

An analysis of the changing nature of work in New Zealand and its implications for older female workers.

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It is widely recognised that as people live longer the model of a working career is changing and will continue to change. The traditional three stage model of, education-work-retire is no longer viable. In particular, individuals are working longer and in different formats.

Older men are also affected. However, women face different challenges including an average longevity that exceeds that of men.

This paper draws together research and discussions on the issues affecting the future of work for women, particularly older women, 50+, in New Zealand. Time out from full time (FT) employment, restricted training and development opportunities, the gender pay, age and sex discrimination, all significantly impact on their working life and future career prospects, including financial resources. The constrained ability to provide adequate resources for their future may affect women's choice of when they can stop working.

1. Introduction

The fact that people are living and working longer is recognised globally. Considerable research has been conducted on the impact it will have on those starting their working careers, such as millennials. However, for many people, both men and women, the future is here. Many governments and individuals have recognised the necessity to work longer for several reasons which include: financial, skill shortage and individual's mental and physical welfare. The previously accepted three stage model of education-work-retirement, is no longer viable (Gratton and Scott, 2016, pp. 43-45). Increasing numbers of individuals are no longer taking retirement in the previously accepted and understood terminology, and are instead working for longer in different formats: part-time, bridge employment, portfolio careers and voluntary work.

This paper draws together research affecting the 'future of work' (FOW), particularly the impact on older women, 50+, in New Zealand. Women are 50% of the population, yet still, as Justin Trudeau, the Canadian Prime Minister, observed in his keynote address at Davos (2018), they continue to be an undervalued resource. Many of the issues discussed also impact men, but women face additional challenges. Time out from full time employment, restricted training and development opportunities, gender pay gap, age and sex discrimination, all significantly impact on their working life, future career prospects, and financial resources. The constrained ability to provide adequately for their future may affect women's choices of when they stop working.

The paper identifies issues where the changing FOW will have a significant impact. Finding discussion papers on the various issues was relatively easy. However,

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² An RPRC *PensionCommentary* is an opinion piece designed to provoke discussion on an issue of public significance. The views expressed in this commentary are the author's, not the RPRC's.

establishing what was being undertaken to tackle the impact of the FOW, particularly on women, was challenging. The cost of doing nothing could have a significant negative impact on New Zealand's economy, and the physical, social and mental welfare of its population. The impact of the increased expenditure on New Zealand Superannuation (NZS) will severely stretch New Zealand's financial resources. Many politicians have acknowledged that this issue needs addressing, whilst others delay, citing political ideology. Proposals have been made to extend the age at which workers can apply for NZS. Workers engaged in physical labour may find this delay in access to NZS an additional burden on their bodies, and there was a suggestion to make different qualification ages dependent on work type clerical or manual (Murphy, 2017). However, increasing the qualifying age for NZS would not counteract the issue of insufficient financial resources to meet demand and would add further discrimination.

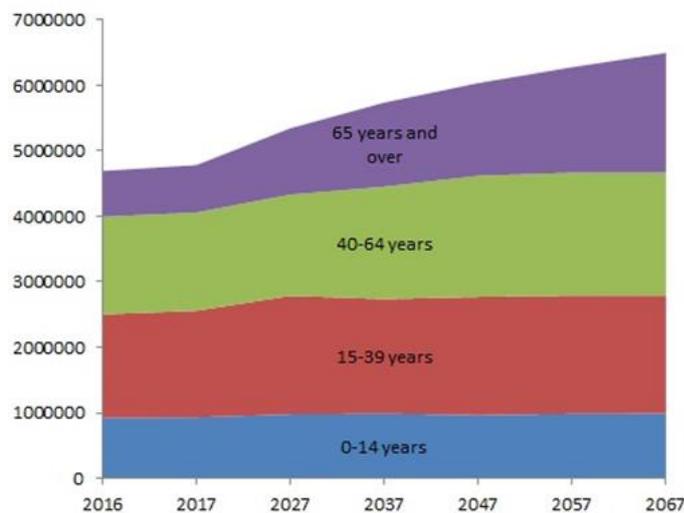
2. The future workforce

Like many countries globally, the composition of the FOW's workforce in New Zealand will be increasingly comprised of older workers. Globally, countries are concerned about the impact of the increasing numbers of baby boomers reaching retirement age and the impact on their finances. In New Zealand, the 2013 census recorded 603, 035 people as over 65. Expenditure on NZS has increased from 4% of GDP in 2014 to 4.3% by 2018 and is expected to exceed 5.2% by 2026. In real terms, that is \$10.9 billion in 2013/14 which rose to \$12.2 billion in 2015/16. In 2012, 50% of the New Zealand labour force was older than 42 years of age compared to 36 years in 1991 and 39 in 2001 (Alpass and Mortimer, 2007, p. 9). The concern is that there will be a labour shortfall, not only in skills but insufficient numbers able to generate adequate resources to meet the increasing financial demands of an ageing population. The impact on the workforce and on financial resources means that countries are using various strategies to encourage people, men and women, to continue working longer.

