



TOKONA TE RAKI
Māori Futures Collective

CHANGE AGENDA: INCOME EQUITY FOR MĀORI



MAKING SENSE
OF THE NUMBERS

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MAKING SENSE OF THE NUMBERS

The purpose of this report is to create an evidence base, quantifying some aspects of inequity in Aotearoa. There are many dimensions of equity, but for the purpose of this report we have focussed on education and income.

This report is the product of a collaboration between BERL and Ngāi Tahu drawing upon diverse perspectives, experience and knowledge. The Māori population of Aotearoa is young and growing much faster than the non-Māori population. With this growth, the missed opportunities from the perpetuating inequity will continue to grow.

This equates to \$140 less, per person, per week for the working age Māori population

Why does the gap exist?

Māori population are young, the average age for Māori in Aotearoa is 28 years old, ten years younger than the average for Aotearoa

Currently, one third of the working age Māori population have no qualifications

Over half of the working Māori population have lower skilled jobs

If business as usual continues, the world in 2040

The income gap will increase to \$4.3 billion per year

Technological changes will favour the highly skilled, while displacing low skilled labour

Almost half of the current Māori labour force are at a high risk of being replaced by automation

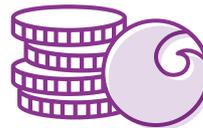
If we achieve equity, it will mean

An additional \$2.6 billion per year into Māori households

55,000 Māori will move from no qualification to having a qualification

22,500 currently in low skilled jobs will move to high skilled jobs

Increase the New Zealand tax revenue, by around \$700 million per year



Current income gap for Māori is **\$2.6 billion per year**

Correcting the inequalities will be beneficial for not only Māori, but Aotearoa as a whole. Removing the inequalities will require significant changes to the status quo, the education system needs to be rewired for Māori success, providing Māori with the skills to adapt to the ever-changing labour market.

Authors: Hillmarè Schulze, Sam Green.

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AN AGENDA FOR CHANGE

This report is the product of a collaboration between BERL and Ngāi Tahu drawing upon diverse perspectives, experience and knowledge.

Ngāi Tahu is focused on achieving Māori potential, something that is difficult to quantify or measure, so we look at inequalities (imbalances) that are caused by inequities (injustices) as inequalities can be measured. The data provides an insight into inequalities of education and income. With the right backing, support and understanding it will make a difference in countering the injustices, systems, policies and mind-sets that cause and perpetuate them.

Equality with Pākehā is not the final destination but one of many navigation markers upon the journey to a world where all Māori can live and succeed as Māori. The purposes of this report are firmly rooted in a commitment to social change and Māori potential.

The implications are significant as the data contrasts the threat of doing nothing with the opportunity of achieving equitable outcomes for Māori. We will not, however, be able to claim ignorance if we choose to perpetuate these inequities into the future. We now have an informed, moral and economic imperative to act.

Mā te huruhuru te manu ka rere.

Let our rangatahi be the wings that give us flight.

Ngāi Tahu traditions talk of our ancestors who once sat on the shores of our ancient homeland Hawaiki. They believed more was beyond their horizon but had no proof so they created a canoe adorned with feathers called Te Waka Huruhurumanu and then sent it off to explore beyond their known world. When it returned battered and worn they took this to mean that there was life beyond inspiring them to set off in search of new lands.

Today we sit on similar shores. We know change is coming but fear the unknown and have lost touch with our ability to imagine a future beyond what we already know. This report helps us to set our course towards a new reality starting with a clear picture of what we want to leave behind, a history of systemic inequities between Māori and non-Māori caused by colonisation. The data also paints the picture of a vibrant future where equitable outcomes for Māori are a reality not a goal to show how all benefit from Māori success.

Our rangatahi are 100% of our future and the demographic trends show all New Zealanders have a stake in supporting Māori success. Maintaining the status quo is no longer viable for both Treaty partners and we have both a moral and economic imperative to act.

Ki te hoe!



Lisa Tumahai
Kaiwhakahaere
Te Rūnanga o Ngāi Tahu

Me mōhio i ahu mai koe i hea, kia mārama ai ka anga atu koe ki hea.

You must know where you have come from to plan where you are going.

Māori potential and productivity are not the same. Māori potential is much more than equity but is used here as a proxy to help us think critically about the causes of inequity for Māori and to plan action for social change. The data paints a picture of a system that does not serve many whānau and how this education debt reinforces further disparities of opportunity and income. The challenge is to draw attention to and change a system that has created and maintains these inequities lest we perpetuate them into the future.

It is clear the fate of our aging Pākehā population is tied to the success of our younger faster growing Māori workforce. This report has been written to support the opportunity of our rangatahi to lead and to focus efforts on understanding and countering the underlying causes of inequity whilst also tantalising and inspiring with glimpses of the just and fair future we can create together.

Kei a tātou te mana.



Dr Eruera Tarena
Executive Director
Tokona te Raki: Māori Futures Collective

He tangata, he tangata, he tangata. Tihei mauri ora.

Economists, like many in specialist subject areas, love to use jargon. For example, we talk of GDP and productivity. Unfortunately, the jargon has a habit of hiding the simple stories. So, many believe economics is all about GDP, profits, productivity, and dollars and cents.

