



berl

Qualifications Delivering for New Zealand?

Haratua 2020

www.berl.co.nz

Author: Sam Green

All work is done, and services rendered at the request of, and for the purposes of the client only. Neither BERL nor any of its employees accepts any responsibility on any grounds whatsoever, including negligence, to any other person.

While every effort is made by BERL to ensure that the information, opinions and forecasts provided to the client are accurate and reliable, BERL shall not be liable for any adverse consequences of the client's decisions made in reliance of any report provided by BERL, nor shall BERL be held to have given or implied any warranty as to whether any report provided by BERL will assist in the performance of the client's functions.

Making sense of the numbers

New Zealanders are becoming increasingly qualified, with the share of the population with post-graduate degrees doubling between 2013 and 2018.

Qualifications are seen as a positive indicator for New Zealand, as they can offer significant benefits for individuals, creating a pathway to highly skilled jobs and high incomes. Evidence from the 2018 New Zealand Census confirms that high qualifications can be valuable, but depending on the area of work, may be less valuable than a lower level qualification in a more relevant area.

For individuals that are not able to achieve relevant work, their qualification may not provide any benefit in the form of a higher income.

On average, controlling for occupations and industry, bachelor's degree holders earn 28 percent more than individuals with no qualifications. However, for the 21,000 individuals with degrees working as technicians and trades workers, this benefit is reduced to just four percent.

This report highlights the need to develop career pathways, with qualifications being just the first step. Employment in the relevant areas, with the ability to build on the skills gained from education is critical in ensuring qualifications deliver for New Zealand.

Contents

1	Introduction.....	1
2	Qualifications	2
3	Where are New Zealand’s qualified workers	3
4	Relationship between qualifications and incomes	5
4.1	Incomes	5
5	Underemployed and overqualified	6
5.1	Labourers	6
5.2	Machinery operators	6
5.3	Sales workers.....	7
5.4	Clerical and administrative workers	7
5.5	Community and personal service workers.....	8
5.6	Technicians and trades workers.....	8
5.7	Professional occupations	9
5.8	Managers	9
6	Conclusions	11
6.1	Further work required.....	11

Tables

Table 1 Qualification profile of New Zealand residents	2
Table 2 Share of workers with bachelor's degree or above by industry of work (%)	3
Table 3 Share of workers with bachelor's degree or above by occupation (%)	4
Table 4 Income by qualification and occupation of work, 2018 (\$)	5
Table 5 Additional income of qualification, 2018 (%).....	5
Table 6 Additional income of labourers with qualifications, 2018 (%)	6
Table 7 Additional income of machinery operators with qualifications.....	7
Table 8 Additional income of sales workers with qualifications, 2018 (%)	7
Table 9 Additional income of clerical workers with qualifications, 2018 (%)	8
Table 10 Additional income of personal service workers with qualifications, 2018 (%)	8
Table 11 Additional income of technicians and trades workers with qualifications, 2018 (%)	9
Table 12 Additional income of professionals with qualifications, 2018 (%).....	9
Table 12 Additional income of managers with qualifications, 2018 (%).....	10

1 Introduction

Qualifications are an important part of developing skills that will deliver better outcomes for New Zealanders in the future. The education that these qualifications represent, has the potential to improve employability, incomes and broad wellbeing outcomes.

However, some qualifications are more productive than others, and the outcomes delivered by some qualifications far exceed others. This study seeks to identify the landscape of the qualifications and qualified work in New Zealand, identify where qualifications are delivering, and point to where work experience and skill development may be more beneficial for workers.

2 Qualifications

Over the past five years, qualifications in New Zealand have increased substantially. In the 2018 Census, only 11.6 percent of New Zealand residents indicated that they had no qualification, a substantial reduction from the 14.2 percent seen in 2013. The proportion with qualifications at level one and two also decreased. The profile of qualifications is also changing, with very high qualifications being increasingly common.

Post-graduate diplomas and honours degrees are now held by 7.2 percent of the population, up from 3.7 percent in 2013. This could indicate a significant amount of career transitioning occurring, with previously qualified individuals completing additional study to transition into a new career area. Graduates may also recognise that higher qualifications can also make them stand out when compared with other individuals with just a bachelor's degree.

