indigenous people's voter turnout is feasible by leveraging publicly available, micro-level information of the Central Election Commission (CEC). This anonymized sample of individual Taiwan voters was constructed by Juang and Hung (2016; 2020a; 2020b), who accessed the official voting records under the CEC's permission for the 2016 and 2020 presidential and legislative elections as well as the 2018 local elections and referendum. In their initial data structure, the information of turnout, age, gender, and residential registration area is included. This data of actual voting records offers numerous opportunities for electoral studies, with some excellent research outputs (Huang 2021), which would otherwise rely on surveys or other secondary sources. However, to our best knowledge, no research has been conducted on the voting patterns of the Indigenous population, except for the original data collectors' reports.

For our research purpose, we further enrich the raw data by adding a set of variables of Indigenous status. We are able to code this additional set of information, as the CEC data details voter turnout for every ballot encountered by each Taiwan citizen on the same row in the excel file. Each row in the data represents an individual voter. All potential ballots are recorded as the columns, including whether the individual is eligible to partake in the ballot and if they chose to cast their vote or not. Ballots that the individual is not eligible to vote in are coded as NA. In all the raw data sets, there are specific ballots that are only assigned to Indigenous voters. Based on this information, we identify whether this citizen is Indigenous and whether they are registered on the Highland or Lowland electoral roll.

For the 2016 and the 2020 presidential and legislative elections, electoral status is identifiable by eligibility for the corresponding majority, Lowland, or Highland ballots. Similarly, in the 2018 local elections and referenda, we rely on

the four types of ballots: the County and City Council Elections (Lowland and Highland) and the Township and City Representative Elections (Lowland and Highland).

Table 1. The Distribution of Voters by Their Identity in the Data Sets

Year	Total	Majority	Indigenous	Lowland	Highland
2016	201,257	192,000	9,257	4,953	4,304
	(100%)	(95.4%)	(4.6%)	(2.5%)	(2.1%)
2018	267,284	261,056	6,228	3,826	2,402
	(100%)	(97.7%)	(2.3%)	(1.4%)	(0.9%)
2020	137,076	133,282	3,794	2,001	1,793
	(100%)	(97.2%)	(2.8%)	(1.5%)	(1.3%)

Table 1 provides a breakdown of voter composition with a focus on Indigenous voters in the 2016, 2018, and 2020 data sets. Cumulatively, the datasets include approximately 20,000 voting records from the Indigenous population, which is the largest sample size in Indigenous studies in Taiwan, to our best knowledge. The diversity of ballots recorded in the database is another crucial asset for our research. At the national level, the data encapsulates the presidential and party-list elections in 2016 and 2020, and it also covers the nation-wide referendum bills in 2018. On a more local scale, the data includes the cases for the County Magistrates and City Mayors Elections, the Township Mayoral Elections, and the Village Chiefs Elections, all of which took place in 2018. This eclectic collection of voting behaviour allows for a multi-faceted examination across different levels of governance and time.

In total, we have 17 binary variables, including the presidential (P16) and party-list elections (L16) in 2016, the 10 referendum bills (V7, V8, V9, V10, V11, V12, V13, V14, V15, and V16), the County Magistrates and City Mayors Elections (F18), the Township Mayoral Elections (I18), and the Village Chiefs Elec-

tions (J18) in 2018, and for the presidential (P20) and party-list elections (L20) in 2020. Each outcome variable is coded as 1 if the voter claimed his or her ballot and 0 if not.

The primary explanatory variable is binary in nature, distinguishing between individuals who are of Indigenous descent and those who are not. To further differentiate within these groups, two additional dummy variables have been prepared: one to indicate whether the voters are identified as Lowland voters and another to denote those classified as Highland voters. For all tests, the baseline of these two dummy variables is non-Indigenous Taiwan voters. Two control variables are also included: Age as a continuous variable and Gender as a binary variable (Female: 1 and Male: 0). In terms of regression strategy, we rely on a fixed-effect logit model, given that each voter is placed at the city/county level.

Data Analysis

1. The 2016 Election

Figure 1 presents the distribution of voter turnout in the 2016 presidential election, differentiated by whether voters were Indigenous or not, as well as further categorized into those who are in the Lowland Districts and their counterparts in the Highland Districts, from our data. We focus on the presidential election, as the turnout result is basically identical between the presidential and party list ballots. Figure 1 reveals that non-Indigenous voters (63.5%) tend to participate more in the election compared to the Indigenous population as a whole (55.2%). However, when we decompose the Indigenous group into Lowland and Highland communities, a more nuanced pattern emerges. The lower overall turnout rate for the group appears as a whole to be primarily driven by voters on the Lowland electoral roll (50.6%). Highland voters, on the other hand, display a voter turnout rate that is nearly on par with their non-Indigenous counterparts (60.4%).