Rather, it is about people – and how they use rawa or resources (e.g. land, water, technology, and their skills, knowledge, and expertise) to improve their wellbeing. Inequities, reflected in the inequality in access to education and of incomes, hinder people's abilities to use rawa and so impact on their wellbeing. So, when you read the dollar numbers in this report about the size of the inequality, remember they represent people's opportunities, lives, and wellbeing being eroded.

And when those inequities are large and concentrated within specific population groups, the wider wellbeing of whānau, hapū, iwi, community, town, and country also suffers.

Māori have had and continue to have unequal opportunities to access to education and better incomes. We individually and collectively bear the costs of this inequality. Alternatively, we all – individually and collectively – reap the benefits when we succeed in changing the agenda and reduce the inequalities currently present.

Ngā mihi nui.



Dr Ganesh Nana
Chief Economist
Business and Economic Research Ltd

WHAT IS EQUITY AND DOES IT MATTER?

WHAT IS EQUITY?

Equity means fairness, in contrast to equality which simply means sameness. Achieving equity is considered to be a social and economic objective of the current Government of Aotearoa. Despite the general recognition of the desirability of fairness, what is fair can be subjective, and requires case-by-case analysis.

One of the fundamental principles of fairness is that everyone should have the opportunity to succeed, and through these opportunities they can support their long term wellbeing. With equal opportunity, outcomes would also be expected to be similar. In this report, we use equality as a proxy for equity.

The opposite of equality is inequality, and this can arise in two main ways:

- Inequality of opportunity
 - Inequality of outcome
-

Though these inequalities do not paint a full picture of equity, they provide an insight into equity.

Inequality of opportunity is often measured in availability of education. In Aotearoa, education is 'available' to everyone through the public schooling system and support for tertiary students in terms of loans, subsidies, scholarships and allowances. While 'available', there are a range of factors that can influence an individual's ability to access the full potential of the opportunity including financial constraints, needing to work while studying or having to support family members.

Equality of outcomes, which is often dependent on equality of opportunity, can also be measured in both financial and non-financial terms and are components of a person's long term wellbeing. While equality can provide insights into equity, equality should not be considered the long term objective. The long term objective should be equity, where everyone has fair opportunities and outcomes.



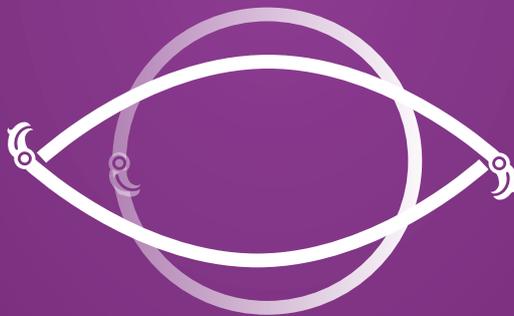
In general, a negative relationship has been observed between the level of inequality and economic growth in a significant proportion of countries across the world.

DOES IT MATTER?

Research on the effects of inequality has been researched on a wide range of outcomes, showing very negative results. Two British epidemiologists, Richard Wilkinson and Kate Pickett, shows that countries with greater income inequality suffer from more health problems, have lower life expectancy, higher rates of mental illness, more drug use, higher rates of teen pregnancy, higher rates of violence, more crime, and less social trust (Wilkinson, Pickett, 2009). Thus, equity affects everybody, and influences all parts of society.

Around the world, inequality has also been linked with low economic growth. With all of the evidence showing the negative effects of inequalities, income inequality has increased dramatically in the past few decades in many countries including Aotearoa.

The International Monetary Fund (IMF) have linked rising inequality to a wide range of factors. Some of these factors include wealthy individuals using their influence to further their position while they receive tax cuts. The IMF have also listed technological change as a factor as new innovations automate low skilled jobs, increasing incomes for high skilled workers and shareholders. (IMF, 2017).