Table 1 Qualification profile of New Zealand residents¹

Highest qualification	2013 (%)	2018 (%)
No qualification	14.2	11.6
Overseas secondary school	5.7	4.9
Level one certificate	12.2	10.0
Level two certificate	11.3	10.5
Level three certificate	9.6	11.9
Level four certificate	11.4	10.1
Level five diploma	5.2	5.7
Level 6 diploma	5.3	5.1
Bachelor's degree and level seven	16.9	17.7
Post-graduate and honours degrees	3.7	7.2
Master's degree	3.4	4.4
Doctorate degree	0.9	1.0

¹ Over 15 years old.

3 Where are New Zealand's qualified workers

Qualifications mean different things in different areas of the workforce. Firstly, qualifications can be used to verify a minimum required skillset required for a career (doctors, accountants, engineers etc.). Some qualifications are also used as a signal, to show capability of an academic standard of writing, and ability to understand complex ideas, and discuss them. For the first aspect of qualifications, the qualifications themselves often enable entry into the field of work, while for the latter proven work experience may be sufficient to enter the profession.

As shown in Table 2, in 2018 there were five industries where at least half of the workforce had a bachelor's degree or higher. These areas are education and training; professional, scientific and technical services; health care and social assistance; public administration and safety; and information media and telecommunications. These five industries often have occupations which need a degree as a minimum requirement for gaining employment.

Table 2 Share of workers with bachelor's degree or above by industry of work (%)²

Industry	2013	2018	% change
Agriculture, forestry and fishing	12	15	25
Mining	21	25	21
Manufacturing	17	21	27
Electricity, gas, water and waste services	34	36	5
Construction	9	13	50
Wholesale trade	24	27	15
Retail trade	18	22	25
Accommodation and food services	18	23	25
Transport, postal and warehousing	14	18	35
Information media and telecommunications	42	50	19
Financial and insurance services	43	49	14
Rental, hiring and real estate services	26	32	21
Professional, scientific and technical services	60	63	5
Administrative and support services	27	30	9
Public administration and safety	43	51	17
Education and training	67	73	9
Health care and social assistance	54	60	12
Arts and recreation services	37	42	15
Other services	23	25	7
Not elsewhere included	19	0	-100

² Industries are based on the Australia and New Zealand Standard Industrial Classification (ANZSIC)

While there are high levels of qualifications in very technical roles and industries, the remaining industries are starting to catch up. In the construction sector, 13 percent now have at least a degree, up from just under nine percent in 2013, a 50 percent increase. While some of these workers may be using their degree in their employment, this may also be an indication of workers being highly qualified in one area, but working in another area where the qualification has little direct benefit.

A similar pattern emerges when looking at qualifications by occupation as shown in

Table 3. Professionals are by far the highest qualified occupation group, with two-thirds having at least a degree. Rapid growth in qualifications is occurring in occupations where previously very few workers had degrees, including labourers and machinery operators and drivers.

In total, every occupation and industry group saw an increase in workers with at least a bachelor's degree.

Table 3 Share of workers with bachelor's degree or above by occupation (%)³

Occupation	2013	2018	% change
Managers	26	31	22
Professionals	61	67	10
Technicians and trades workers	8	11	43
Community and personal service workers	15	19	33
Clerical and administrative workers	18	24	28
Sales workers	13	17	31
Machinery operators and drivers	4	7	66
Labourers	6	9	50
Residual categories	20	0	-100

³. Classifications used are then Australia and New Zealand Standard Classification of Occupations (ANZSCO)

4 Relationship between qualifications and incomes

On average, having higher qualifications are clearly associated with higher incomes. However, in certain areas of the workforce, and for certain qualifications, this effect is much weaker. Unsurprisingly, for jobs where qualifications are a barrier to entering the specialised positions, having higher qualifications are associated with higher incomes.

4.1 Incomes

Table 4 highlights the average income of workers in each occupation group based on their qualifications. On average, qualifications result in higher incomes for workers, but this is not always the case. In some instances, individuals with higher qualifications actually earn less than less qualified workers.