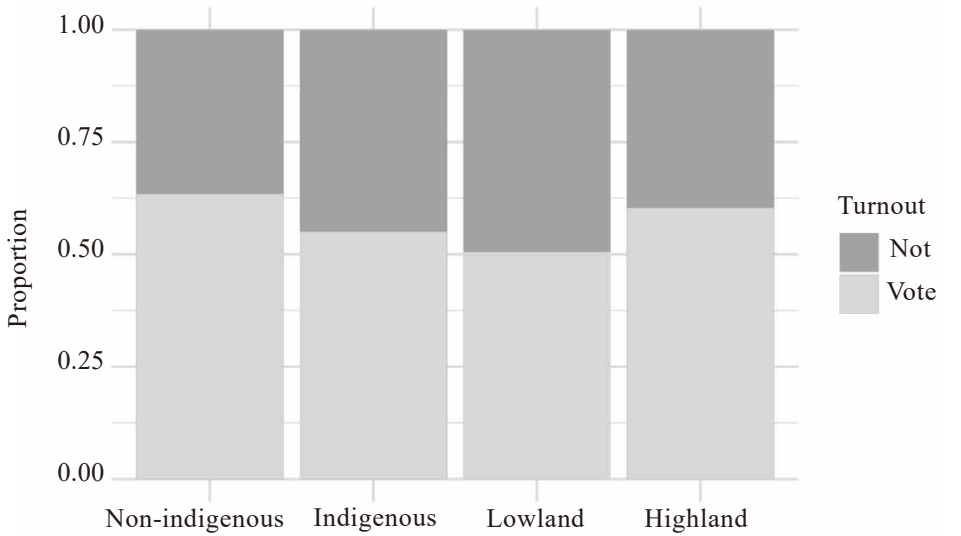

Figure 1. Voter Turnout in the 2016 Presidential Election

Table 2 provides further evidence of the above variation of Indigenous voting behaviour. The estimated coefficient of the Indigenous voter variable is negative and statistically significant, indicating that Indigenous voters are less likely to vote, after controlling age, gender, and their geographical location. When we extend the analysis to compare voter turnout among different groups, including Non-Indigenous voters and Indigenous voters from Lowland and Highland regions, it shows that lowland Indigenous voters are less likely to vote than non-Indigenous voters, whereas Highland Indigenous voters' turnout is similar to the Non-Indigenous baseline.

Figure 2 displays the estimated coefficients along with their confidence intervals, highlighting the differences in voting behavior between these two subgroups with a baseline of the Han voters. This coefficient plot makes it clear that the Highland voters are more likely to vote than their counterpart of Lowland voters.

Table 2. Logistic Regression Analysis of the 2016 Presidential Election

	(1)	(2)
Indigenous	-0.124***	
	(0.025)	
Lowland		-0.282***
		(0.034)
Highland		0.031
		(0.034)
Age	0.019***	0.019***
	(0.0003)	(0.0003)
Female	0.077***	0.077***
	(0.009)	(0.009)
Constant	-0.399***	-0.419***
	(0.031)	(0.031)
Observations	201,183	201,183
Log Likelihood	-127,647.800	-127,622.800
Akaike Inf. Crit.	255,345.600	255,297.600

Note: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

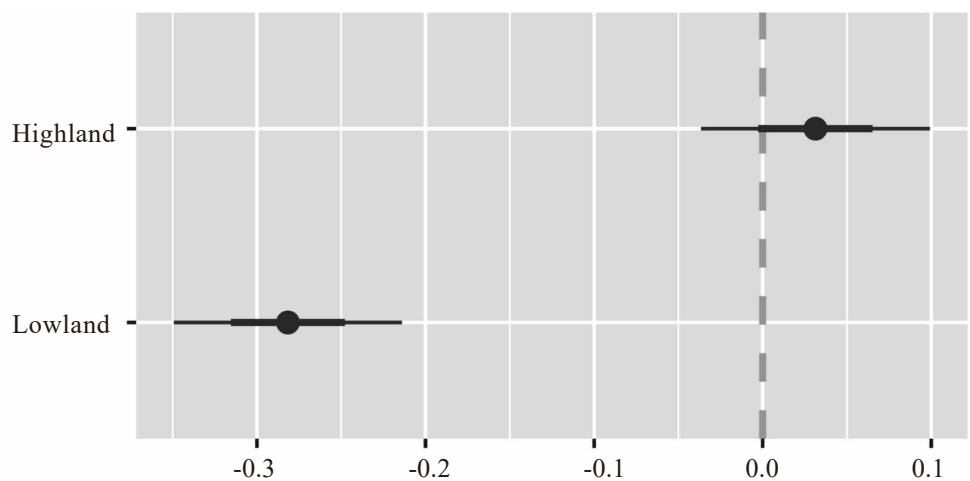

Figure 2. Coefficient Plot for the 2016 Election (Lowland and Highland only)