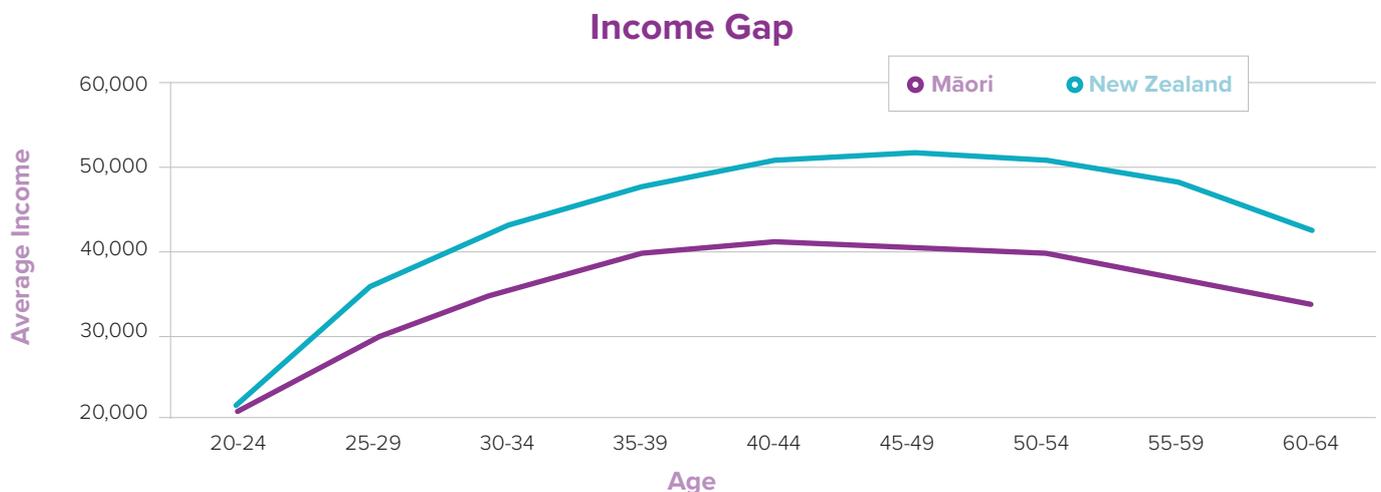
PURPOSE OF THIS REPORT

The purpose of this report is to create an informed understanding of the current level of inequality in Aotearoa, particularly in the context of the inequalities faced by Māori. We explore the inequality of outcome, in terms of income, education, employment and housing. We also estimate the flow on effects on the economy if equality was achieved for Māori in Aotearoa. Highlighting the inequalities in outcomes, in part, highlight the inequalities in opportunity that need to be removed in achieving an equitable system in Aotearoa.

INCOME GAP FOR MĀORI IN AOTEAROA

An inequality of outcome that can have a significant impact is income. In Aotearoa, there is a significant gap between average incomes for Māori and the average income for the total Aotearoa population. At every age level Māori receive a much lower average income, \$10,000 less per year for those aged from 40 to 60 years old. In total, the Māori population earn \$2.6 billion per year less than they would if they all earned the average income for their age.

Figure 1: Income gap between Māori and the Aotearoa average



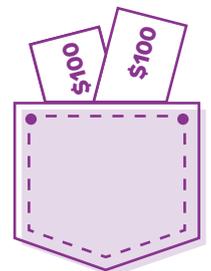
In Aotearoa, the peak income earning years for individuals is from 40 years old to 54 years old. For Māori, the average peak income is 20 percent lower and occurs earlier, between 35 and 49 years old. With a clear difference in income levels between the Aotearoa and Māori populations, we are presented with two questions that this poses for the future; **What will happen if we removed the gap? What will happen if we do nothing?**

1.1 What if the gap was removed?

Removing the income gap could provide a number of social and economic benefits for Māori and to the whole of Aotearoa. The direct result would be a boost in income for Māori, of \$140 per working age person. Due to peak Māori incomes being earlier in life than the Aotearoa average, the benefit would be greater for the older population; those aged from 40 to 59 years old would receive an additional \$200 per week.

This increase in wages, on top of the social benefits of lower inequity, would generate additional tax revenue. If the income gap was closed, and the average income for Māori was the same as the Aotearoa average for their age, the increase in wages would increase the Aotearoa tax revenue, by around \$700 million per year¹.

If the income gap was closed, for people aged between 40 and 44 they would receive an additional **\$200 per week**



1. See appendix for calculations and methodology.

1.2 What would happen if the gap was ignored?

As the future is always uncertain, in this section, in light of the differences in income, we examine the future under a business as usual scenario. Without any significant changes, if the income gap persists, growth in the Māori population will continue to increase the existing income gap.

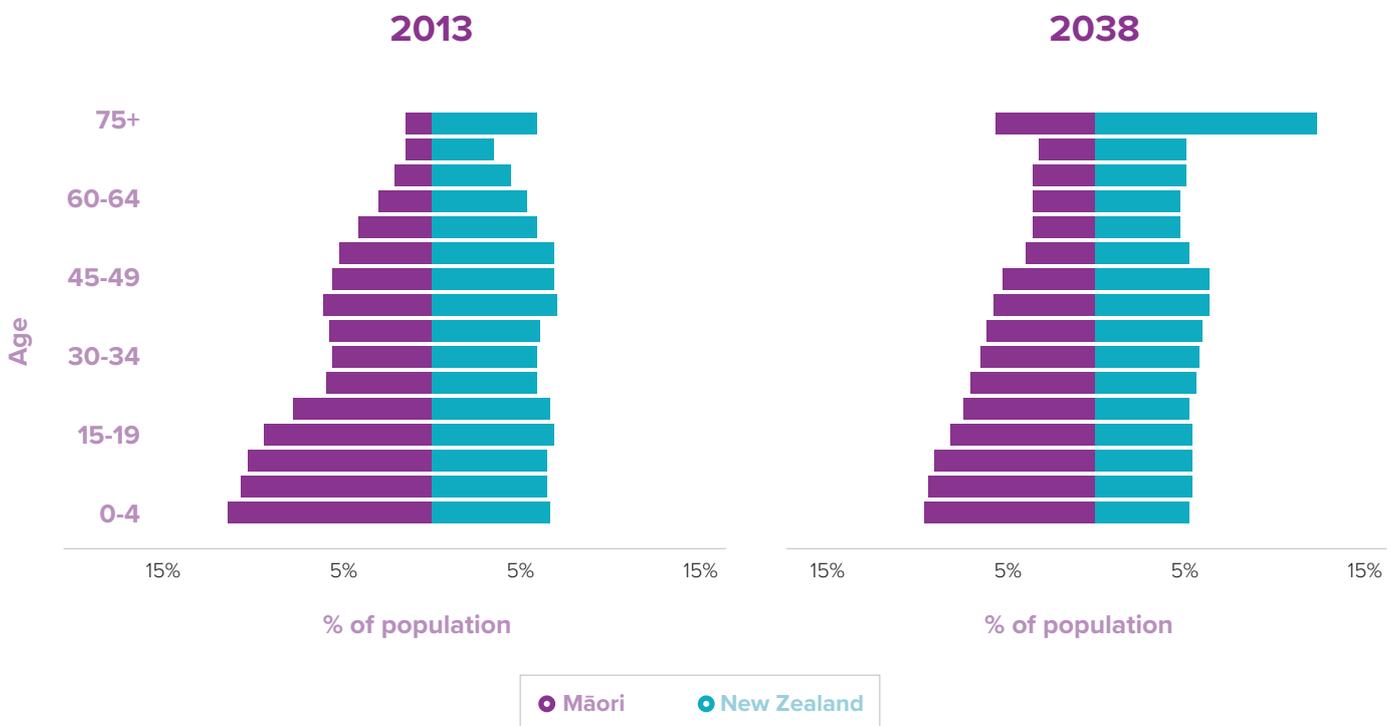
The Māori population is relatively young compared to the whole Aotearoa population. The average age for Māori in Aotearoa is 28 years old, ten years younger than the average for Aotearoa.