In 1992, Government policy changed the age of eligibility for NZS; it was raised progressively from 60 to 65 over a time frame of nine years, 1992 – 2001. In March 2017, the former Prime Minister Bill English, announced that starting from 2037 the age of eligibility for NZS would be lifted progressively from 65 to 67. Many countries, including several European states, are making similar adjustments to the retirement age. For example, in the UK, by October 2020, the retirement age for both men and women will rise to 66, and by 2028 it will rise to 67. It was argued that "New Zealanders are healthier and living longer so adjusting the long-term settings of NZ Super while there is time for people to adapt is the right thing to do" (English, 2017).

Even after the change was implemented, someone retiring at age 67 in 2040 would be likely to receive NZS for longer than someone retiring at age 65 today, because average life expectancy is increasing by about 1.3 years each decade (see Figure 1). However, this proposal will not be implemented by the Coalition government led by Prime Minister Jacinda Ardern (2017). Negative reactions to English's proposals centred on the impact of age on manual workers' bodies and the need to retire for health reasons. However, this argument needs to be considered alongside the impact of Artificial Intelligence (AI) and manual handling robots, which can alleviate the strain on manual workers. Also, some workers are choosing to continue working, often from necessity: to supplement their superannuation; and from choice: the desire to remain mentally active and retain their sense of purpose.

Figure 1: A comparison of age groups in the next 50 years



People are working longer for multiple reasons. The impact of the rising cost of living is forcing some people to work longer to supplement the NZS income. Insufficient resources, inadequate saving, the impact of inflation on savings and a desire to retain a sense of meaning and purpose in their life, all keep people working longer.

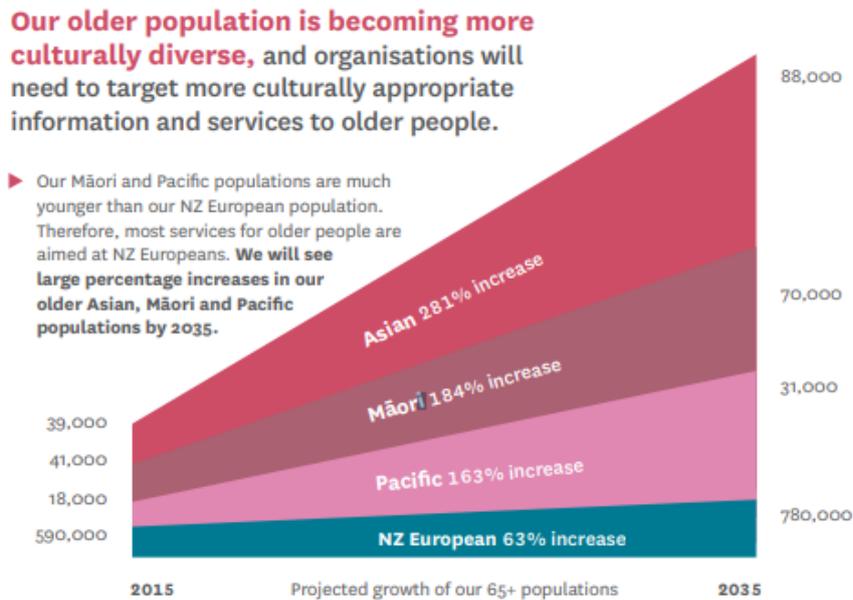
Women face a unique challenge. Frequently, they may have to continue to work longer due to insufficient financial resources. Research in Australia by the Workplace Gender Agency (2017), and by Westpac in New Zealand (Westpac, 2016) identified that, due to the gender pay gap, women not only had less superannuation contributions but also had less available income to save for their retirement (Parker, 2013). In addition, Westpac identified that 52% of men had other investments to help fund their retirement, compared to just 39% of women. Women have a longer life expectancy than men. Thus, they need more money in retirement than men, not less. For example, a 56-year-old woman born in 1961 can expect to live to 89 years but might live long enough to celebrate her 90th birthday.