2. The 2018 Local Election and Referendum

The 2018 data set is unique in that it encompasses the ten referendum bills and the three local electoral votes, while the other two data sets only include the presidential and party-list ballots cast by both non-Indigenous and Indigenous voters in Taiwan. It is important to note that these 13 separate ballots yielded differing turnout rates.

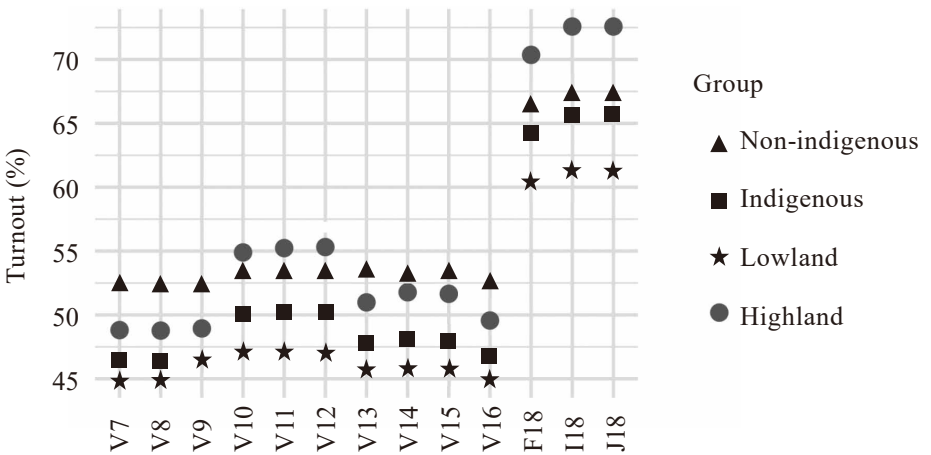

Figure 3. Voter Turnout in the 2018 Local Election and Referendum

Figure 3 presents a comprehensive overview of the voter turnout rates by group (non-Indigenous, Indigenous, Lowland, and Highland) for each of the different ballots. First of all, non-Indigenous voters consistently exhibit higher turnout rates than Indigenous voters, ranging from approximately 52% to 53% in referendum bills and 66% to 67% in local elections. Indigenous voters follow, with more variability between 46% and 50% in referendum bills and 64% to 65% in local elections. The rates for Indigenous voters are further dissected into Lowland and Highland communities, revealing that Highland communities typically participate more (between 48.77% and 55.31%) than their counterparts in the Lowland communities (between 44.90% and 47.10%).

In an interesting deviation from the overall trend observed, Highland Indigenous voters demonstrated higher turnout rates than non-Indigenous voters for the referendum propositions v10, v11, and v12, as well as in the three local elections (f18, i18, and j18). This finding suggests that specific electoral contexts can prompt increased political engagement among Highland Indigenous voters, surpassing the participation rates of non-Indigenous voters.

Tables 3 to 5 report the results of a series of logistic regression models on each ballot in referendum and local election. Table 3 presents the results of analysis for each referendum bill, with the main independent variable of being an Indigenous voter, with non-Indigenous Taiwan voters serving as the reference category. In line with the patterns observed in the above Figure 3, these models consistently show a negative and statistically significant association between Indigenous status and voting across all referendum bills.

Table 4 presents the results of logistic regression models on each ballot, with the two main explanatory variables of Lowland Indigenous and Highland Indigenous voters, compared to non-Indigenous voters. The estimated coefficients for Lowland Indigenous voters are consistently negative and statistically significant across all the ballots, suggesting that they are less likely to vote than non-Indigenous voters in all circumstances. Highland Indigenous voters, on the other hand, show more variation. In most of the referendum bills, similarly with the voters on the Lowlands electoral roll, they are less likely to vote than their non-Indigenous counterparts. In the case of referendum ballots v10, v11, and v12, which are associated with socially conservative agendas, there is no significant difference in voting behavior of Highland voters from their non-Indigenous counterparts.