Figure 2: Population age pyramids

Figure 2 shows a comparison of the Māori and Aotearoa population ages. More than 40 percent of the Māori population are under 20 years old, compared to the Aotearoa average of less than 30 percent. Because the Māori youth population is so much larger than the Aotearoa average, the Māori share of the working age population will grow in the coming years. Currently, 13 percent of the Aotearoa labour force are Māori, but Statistics Aotearoa estimate that the Māori labour force will increase 50 percent by 2038 and will make up almost one fifth of the working age population.

If there is no intervention, the growth in the Māori population will drive further growth and will perpetuate the existing income gap. By 2038, if this level of inequality persists, the income gap will increase to \$4.3 billion per year¹.

These demographic shifts also present a unique opportunity where a younger and faster growing Māori workforce will be needed to support an aging Pākehā population. Rangatahi success presents the most significant opportunity to enhance productivity and ensure collective prosperity for all in the future.



1. See appendix for calculations and methodology.

EMPLOYMENT

Employment is the largest contributor to the personal income of the average person in Aotearoa. This section provides an understanding of the differences between the Māori labour force and the national labour force. This will highlight some of the causes of the current income gap, and changes that may be required in closing the existing income gap.

There are two main factors that contribute to an individual's income; the amount of work, and they type of work that they do.

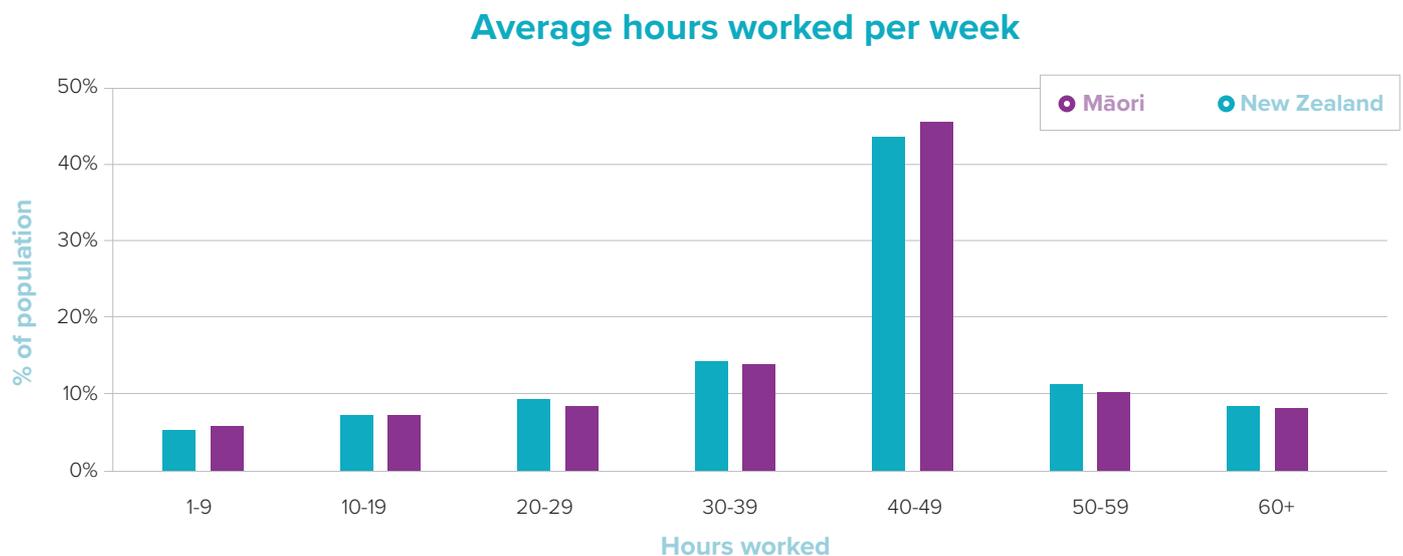
2.1 Hours worked

The average hours worked by Māori is very similar to the Aotearoa average. Figure 3 shows that almost half of the working Māori population work between 40 and 49 hours per week, a very similar amount to the national average. The similarities in hours worked mean that the differences in income are not due to the time that is worked, or the Māori work ethic, but rather the amount of income per hour worked.