This lack of finance may have a negative impact, restricting women's choices, due to their financial position, as to how long they need to work for pay. For young people entering the workforce, the need to ensure adequate financial resources in older age is an often neglected issue. Yet, the advice from competent financial advisers is that savings need to start at an early age. In New Zealand, many people rely on property investments as a source of income in retirement, but as the cost of housing restricts ownership, and the cost of renting increases, this source of revenue may decrease. In addition, as rental costs increase, it may either price those renters on restricted incomes out of the rental market and/or reduce available income for other necessities such as food and health care which may adversely impact health and well-being in later life.

3. Diversity

The impact of people working longer is that the generational mix of the workforce will be increasingly diverse, and older women will have a significant role to play. Figure 2 shows the balance in the workforce between the age groups over the next 50 years. The 15-39 and 40-64 age groups, the traditional ages of the working population, remain relatively static, but the 65 and over age group increases significantly, projected to more than double the 2016 figure by 2067. Generations have been described as an 'identifiable group that share birth years, age, location and significant life events at critical development stages' (Kupperschmidt, 2000).

Figure 2: The change in cultural diversity of the older population.



Although specific dividing lines are difficult, it is generally accepted that the workforce is comprised of the following groups: prior to the 1940s, the WWII or Greater Generation; 1940 to 1960, the Baby Boomers; mid 1960 to 1970 Generation X, and from mid-1970 to the mid 1990 Generation Y; and those born mid 1990 onwards and now entering the workforce, are known as Millennials. Studies have identified significant mean differences in values and interests across generations. However, the statistical effect sizes of the results are small, indicating that generational differences are a small component of the effect on personality, and are not going to have a significant effect on mature workers' activities. These findings have been replicated in studies undertaken in several different countries, such as New Zealand (Cennamo and Gardner, 2008), Australia (Nealon and Pleuss, 2008) and China (Sun and Wang, 2010).

Other characteristics such as education, work experience and work history may also play a larger role than just age (Foster and Meyer, 2016, p. 4-5). Specht, Egloff and Shmukle's (2011, p. 880) longitudinal research into the impact of age and life events on personality, indicates that individuals differ systematically in the changeability of personality, and that change occurs throughout a life's course. It is an important consideration in today's workforce where the mixture of generations is increasing to ensure that older workers, particularly women, are given a full opportunity to work effectively.

The FOW workforce in New Zealand will not only be older but more culturally diverse. As the population ages, it is projected that the ethnic balance of the older population will alter. In 2013, 88% were identified as NZ European, 6% as Māori, 5% as Asian, and 2% as Pacific. However, it's projected that by 2036, of those aged 65-plus, the number of NZ Europeans will increase from 608,000 to 974,000 people (60%), Māori will go from 44,000 to a population of 121,000 (115%), Asian peoples, comprising people who already live here and those who will migrate to New Zealand, will increase from 43,000 to 156,000 (260%), and Pacific peoples will increase from 19,000 to a population of 50,000, (160%). Figure 2 graphically illustrates this rise which will impact resources required and also services, for example multi-cultural services and the provision of information and services for older people whom English is not their first language.

It is interesting to note that in some Asian cultures, including Japanese and Chinese, traditionally, women with children are not in employment. This may restrict the

availability of older women in the workforce, and increase the strain on resources, including mental and physical health services, as older people's health declines. This might have a notable effect in areas of New Zealand where there are Asian communities, such as on the North Shore of Auckland. This tradition may change as young workers get older, and want to continue working, either from desire, or financial necessity, or both. This may change the landscape of the workforce and the retired population with the resultant effect on resources and thus requires monitoring.

As the workforce's generational and diversity composition changes, it will impact how talent is managed. Foster and Meyer observe (2014, p. 5) that each generation's behavioural preferences and work styles has been shaped by socio-economic factors, such as world events, behavioural preferences and educational experiences. This implies that different management styles should be applied to each generation. However, their research findings raise concerns over the true generational differences.

Foster and Meyer examined data from more than 1 million subjects. The comparison of generational and cultural differences considered that although there were some significant generation effects, the small effect sizes imply that other individual characteristics, including age, gender, education, culture, and work experience, may play an important part in predicating individual personality. Their results are supported by other research, such as Wong (2008). These results suggest that age does not make a difference to how people should be managed. Thus, as previous research into potential generational differences has found, organizations should look beyond generational membership and focus on the individual differences that are critical to job success (Foster and Meyer, 2012).