Table 4 Income by qualification and occupation of work, 2018 (\$)

Occupation	No qualification	One to three	Four to six	Degree	Post-graduate
Managers	60,500	68,500	75,000	87,500	103,000
Professionals	50,500	61,500	65,500	71,500	83,000
Technicians and trades workers	45,000	46,000	58,000	48,500	54,500
Community and personal service workers	30,000	30,500	40,000	38,500	42,000
Clerical and administrative workers	43,500	46,000	49,500	50,000	57,000
Sales workers	36,500	34,000	46,000	47,500	51,000
Machinery operators and drivers	48,500	46,500	51,000	43,000	44,500
Labourers	33,000	31,000	39,500	32,000	33,500

The result of a basic regression, showing the effect of qualifications on income levels, controlling for industry and occupation, is presented in Table 5. On average, earning a level four to six qualification yields an 11 percent increase in incomes as compared with having no qualification. Having a post-graduate qualification returns workers 28 percent higher incomes than individuals with no qualification.

One very interesting result, is that the average income of individuals with no qualification is higher than individuals with a qualification of levels one to three. This could be an indication that low qualifications are not delivering improved outcomes for workers, or the result of workers holding these qualifications being more likely to be studying for higher qualifications.

Table 5 Additional income of qualification, 2018 (%)

Qualification level	Additional income
Level one to three	-2
Level four to six	11
Bachelor's degree	15
Post-graduate qualification	28

5 Underemployed and overqualified

In this section, we consider the additional income associated with higher qualifications in each of the eight high-level occupation groups. Where workers are not gaining income as a result of their increased qualification, this may indicate that they are ‘underemployed’ and are unwilling or unable to obtain employment in the field of their study.

The additional income measure in this section is calculated using a regression, identifying the effects of qualification on the logarithm of income for workers, controlling for the occupation and industry at the two-digit level from ANSZCO and ANZSIC respectively.

As the results in this section are from a regression model, they are not comparable to the unadjusted data presented in Table 4.

5.1 Labourers

Labouring jobs typically do not require any qualification, though only 65,000 of the 250,000 workers (26 percent) do not hold any qualification. However, one very interesting thing to note is that other than level four to six qualifications, every group of qualification results in a lower average income than not having any qualification at all. This indicates a possibility that the qualifications are not benefiting the workers, or that the qualifications are less valuable in this area than obtaining work experience as a labourer.

The exception to this is qualification level four to six, where workers with these qualifications earn an average of 15 percent more than unqualified workers. This is likely due to many level four to six qualifications being related to trades, which would have direct benefits to labouring work in a wide range of fields.

More than 20,000 labourers in New Zealand hold a Bachelor’s degree, while earning an average of five percent less than labourers with no qualification at all.

Table 6 Additional income of labourers with qualifications, 2018 (%)

Labourer qualifications	Count	Additional income
No qualification	65,085	0
Level one to three	122,559	-9
Level four to six	37,959	15
Bachelor's degree	15,525	-5
Post-graduate qualification	5,967	-6

5.2 Machinery operators

Machinery operators and drivers also do not usually need a tertiary qualification, but will typically require a licence for their particular machinery or vehicle. As shown in Table 7, having no qualifications has a positive average effect on the income levels in this occupation. Almost 10,000 workers in this occupation group have a tertiary qualification, but earn seven to ten percent less than workers with no qualification.

An additional 22,000 have a level four to six qualification. On average; these people earn five percent more than workers in the same occupation with no qualifications at all.

Table 7 Additional income of machinery operators with qualifications

Qualification level	Count	Additional income
No qualification	40,203	0
Level one to three	62,025	-2
Level four to six	22,071	5
Bachelor's degree	6,966	-7
Post-graduate qualification	2,685	-10

5.3 Sales workers

For sales workers, every level of qualification has a positive impact on expected earnings, except level one to three qualifications. As sales jobs can often be more flexible than other occupations, sales workers on a level one to three qualification may have lower average earnings as a result of workers working part-time while studying for higher qualifications.

While the core skills of sales will be required across the whole occupation group, high levels of technical skills may be beneficial in selling specialised or technical products.

Table 8 Additional income of sales workers with qualifications, 2018 (%)

Qualification level	Count	Additional income
No qualification	25,254	0
Level one to three	110,754	-12
Level four to six	34,917	5
Bachelor's degree	25,326	6
Post-graduate qualification	10,227	10

5.4 Clerical and administrative workers

As shown in Table 9, higher qualifications are associated with higher incomes in this occupation group. Workers with post-graduate qualifications earn an average of 19 percent more than workers with no qualification. For other qualification levels, there is a correlation between qualifications and income, but the resulting additional income for higher qualifications is much lower than in other occupation groups.