The similarities in hours worked mean that the differences in income are not due to the time that is worked, but rather the amount of *income per hour* worked



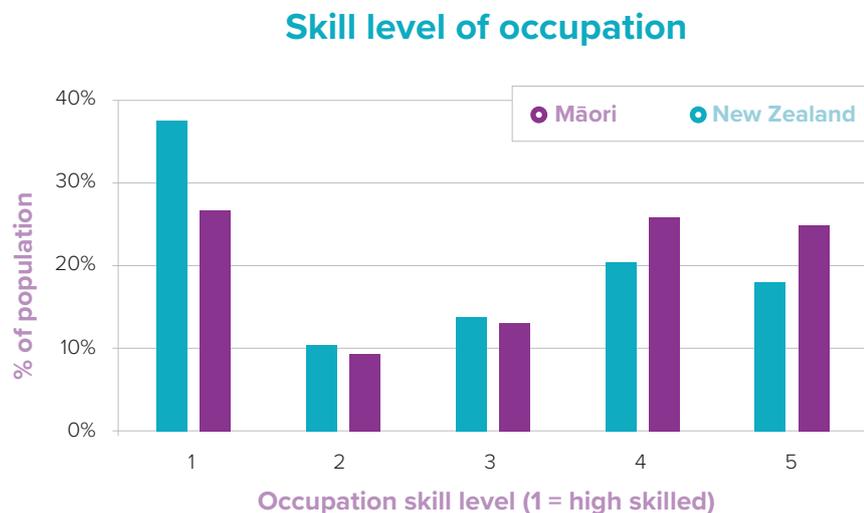
Figure 3: Hours Worked



2.2 Occupations

After first joining the labour force, and gaining the skills and experience associated with working, individuals receive a corresponding increase in income as observed in Figure 1. This figure shows that income for Māori increase slower and peak earlier than the Aotearoa average. This peak may be partly due to the skill level required by occupations being met more quickly with fewer opportunities to progress. The Australian and Aotearoa Standard Classification of Occupations (ANZSCO) attribute a skill level rating to the standard occupations in Aotearoa. The proportion of the Aotearoa and Māori populations in each of these skill levels are shown in Figure 4.

Figure 4: Occupation skill level



From Figure 4, it is clear that there are large differences in the occupational skill levels between Māori and the national average. In the highly skilled category, almost 40 percent of the employed population work in a high skilled occupation. For Māori, just over a quarter work in highly skilled jobs. Instead, over half of the working Māori population have level 4 or 5 occupations.

To correct this difference in occupations, if with the current population, 22,500 Māori, currently in level 4 or 5 jobs, would need to move to high skill jobs.

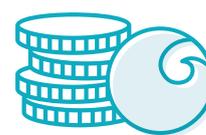
2.3 Jobs of the future

The labour market is constantly evolving, and many of the major drivers of transformation currently affecting global industries are expected to significantly impact jobs. The expected effects include significant job creation and significant job displacement, and from heightened labour productivity to widening the skills gap (World Economic Forum, 2016). As technology advances, low skilled jobs are often the first to be replaced but often result in the creation of higher skilled jobs. This results in the advancement of technology favouring the highly skilled while displacing low skilled workers (Hemous, Olsen 2016).

Historically, external shocks such as recessions had a disproportionately negative impact on Māori compared to non-Māori. This observation has been linked to where Māori have been concentrated in the labour market and industry sectors. In recent years, Māori have made significant gains in terms of skills and education; more Māori are in skilled and highly skilled jobs across an increasing range of sectors. Nonetheless, a relatively high proportion are still employed in lower-skilled, lesser paid occupations including significant numbers of Māori in sectors particularly vulnerable to the current international economic developments, including the construction and manufacturing industries.

The World Economic Forum surveyed employers from a wide variety of countries and sectors to estimate the employment outlook from 2015 to 2020 for the companies' 13.5 million employees. The summary of their results are set out in Figure 5.