Table 5 presents the logistic regression results for the 2018 local election. Initially, no distinctive difference is observed between Indigenous and non-Indigenous voters. But when we disaggregate Indigenous voters into Lowland and Highland sub-groups, a notable distinction emerges. Highland Indigenous voters

Table 3. Logistic Regression Analysis of the 2018 Referendum Bills

	v7	v8	v9	v10	v11	v12	v13	v14	v15	v16
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Indigenous	-0.306***	-0.307***	-0.304***	-0.192***	-0.185***	-0.186***	-0.289***	-0.264***	-0.266***	-0.300***
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Age	-0.002***	-0.002***	-0.002***	-0.001***	-0.001***	-0.001***	-0.001***	-0.002***	-0.002***	-0.002***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Female	0.116***	0.115***	0.116***	0.127***	0.128***	0.127***	0.110***	0.127***	0.127***	0.116***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Constant	0.303***	0.302***	0.303***	0.256***	0.257***	0.258***	0.274***	0.296***	0.294***	0.298***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Observations	248,815	248,815	248,815	248,815	248,815	248,815	248,815	248,815	248,815	248,815
Log Likelihood	-170,453.500	-170,458.500	-170,441.300	-170,009.700	-170,017.400	-170,022.200	-169,999.200	-170,150.000	-170,182.800	-170,371.700
Akaike Inf. Crit.	340,956.900	340,967.100	340,932.700	340,069.400	340,084.900	340,094.300	340,048.400	340,349.900	340,415.700	340,793.500

Note: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Table 4. Logistic Regression Analysis of the 2018 Referendum Bills with Intra-Indigenous Variations

	v7	v8	v9	v10	v11	v12	v13	v14	v15	v16
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lowland	-0.356***	-0.358***	-0.357***	-0.303***	-0.301***	-0.304***	-0.360***	-0.347***	-0.348***	-0.361***
	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)
Highland	-0.230***	-0.230***	-0.224***	-0.021	-0.008	-0.004	-0.180***	-0.138***	-0.143***	-0.207***
	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)
Age	-0.002***	-0.002***	-0.002***	-0.001***	-0.001***	-0.001***	-0.001***	-0.002***	-0.002***	-0.002***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Female	0.115***	0.115***	0.116***	0.127***	0.128***	0.126***	0.109***	0.127***	0.127***	0.116***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Constant	0.303***	0.302***	0.303***	0.255***	0.256***	0.257***	0.273***	0.295***	0.293***	0.297***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Observations	248,815	248,815	248,815	248,815	248,815	248,815	248,815	248,815	248,815	248,815
Log Likelihood	-170,450.500	-170,455.600	-170,438.100	-169,995.400	-170,001.800	-170,005.800	-169,993.300	-170,142.100	-170,175.200	-170,367.400
Akaike Inf. Crit.	340,953.100	340,963.200	340,928.300	340,042.700	340,055.700	340,063.600	340,038.600	340,336.200	340,402.400	340,786.900

Note: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Source:"2018 Referendum". *Central Election Commission*. 24 Nov 2018.

display higher likelihood of voting even than non-Indigenous voters, as indicated by the positive and statistically significant coefficients. Meanwhile, Lowland Indigenous voters continue to exhibit lower voter turnout compared to both non-Indigenous and Highland Indigenous voters.

Figure 4 visualizes the results of regression analysis on 13 referendum bills and local elections focusing on the estimated coefficients for the Lowland and Highland variables from Table 4 and Table 5. It provides a useful comparison of voting behaviors between Highland and Lowland voters, as in Figure 2. The three ballots for the local election present a clear difference between the Lowland and Highland voters. In addition, as indicated by the non-overlapping confidence intervals, in most of the referendum ballots (v10 to v16), Highland voters show a tendency to vote more than their Lowland counterparts.

Table 5. Logistic Regression Analysis of the 2018 Local Elections

	Dependent variable:					
	City		Town		Village	
	(1)	(2)	(3)	(4)	(5)	(6)
Indigenous	-0.041		0.010		-0.042	
	(0.029)		(0.032)		(0.029)	
Lowland		-0.215***		-0.203***		-0.220***
		(0.036)		(0.040)		(0.036)
Highland		0.240***		0.347***		0.248***
		(0.046)		(0.051)		(0.047)
Age	0.017***	0.017***	0.019***	0.019***	0.017***	0.017***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Female	0.082***	0.081***	0.062***	0.061***	0.083***	0.082***
	(0.009)	(0.009)	(0.012)	(0.012)	(0.009)	(0.009)
Constant	0.021	0.019	-0.040	-0.043	0.024	0.022
	(0.028)	(0.028)	(0.032)	(0.032)	(0.028)	(0.028)
Observations	248,864	248,864	136,674	136,674	247,129	247,129
Log Likelihood	-154,451.100	-154,418.000	-83,284.330	-83,243.790	-153,259.700	-153,225.000
Akaike Inf. Crit.	308,952.200	308,888.000	166,600.700	166,521.600	306,569.400	306,502.000