Table 9 Additional income of clerical workers with qualifications, 2018 (%)

Qualification level	Count	Additional income
No qualification	23,715	0
Level one to three	122,397	3
Level four to six	48,216	9
Bachelor's degree	39,552	8
Post-graduate qualification	20,442	19

5.5 Community and personal service workers

For personal service workers, all qualifications over level four are associated with higher income levels than no qualifications. This occupation includes restaurant staff, which may result in lower incomes for workers with level one to three qualifications, with some workers working part time and studying.

Most of the occupations in this group do not require formal qualifications as part of their employment, as shown by the high share with relatively low qualifications. None of the occupations in this group are classified by ANZSCO as skill group 1 (five point rating) or “Highly skilled”, meaning that a degree or equivalent experience is required for entry into the occupation. However, higher qualifications do result in higher incomes for this group including 19 percent more for workers with a post-graduate qualification.

Table 10 Additional income of personal service workers with qualifications, 2018 (%)

Qualification level	Count	Additional income
No qualification	24,054	0
Level one to three	99,234	-5
Level four to six	51,066	12
Bachelor's degree	29,382	13
Post-graduate qualification	12,450	19

5.6 Technicians and trades workers

For technicians and trades workers, the most valuable qualification is the level four to six qualification. As most trade qualifications are in this level range, this is the most relevant qualification to this area of work.

For the 21,000 workers in this occupation with a bachelor's degree, their income is only four percent higher than workers with no qualification at all. This suggests that the bachelor's degree was less beneficial for workers in this area than completing an apprenticeship and the associated level four to six qualification.

Table 11 Additional income of technicians and trades workers with qualifications, 2018 (%)

Qualification level	Count	Additional income
No qualification	34,593	0
Level one to three	106,920	2
Level four to six	104,367	21
Bachelor's degree	21,066	4
Post-graduate qualification	9,336	13

5.7 Professional occupations

The final occupation, professionals, have substantially higher qualifications than the other occupation groups. This also corresponds to high incomes for the highly qualified workers. Of all of the occupation groups, professionals have the highest return for bachelor's degrees and post-graduate qualifications. Workers with post-graduate qualifications earn an average of 52 percent more than workers in the professional occupation group with no qualification.

This reflects the fixed qualification barrier to some high-income jobs in this occupation group. This highlights that qualifications are, and should continue to be an area of importance for individuals seeking a career as a professional, depending on their career objectives.

Table 12 Additional income of professionals with qualifications, 2018 (%)

Qualification level	Count	Additional income
No qualification	12,645	0
Level one to three	83,088	13
Level four to six	85,464	25
Bachelor's degree	194,052	36
Post-graduate qualification	172,314	52

5.8 Managers

Of all of the qualifications, managers have the highest rate of return. Each qualification yields an average higher income than all lower qualifications. As shown in Table 13, managers with a post-graduate qualification earn 33 percent more than managers with no qualification. This reflects the fact that managers appear in every industry, and manage workers with a very wide range of skills and qualifications. As managers typically earn higher incomes than their staff, this reflects the overall situation in the workforce, with higher qualifications corresponding with higher incomes.

Table 13 Additional income of managers with qualifications, 2018 (%)

Qualification level	Count	Additional income
No qualification	40,857	0
Level one to three	153,405	6
Level four to six	96,888	15
Bachelor's degree	75,987	22
Post-graduate qualification	56,022	33

6 Conclusions

The effects of qualifications on employment are wide and varied. The amount of impact qualifications have on incomes does not only depend on the qualifications themselves, but also the employment area following completion. When working in areas that are unrelated to the qualification, time spent earning the qualification may also be less profitable than obtaining a similar level of work experience.

This study highlights a range of possibilities regarding the New Zealand tertiary sector. It is possible that qualifications are being offered that are not meeting the needs of the labour force. It is also possible that the disconnect between study and work is so stark, that the available career opportunities are not appealing to graduates.

For individuals who do not wish to be a tradesperson, a manager or a professional, this report highlights the fact that work experience may be more valuable than qualifications. The time that would otherwise be spent in tertiary education may be better spent developing additional skills, which may be more suited to progression in their career path.

6.1 Further work required

This study is a high-level overview of the positions and values of qualifications, and the limited controls and detail result in a large quantity of unobservable differences in characteristics of individuals. Further work will be needed specifically in the areas where qualifications are not delivering higher incomes, to identify the causes of this situation.