4. Technology

Technology is changing rapidly, affecting employment strategies, and possibly the need for companies restructuring including the need for individuals who can adapt rapidly. This will be discussed further at later point. In the 1920s, an engineer's half-life of knowledge, the time it took for his expertise to become obsolete was thirty-five years. Now, for a software engineer, it's less than three, unless they continually learn and up-skill. This suggests that the FOW requires all workers to learn continually.

Likewise, the change in technology will affect the age of entrepreneurs and start-ups. Traditionally, it needed decades in coding or engineering to launch a start-up. William Shockley was 45 when he established Shockley Semiconductor in 1955 (Fairchild Semiconductor, 2017). In contrast, Larry Page and Sergey Brin were 25 when they started Google (Google, 2018) and Mark Zuckerberg 19 when he created Facebook in 2004. However, the statistics show that older entrepreneurs dominate start-ups (Kautonen, 2008, p. 10-11). Despite the impression that this is the age of technological start-ups initiated by millennials, the fastest growing demographic in the world of entrepreneurship is by baby boomers. They utilize two or three decades of corporate experience their skills and passions to become 'creative entrepreneurs', people who build a business around their personal sense of aesthetics (Samuel, 2017).

The observation that the start-up landscape in the FOW will be a mixture of younger and older entrepreneurs reinforces Foster and Meyer's observation that focus should be on the individual irrespective of gender, not on generations, and generalisations (2014, p.4-5). Ideas come from all generations and genders. However, the provision of flexible working hours may be required to accommodate the physical requirements of older workers.

Women's talents, skills and adaptability are being underutilised to the potential detriment of the workforce. The proportion of women to men in technological employment is lower, although girls equal, if not excel boys in academic results (Stoet, 2017). Employing more women would fill many of the skill gaps in the workforce. In addition, their adaptability would facilitate changes as required.

5. Organisation and occupation transformation

Interestingly, research has demonstrated that loyalty and employee retention in an organisation is due to the opportunities for advancement and learning new skills which increases loyalty, regardless of generations (Deal, 2007). Accurately matching job to skills at selection, wages and benefits that are commensurate with an individuals' contribution ensures job satisfaction irrespective of the age of the worker (Tolbize, 2008). If older employees achieve higher job satisfaction, are managed in a positive manner, receive training and development, and don't experience age discrimination, they are more likely to work longer and not retire (Thomson, 2018). This will pose a challenge for companies in the future with a loss of talent from their workforce, unless they establish ways to value, and retain older workers. If we are to increase women's input into the workforce, we need to ensure that their skills and talents are valued.

From an individual perspective, it is important that people understand their personality, skills and attributes, and their interrelationship with others and environment. 'Research consistently demonstrates the critical role of personality in predicting performance across job levels, job families and organizations' (Foster and Meyer, 2014, p. 5). This is particularly important for older women whose identity frequently comes from being someone's wife or mother. Frequently, soft and hard skills utilized whilst not in paid employment, are underestimated, including by the individual concerned. Bringing up children requires continually reassessment of current, and learning new skills, information, technology and expertise. Women who have raised children are ideally adapted to today's workforce which is changing at an increasingly rapid pace.

Over many years, I have repeatedly met women who suffer from what I term 'shadow syndrome', or who feel 'invisible', who yearn to be recognised as an individual. People need to feel valued and often gain significant sense of identity from working (Thorsen, Jensen and Børner, 2016, p. 898). In addition, working could reduce the physical impact of aging because women feel healthier and happier, and it may mitigate (even reduce) the increasing financial and resource pressures on the health services from increasing numbers of ageing women. The effect of 'shadow syndrome' or 'invisibility' may have a detrimental effect on woman's health, mental and physical, with the resultant impact on healthcare costs, and is an area for more research.

The structure of organisations is changing. In the UK and the USA, working for large organisations (50+ employees) predominates and self-employment and working in small companies is the exception. In contrast, in New Zealand, smaller organisations of 1-20 employees predominate. Within larger organisations the structure is changing as organisations find themselves needing to increase their flexibility and swiftly respond to changing market demands of the domestic and international marketplace. This may require moving from the traditional hierarchal organisational structure to working in teams, hiring different talent and skills as required, moving from the traditional 9-5 working hours to working more flexibly, as a job requires, all of which brings new challenges to organisational management.