Note: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

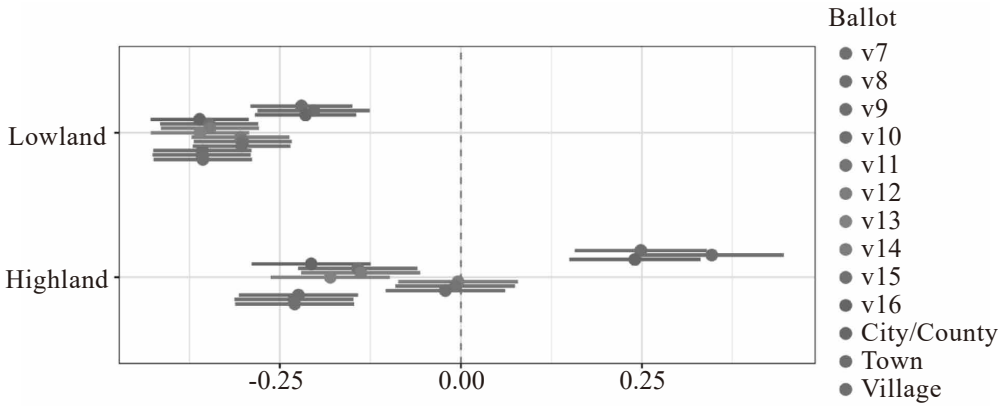

Figure 4. Coefficient Plot for the 2018 Local Election and Referendum (Lowland and Highland only)

There is also a noticeable variation across the types of ballots for the Lowland voters. The turnout rates for local election ballots are higher than those for referendum bills among Lowland voters. Specifically, the referendum bills (v7, v8, and v9) show lower turnout compared to v10, v11, and v12. For Highland voters, in addition to the distinct difference in voting behaviour between local elections and referendum bills, Figure 4 shows that within the referendum bills, v7, v8, and v9 are clearly different from v10, v11, and v12.

3. The 2020 Election

Figure 5 illustrates the voter turnout distribution for the 2020 election, delineated by Indigenous status and further segmented by the Lowland Districts versus Highland Districts. Like the earlier 2016 case, we only include the presidential election's case, as its turnout patterns are closely mirrored with the one of the party list ballots. The turnout rate among non-Indigenous voters is observed to be higher at 72.3%, compared to 63.6% for the overall Indigenous electorate. A deeper examination into the sub-groups within the Indigenous community reveals an interesting dynamic: the lower average turnout among Indigenous

voters can largely be attributed to the Lowland District voters, who registered a turnout rate of 59%. In stark contrast, Highland District voters, at a turnout rate of 68.8%, almost match their non-Indigenous counterparts. This result is mainly identical with the 2016 analysis, while the overall turnout rates are higher in 2020 than the case of 2016, which means the excessive mobilisation of the last presidential and legislative election does not make a distinct effect on voter turnout among different groups of Taiwan voters.