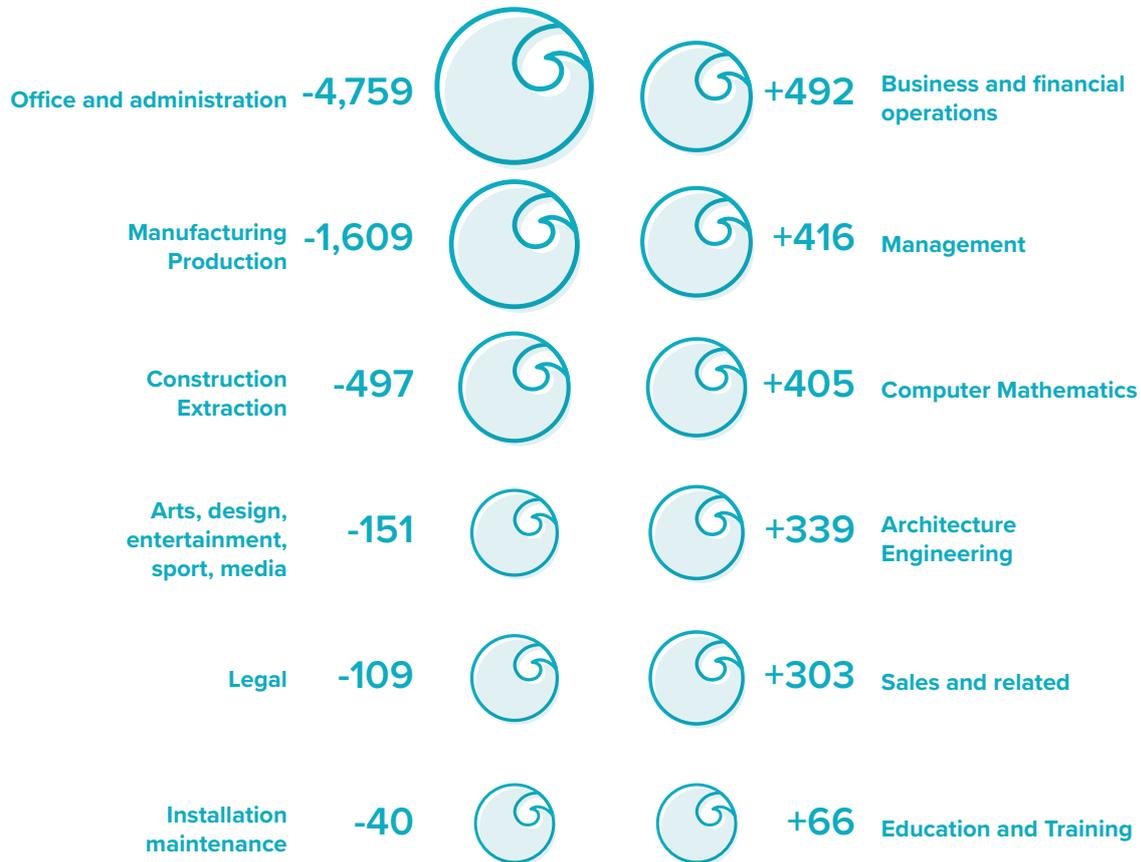
Disruptive technologies and innovation will have a profound impact on employment over the next decade



Historically, recessions had a disproportionately negative impact on Māori compared to non-Māori due to where Māori have been concentrated in the labour market

EMPLOYMENT

Figure 5: Net employment outlook per job family 2015 to 2020, employees (thousands)



It is evident that office and administration, and manufacturing and production will be the hardest hit in terms of employment, 43 percent of the current Māori workforce are employed in these two sectors. Clearly, a significant proportion of the current workforce will be at risk in the medium term as the employment landscape changes.

The computer and mathematics job family is anticipated to experience very high growth centred on data analysis and software and application development – not just within the IT industry but across a wide range of industries. Currently only one percent of Māori are employed in the computer and mathematical job family.

This suggests Māori are at high risk of being disproportionately harmed by changes to the work in the future and least likely to benefit from the opportunities these changes will create. The need to revolutionise our education pipeline is imminent. Creating educational spaces that reflect the changing demographics will have long-term positive effects on achievement and career pathways.

43%

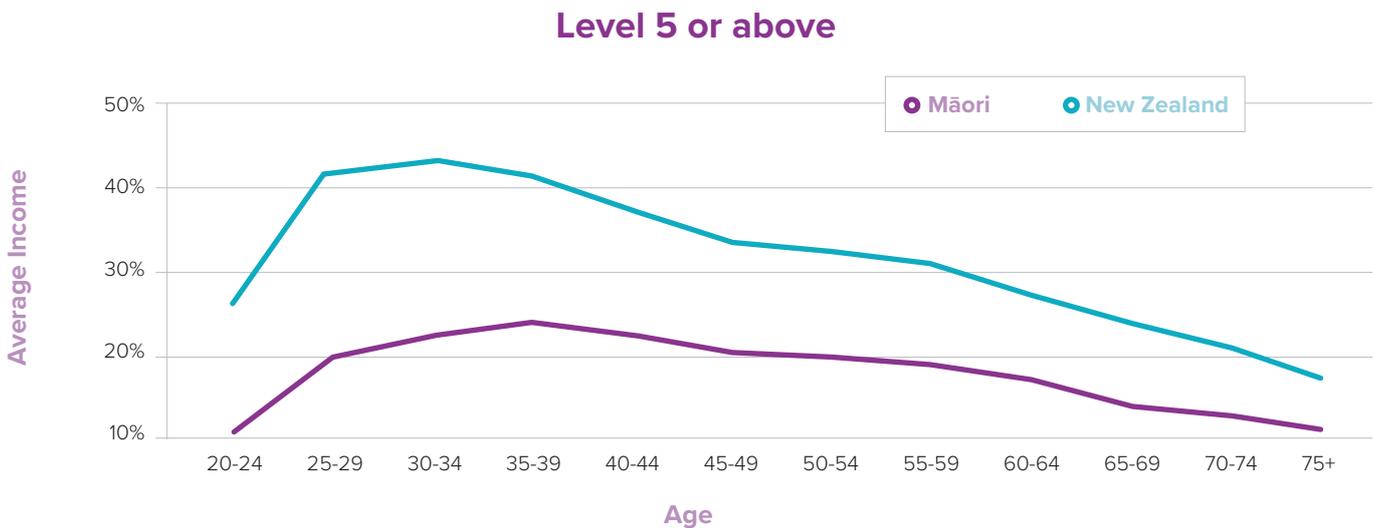
of Māori are employed in office and administration or manufacturing and production jobs that are at high risk of shrinking significantly in the next few years

2.4 Qualifications

With a need to transition towards higher skilled jobs, there are a number of factors that need to be overcome. One of the most prominent barriers to entering many high skilled industries is qualifications. Currently, one third of the working age Māori population have no qualifications. To reduce the proportion of the Māori population with no qualifications to the national average, 55,000 Māori, currently with no qualifications, would need to gain the equivalent of at least a high-school qualification.