Charles Handy describes this organisational structure shown in Figure 3 as a shamrock (1989, p. 70-82). The first leaf is the organisation's core workforce, a leaner one than previously. The second leaf comprises freelance contractors who may be hired as required, for example projects which require a specialist skill. Freelance contractors may work for several different organisations, having what Handy terms a 'portfolio career' (1994). The specialist skills may be supplied to bigger organisations by small companies which predominate in New Zealand, or they may supply their skills and services to other small organisations.

Figure 3: The Shamrock leaf organisational structure.



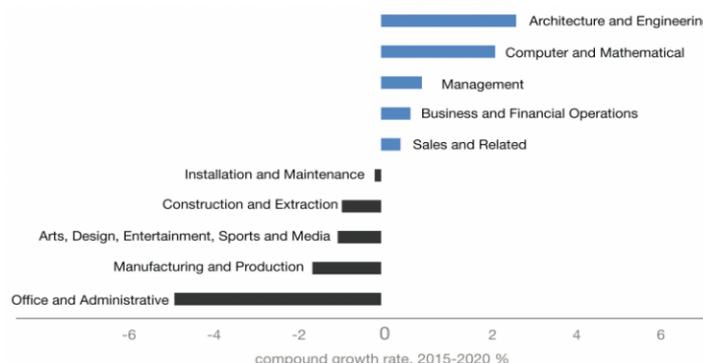
The third leaf is the flexible labour workforce, which includes many women, part-time and temporary workers, which facilitates an organisation’s ability to expand and contract a service to match customer demands, essential for flexibility in the FOW marketplace. There is a lot of discussion on the working practices in the FOW, but for many the future is here, now, and it is evolving rapidly. Fast food outlets, for example, have increasingly adopted flexible working practices, employing labour on flexible hours contracts so that labour can be used to effectively accommodate demand as required. The rate of wages in this sector, and the flexible hours that employers can adjust at will, means that to cover their household expenses many workers work two or three jobs.

In the FOW scenario, some sectors are dependent on flexible workers. ‘Zero hours contracts’ particularly in fast food restaurants, without any guarantee of regular working hours, and thus, no guaranteed weekly wage, have been in use for decades in some countries. These highlight worker’s vulnerability, mentally, physically and financially, in this sector of the workforce. Recognising this, the New Zealand government banned zero-hour contracts in 2016. Many large companies in New Zealand are outsourcing many departments and services, sometimes offshore. Talent development has become impersonal, leaving the individual to become self-reliant. Yet, the success of any organisation is reliant on the talent and skill of individuals and how they inter-relate.

6. Skill and education

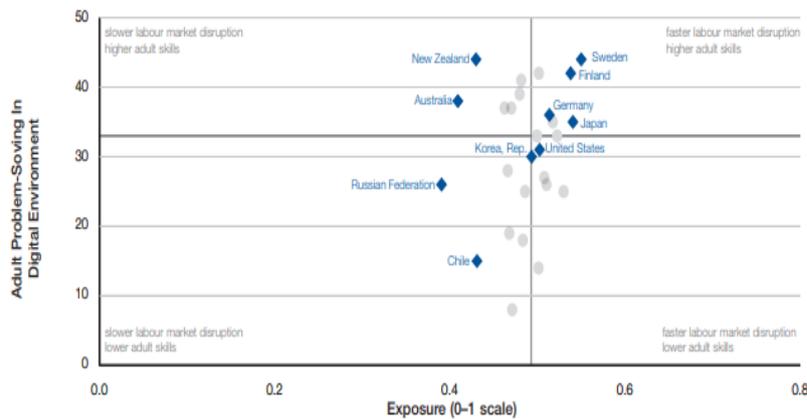
Not only will the structure of the workplace change in the FOW scenario, but also the type of jobs available. The skills and experience needed to fulfil those functions is unknown. As Figure 4 demonstrates, the balance of different job families will change over time. For example, in the time span of 2015 to 2020 it is estimated that there will be an increase in architecture, engineering computing and mathematical occupations, whilst office and administration, manufacturing and production roles will decline. The changes in some occupations, such as manufacturing, and production will be affected by the implementation of AI. As discussed later, this has implications on skills and training. Employers predict that the skills required to cope with the impact of AI focus is on basic literacy skills, and the ability to think and adapt to change; skills to which women are natural suited (see Appendix 1, Roos, 2015).