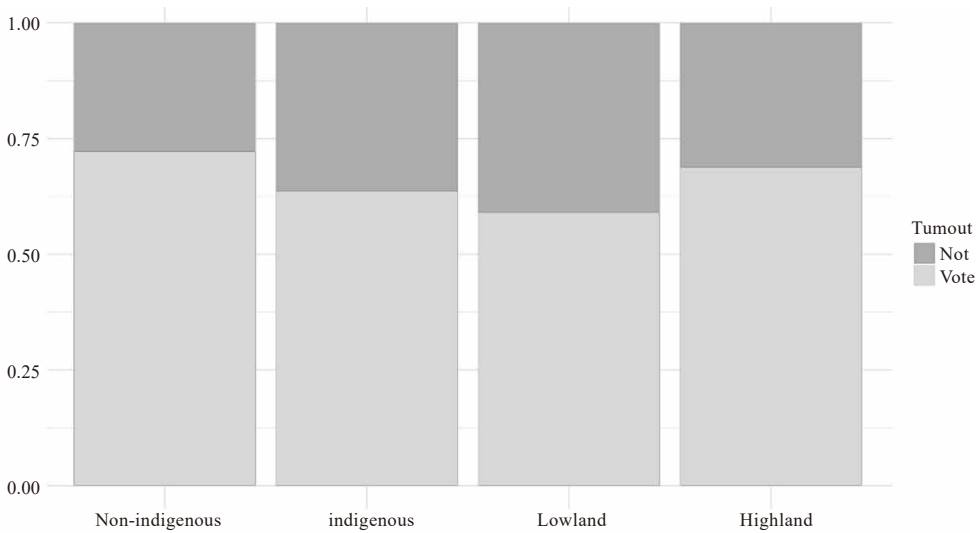

Figure 5. Voter Turnout in the 2020 Presidential Election

Table 6 confirms the above description. In line with our findings from the 2016 elections, these results consistently demonstrate a lower propensity for voting among Indigenous populations. It also presents that voters on the Lowlands electoral roll are consistently less likely to vote than non-Indigenous voters. In contrast, the Highland Indigenous voters display a slightly different pattern. Similar with the Lowland Indigenous voters, they are also less likely to vote than non-Indigenous voters, which contrasts with the 2020 case where Highland voters were more likely to vote similarly to the majority Han voters. However,

given the value of the estimated coefficient, the effect size is smaller than that of the Lowland Indigenous voters.

Table 6. Logistic Regression Analysis of the 2020 Presidential Election

	(1)	(2)
Indigenous	-0.311***	
	(0.038)	
Lowland		-0.473**
		(0.050)
Highland		-0.134***
		(0.053)
Age	0.008***	0.008***
	(0.0004)	(0.0004)
Female	0.173***	0.172***
	(0.012)	(0.012)
Constant	0.406***	0.403***
	(0.038)	(0.038)
Observations	137,043	137,043
Log Likelihood	-78,786.340	-78,774.600
Akaike Inf. Crit.	157,620.700	157,599.200

Note: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Finally, Figure 6 visualizes the estimated coefficients and their confidence intervals, highlighting the differences in voting behaviour between Lowland and Highland voters, using Han voters as the baseline in the 2020 election. This coefficient plot clearly shows that Highland voters are more likely to vote compared to their Lowland counterparts, like the 2016 case.

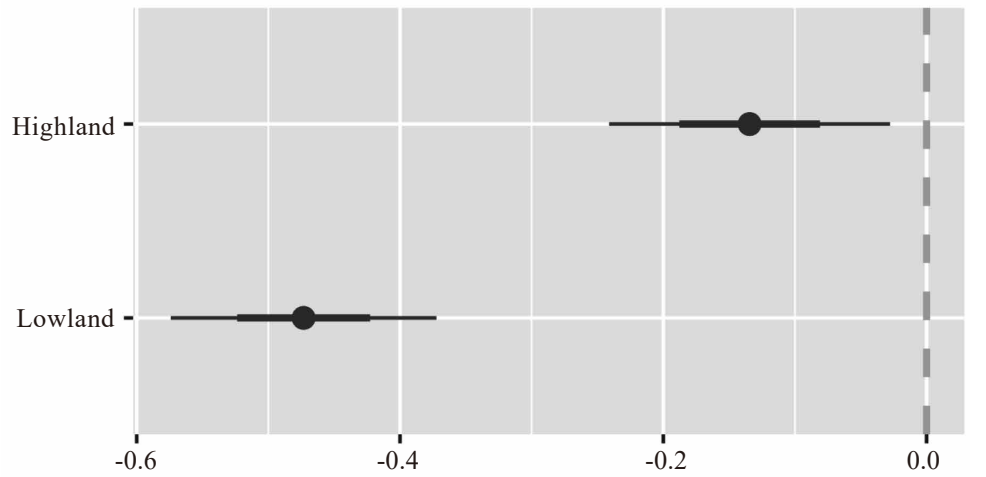

Figure 6. Coefficient Plot for the 2020 Election (Lowland and Highland only)

Discussion

Through analysis of individual voter data across three election cycles in Taiwan, this paper has attempted to test the validity of long standing assumptions regarding the link between racialised social groups and political participation, and elicit a deeper understanding of the factors at play. Drawing from established Political Science theory and empirical studies of Indigenous voter turnout in Taiwan and internationally, this paper specified three central aims; (1) to test for a sustained and significant difference in turnout between Indigenous and non-Indigenous constituents, (2) to test for variation in voter behaviour between separate Indigenous electoral rolls, and (3) to test for the effect of election type on turnout. The above results provide strong supporting evidence for conclusions to be made for each of these aims.