At the other end of the education scale, the difference is also substantial. In Aotearoa, level five qualifications or above include advanced certificates, diplomas, degrees and post graduate qualifications. The proportion of the Māori and national population with these qualifications is shown in Figure 6. Almost 30 percent of the working age population hold one of these qualifications. For Māori, only 16 percent hold a level 5 qualification or higher. This difference represents 50,000 Māori that would need to gain a level 5 qualification for Māori to have the same qualifications as the national average.

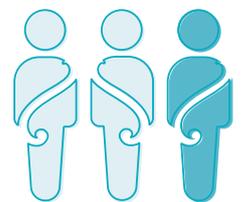
Figure 6: Proportion of the population with a level 5 qualification or higher



2.1 Future qualifications

Increasing the qualifications for 55,000 people from having no qualifications to having qualifications, and increasing the qualification of 50,000 people to at least a level 5 qualification, is a significant change, but over time, under current education rates, this will continue to grow. By 2038, there will be 95,000 Māori requiring qualifications and 80,000 requiring at least level five qualifications to match the national average education levels.

One third of the working age Māori population have no qualifications



HOW WILL THE FUTURE WORLD FURTHER INFLUENCE EQUITY?

Apart from qualifications, skills and quality of jobs there has been specific global trends that have acted to increase the inequality. The trends that will have a direct effect on the Māori workforce are:

Technological progress (particularly computers) affect income groups differently. In particular, technological progress will undermine the demand for medium-skilled labour, while increasing the demand for highly skilled people (eg, Kierzenkowski and Koske 2012 give the example that the demand for book-keepers fell but the demand for accountants rose). World-wide working hours have decreased most for mid-skill workers and least for high skill workers (OECD, 2011). This “hollowing out” of the middle will mean that in the future income distribution will become more focused on the two extremes.

Globalisation increased pressure for regulatory reforms and changes to labour markets across the globe. The rapid trade and foreign direct investment integration of the past quarter century has benefited Aotearoa as a trading nation, increasing our overseas earnings, and reducing the prices paid by families for imported goods. However, in order to reap these benefits trade barriers had to be lowered and this may have increased pressures on some labour market institutions (notably the minimum wage rate and the level of unionisation). Overseas it has been found that these trends increased the number of people in employment, but more of them got low-paid jobs. The global trends will continue to influence the local labour market, including Māori.

The rise in the number of skilled workers has, on the other hand, provided a sizeable offset as a higher proportion of workers are employed in higher earning jobs. The growth in skilled jobs (partly due to increased globalisation, as well as increased skill levels), particularly in the service sector, also had a significant positive impact on employment growth. If Māori do not move into these skilled jobs, they will again be adversely affected by this global trend.

“... more egalitarian societies tend to have lower steady-state unemployment. They also tend to have higher rates of technical progress and productivity growth.”

- James K Galbraith

WHAT IS THE FLOW ON EFFECT OF THE INCOME GAP?

In the introduction it is mentioned that the discourse on inequality often makes a distinction between inequality of outcomes and inequality of opportunities. Inequality of outcomes arises from a combination of differences in opportunities and individual's efforts and talent. At the same time, it is not easy to separate effort from opportunity, especially in an intergenerational context.

For instance, parental income, resulting from their own effort, determines the opportunity of their children to obtain an education. It is in this spirit that Rawls (1971) argued that the distribution of opportunities and of outcomes are equally important and informative to understand the nature and extent of inequality.

4.1 Poor health outcomes

Increasing evidence from scientists the world over indicates that many health outcomes — everything from life expectancy to infant mortality and obesity — can be linked to the level of economic inequality within a specified population. Thus, greater economic inequality appears to lead to worse health outcomes.

Income is acknowledged as being one of the key socio-economic variables influencing health status. The health of a population is affected more by the degree of inequality of income distribution than by the level of wealth per se. Education is also connected, as there is substantial evidence that a low level of education is associated with poor health status, and that those with the lowest level of education are disproportionately at risk of ill-health. Maintaining current Māori health inequities could see increasing health costs and declining outcomes into the future. Conversely, addressing these inequities could see increased Māori health outcomes and decreased social spend.

4.2 Decreasing home ownership

The level of home ownership for Māori is also significantly lower. 52 percent of the Aotearoa population live in an owner-occupied home. For Māori, only 37 percent of the population live in an owner occupied home.

Other than being associated with high wealth, home ownership has been associated with a number of non-financial factors including health and education outcomes. For example, home ownership is a very important asset for households that brings numerous income advantages. Some of these include a return on investment from increases in house prices and the savings households make when they don't have to pay rent. So unaffordable housing restricts low-income earners from accessing these financial benefits.

CHANGE AGENDA FOR THE FUTURE

The persistence of high and rising income inequality over recent decades is a growing concern for policy makers. It is important that we address the equity gap to ensure long term social and economic mobility as well as economic growth for Aotearoa. The focus should be on shifting the paradigm (changing the myth) on productivity, rewiring the education system for Māori success and preparing Māori for future opportunities.

5.1 Change the myth about productivity

There is a popular link between productivity and pay; lifting productivity will lead to higher profitability which will lead to higher wages. This linear process appears logical but it has not worked to date.

What if the components of this link were reversed, or moved into a circular pattern? So, rather than pay forever waiting at the end of queue behind productivity and profitability, why not consider pay being the catalyst to garner momentum? Higher pay may lead to higher productivity and higher profitability, thereafter enabling further investment in skills training, research and development, adopting new techniques; sustainably lifting pay, productivity and profitability.

Without equality of income there can be no equality of opportunity



5.2 Focus on rangatahi – education and transition into work

5.2.1 Rewiring the system for Māori success

Income inequality will only shrink when more Māori have the education levels needed to get good quality jobs, or start the next great Aotearoa firm. To lead to a step change in income inequality, education must improve at the primary level, and through high school so students are ready to excel and naturally progress into tertiary education. The newly introduced free first year of tertiary studies will only ease income inequality on the margins, in part because it is often students that would have gone to university in any case who grab these opportunities.

This will require critical thinking about the role our current education system plays in reproducing current outcomes and the development of transformational pathways designed to counter inequities and build upon the strengths of our youth and culture.

This will require a long-term investment of effort and resources that won't show results in the short term. If we truly want to reverse income inequality, we will have to look beyond the current policy settings, to some radical changes in our education system to support Māori.

5.2.2 Preparing Māori for future opportunities

The last 40 years in particular have seen dramatic changes in the income distribution with the skill premium rising throughout, low-skill wages stagnating and more recently a phase of wage polarisation. These changes are often attributed to technological change favouring the highly skilled. As this trend will continue into the future, preparing for the new highly skilled jobs is becoming increasingly important.

If we truly want to reverse income inequality, we will have to look beyond the current policy settings

5.3 Focus on workers already in the workforce – retraining and up skilling

Equipping the workforce with the skills required for the jobs of today and those of tomorrow should be a strategic concern for both Government and iwi.

The foundations for a new policy framework for developing a suitably skilled workforce should include:

- availability of culturally responsive and transformational education pathways as a foundation for future training;
- a close matching of skills supply to the needs of firms and labour markets
- enabling workers and firms to adjust to changes in technology and markets
- anticipating and preparing for the skills needs of the future.

The International Labour Organisation research has shown that when applied successfully, this approach nurtures a circle in which more and better education and training fuels innovation, investment, economic diversification and competitiveness, as well as social and economic mobility – and thus the creation of more but also better quality jobs (ILO, 2010).

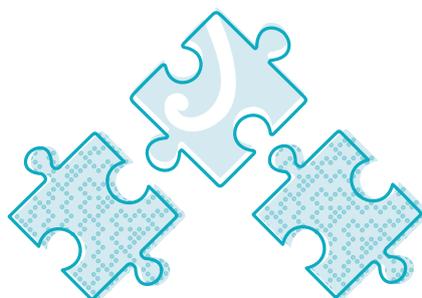
This should be building on our previous point on culturally responsive primary and secondary education for rangatahi, complemented by relevant vocational training and skills development opportunities. This will prepare Māori for better quality jobs, providing access to core skills that enable continued learning.

Creating transformational pathways to educate and retrain will be critical. Creating schooling experiences that equip Māori with the mind-sets, skills and critical analysis to stay connected to their identity as Māori but also hungry to grasp opportunities for leadership in the economy of the future is key to our collective future prosperity.

The future of our nation will depend on a young, skilled and thriving Māori workforce. We all need to invest in the development of a younger and faster growing Māori population to fill the skill gaps left by the large numbers of Pākehā heading into retirement and to meet the needs of future growth. Our rangatahi have the potential to lead but Aotearoa New Zealand needs to change our education pipeline to better support them to realise their potential for the cultural, social and economic benefit of the nation.



Education and retraining will be critical, yet the challenges are daunting



He angitu mō te kotahi, he hua mō te katoa

When each individual has opportunities, all benefit

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APPENDIX A

METHODOLOGY

Calculation of income gap

The income gap is calculated using data from the 2013 census. As the difference in average income for each five-year age range multiplied by the total population of Māori for the respective age range.

Calculation of tax Revenue

In the 2013 Census, individuals select their income from a number of ranges. The calculation of tax revenue from counts of individuals for each age, in each bracket was made in two steps, firstly, the proportion of the Māori population in each income bracket for their age was modified to match the distribution for the Aotearoa population.

After adjusting the counts of Māori of each age in each age bracket, assuming each person earns the midpoint of each income bracket, the total tax revenue (using 2016 rates) for the changes in the income in each bracket is calculated. The aggregate of all the changes provides the total change in tax revenue.

Calculation of occupation skill level

The Australia Aotearoa Standard Classification of Occupations (ANZSCO), provide skill level ratings for the occupations in Australia and Aotearoa divided into 997 occupations. Due to confidentiality, for the purposes of this report, occupations are broken in to 43 high level occupation groups. For 35 of the occupation groups, each subgroup has the same skill level as the occupation group. For the other eight groups, it is assumed that employees are evenly distributed across each skill level. For instance, hospitality workers includes subgroups with skill ratings of 4 and 5, in this report, half of the hospitality workers are placed into each category.



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