Low-Indigenous Turnout

Both descriptive statistics and regression models all confirm the general assumption that turnout is lower for Indigenous voters. When applying a binary distinction between Indigenous and non-Indigenous voters, at all levels of analysis, confirmed, statistically significant results all show Indigenous status as a predictor of a lower likelihood to turnout than their non-Indigenous counterparts. The greatest divergence is found at the national level, including; legislative and presidential elections, as well as participation in national referendums. For local elections, including; county, township, and village level elections, aggregated statistical data shows the trends to be consistent with national level elections, however, analysis taking demographic information into account, was unable to find statistically significant differences between Indigenous and non-Indigenous voters. The effect of election type will be discussed in greater depth below.

While the continued limitations of access to substantive individual level data prevents us from controlling for important socio-demographic variables, in terms of observations this study is the largest of its kind in Taiwan. It successfully validates the phenomenon of reduced electoral turnout for Indigenous voters, supporting the established belief that Indigenous peoples are less inclined to participate in elections than majority populations. In line with empirical research conducted internationally, these results provide greater credibility to the assumption that race and ethnicity are salient factors in voting behaviour. Although it is not yet possible to define the specific explanatory factors or mechanisms underlying the phenomenon, the results provide substantive support that elections in Taiwan are inline with international trends more often than not tied to socio-demographic factors and political disempowerment decreasing both access to key resources and the motivational pull to participate.

Intra-Indigenous Variation

Results of tests for variance of electoral behaviour within Indigenous groups, going beyond the binary, racial divisions, on the other hand, providing grounds for reinterpretation of commonly held beliefs. When taking into account established, although often contested, divisions in Indigenous status, the question of turnout is not easily explained as being based on simple racial divisions. Across all electoral ballots, voters on the Lowland Indigenous electoral roll are shown to be less likely to turnout than non-Indigenous voters, however, the difference between these Lowland voters and voters on the Highland Indigenous electoral roll is both substantial and significant. The failure for tests to validate a significant difference between the likelihood of Highland voters and non-Indigenous voters in the 2016 national elections or three out of ten referendum ballots, and evidence of Highland voters actually being more likely to vote than non-Indigenous in the 2018 local elections, all act to complicate interpretations.

These results put into question the assumption that low turnout can be directly related to Indigenous status. By showing that the difference in likelihood to vote between Highland and Lowland voters is consistently evident and that no such difference is observable between Highland voters and non-Indigenous voters, the explanation of a racially based differentiation in political participation is challenged. The nature of the differences, as identifiable by the assigned electoral constituency, also challenges common criticisms of the Highland/Lowland divide as arbitrary and outdated, built on historical differences in attitudes and proximity to the settler state, with little relevance to the cleavages found in modern Taiwan. Rather, the results highlight that certain factors exist that divide the electoral behaviour of Lowland and Highland electoral rolls, and may shed light on the phenomenon of racially differentiated voting behaviour.

What these factors are, whether they are universal or specific to the case of Taiwan, whether they emanate from the individual, the social group, candidates, parties, or the political system itself, are currently unaccounted for, however, the sustained and significant nature of the divergence presented through this study poses fertile ground for future research. Certain conjectures, however, can be made. Direct correlation of access to resources as an indicator to voter participation is not upheld when comparing the results from this study with the socio-demographic backgrounds of the constituencies. While areas classified as Highland districts/townships are shown to have higher rates of low-income households, they have consistently shown higher turnout rates than low-land areas. These results are, however, highly speculative and require extended individual level research including voter constituencies, geographies, and socio-economic indicators to provide substantive support. The sustained internal differences in turnout also supports a Social Capital stance, with voters from the more ethnically cohesive Highland areas showing higher turnout rates than voters in the Lowlands which are much more diverse. Whether the strength of social ties, local institutions, and shared histories of Highland Indigenous areas supports political mobilisation in Taiwan provides a better explanation to voter participation than racial or socio-economic factors becomes a salient topic for further analysis.

Electoral Levels

The results of regression analysis across electoral levels show that trends in turnout for national legislative elections, local representatives, and referendums differ. While again differences are most evident in the behaviour of voters on the Highland electoral roll, evidence suggests that on large the deficiency in Indigenous turnout is mostly restricted to national level elections and is nullified when local elections are taken into account. In line with Quiroga's (2021) assessment of Indigenous voters in Chile, the phenomenon of low Indigenous turnout is best

described as related to national elections rather than the political process in general. Indigenous voters' decision to cast a vote or not is highly dependent on the scope of the electoral platform. At the local level, including: County Magistrates and City Mayors Elections, Township mayoral Elections, and Village Chiefs elections no substantial differences are found between voters on the non-Indigenous electoral roll and Indigenous voters. The finding that Highland voters were actually found to be more likely to vote in local elections than those on the non-Indigenous electoral roll, suggests that claims of racial or ethnic differences in political participation are natural, unavoidable and/or enshrined in demographic circumstances or tied to a social minority status are misleading. The increased turnout for local elections could be an indicator of the importance of local issues and representation for these communities, that elections which are deemed as 'second order' to some may be much more important to others. Although only tentatively, the results seem to suggest that the decision to vote is much more associated with motivation; personal relationships, inclusion, and an individual's own interpretation of their sense of duty (Cancela and Geys 2016).

Similar trends can be found for participation in national referendums. When observing aggregate turnout statistics for the referendum as a whole, the clearcut division between non-Indigenous and Indigenous voters is evident. However, by operationalising the electoral roll to observe internal variations between Highland and Lowland votes, again, there is evidence that Lowland voters are less inclined to turnout than either Highland, or non-Indigenous constituents. Furthermore, while not dealt with in full within this paper, a correlation between turnout levels for Highland voters and referendum questions is observable. Our conjecture is that referendum questions 10, 11, and 12, all that were initiated by conservative Christian groups, were able to mobilise voters to turnout in higher numbers. Whether through targeted campaigning by religious organisations or due to the questions having a higher resonance with social norms and ideologies of Highland Indigenous voters, the observation implies that the content of

ballots have a significant impact on voter turnout. This conjecture, although not supported by this paper, if validated, would highlight the significance of cultural and religious intersections with political behaviour. Furthermore, due to the ballots being held in conjunction with each other as well as national elections the higher turnout rates among Highland Indigenous voters places a greater emphasis on the role of motivational factors, as resources factors are unlikely to change for specific questions. Mobilisation efforts might be particularly effective in these contexts, as local politics and governance have a direct and visible impact on daily lives. This underscores the nuanced dynamics of political engagement among Highland voters, reaffirms the importance of context-specific factors in understanding voter turnout patterns, the topic of referendum questions in particular suggests that interest in participation can be increased depending on the salience of the topic at hand, and/or the nature of mobilisation efforts.

Conclusion

Serious empirical research into the voting behaviour of national minorities and Indigenous peoples has gained progressive speed in the last few years. Due to the difficulty of gaining access to sufficient individual level data, the trend has been to use aggregate data or limited, regional studies. This study is able to utilise individual level data on a national scale, allowing for not only analysis of Indigenous voting behaviour over a variety of electoral stages, but also the chance to compare voter behaviour against that of majority voters. The result is a pilot study which challenges perceived international and domestic norms. Rather than a single voting block, Indigenous voters are observed to be varied and dynamic in their approach towards voting. Not only are clear distinguishments found in contrast with majority voters but also within the Indigenous population. The behaviour of Indigenous voters observed through this study not only contra-

dict accepted norms in terms of racialised, minority voting behaviour, but also hint towards potential challenges to general theories of resource based voting, the importance of social cohesion, and the importance of 'second order' subnational elections to voters.

Given the limitations of the existing dataset and the lack of individual level variables included, we see this study as a powerful predictor to the depth of the empirical and theoretical potential of research on the voting behaviour of Indigenous voters in Taiwan. Currently, no large scale, individual level study including socio-demographic indicators, voting attitudes and self-reported behaviour exists. While such data is available for majority voters, the lack of attention paid to Taiwan's minority voters by major research institutes means that the scope of political research in Taiwan is limited. Were future research to sufficiently recognise the value of Taiwan's cultural and ethnic diversity as a basis for research in modern political behaviour, it is our opinion that the scope of the contribution to the Political Science literature would be equally as rich and diverse.

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台灣原住民投票率的大規模探索性分析

張晉赫*、Daniel Davies**

《本文摘要》

本研究針對台灣2016年和2020年總統及立法委員選舉，以及2018年地方選舉和公投的個別投票數據進行大規模分析，以三種方式深入研究原住民的投票行爲。首先，我們挑戰認爲原住民選民投票率低於非原住民選民的傳統觀點。其次，我們比較高山族和低山族選民之間的投票率差異。最後，我們分析不同類型選票（全國和地方選舉以及公投）的投票變化。與國際和國內普遍觀點相反，我們發現原住民選民在投票行爲上表現出多樣性和動態性，這種多樣性不僅在與漢族選民的比較中顯現，也在原住民群體內部以及不同類型選舉的互動中體現出來。

關鍵詞：原住民、投票行爲、選舉、公民投票、台灣政治

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