Figure 4: Job families declining & rising (World Economic Forum, Future of Jobs Report)



In the workplace, job families are rapidly changing. However, the capacity of adults to adapt is not uniform across countries. Figure 5 indicates that although the market disruption in Australasia is slower than in some European countries, the New Zealand and Australian workforces can adapt rapidly. Research by the World Economic Forum demonstrates that the powerful performance by countries in the top right quadrant, such as Sweden and Japan have been facilitated by multi-faceted, lifelong learning systems implemented by the respective governments. These countries continue to support and develop adult skills throughout the course of a lifetime, essential for flexibility in the FOW scenario. Similar strategies need to be implemented in New Zealand.

Figure 5: Adult Problem solving, adaption skills and exposure to Labour market disruption in selected economies.



Source: OECD PIAAC data; World Economic Forum.

Note: The PIAAC Indicator provides the share of adult population in the highest 2 levels of performance in problem solving in digital environments. This indicator was chosen to proxy adult skills and performance in increasingly digitalized work environments. The exposure variable captures the availability of the latest technology, economic complexity, pay and productivity measures as well as unemployment components.

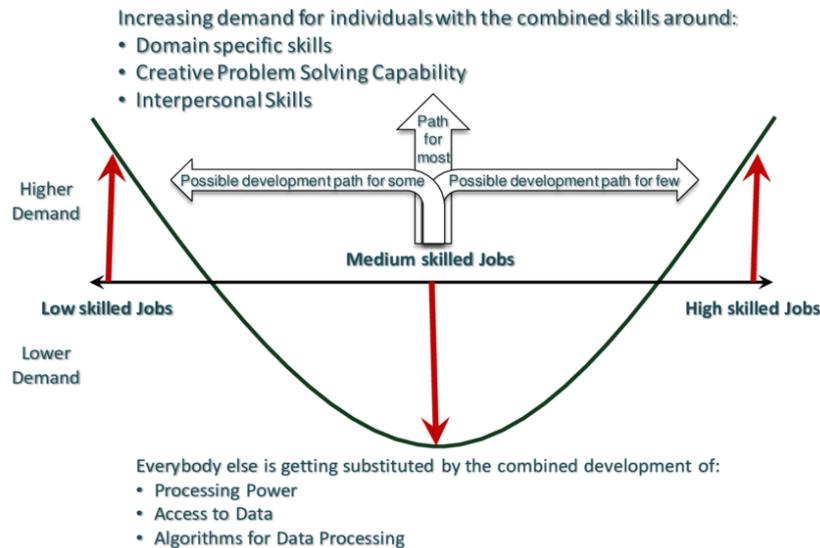
Women’s technical ability and creative, lateral thinking make them ideally suited to the skills required by the FOW workplace. A survey of industry leaders indicates the essential skills they consider are needed now, and in the future (Appendix 1, Roos, 2015). Both commerce and industry demand flexibility and continuous learning. Many women with children have demonstrated these skills particularly their capability to adapt and learn as they provide for their children’s, physical mental and spiritual development. In an environment of increasing complexity, there is a need to develop people able to be flexible, learn continuously and be adaptable to change, whatever their sex, age or educational background. Many women are ideally suited to this environment.

The full extent of AI’s impact on the FOW is unknown. However, in some sectors it may cause redundancies. It is causing unease in organisations and the workforce, mentally and physically, as sectors come to terms with its influence, and the impact of the changes. The projection of AI’s impact differs. For example, research estimates that approximately one-third of employment in Norway, Sweden, and the USA is vulnerable to computerisation (Pajarinen, Rouvinen and Ekeland, 2015, p. 6). However, Frey and Osbourne, quoted in New Zealand’s Future of Work Commission’s final report (2016), estimates that in New Zealand the figure is higher, that 46% of jobs are vulnerable. However, as AI develops, these figures may change. Pajarinen et al (2015, p. 5) consider that low wage and low skill occupations appear the most threatened.

Roos (2015) offers an alternative perspective. Roos categorises the workforce into three broad sectors: ‘low skills’, ‘medium skills’ and ‘high skills’, the biggest impact of AI could be on the ‘medium’ skills sector (Fig 6). As these jobs are de-skilled workers may be moved into jobs demanding a decreased skill level (Roos, 2015). For example, barristers employ clerks to read vast quantities of case law on their behalf, searching for the appropriate case law, so that the barrister can argue the appropriate legal point in court. These clerks could be categorised as a medium skilled job. Yet AI, capable of swiftly reading and discerning the appropriate case law, may replace these clerks. The demand for high skilled jobs may also increase; work which involves intuition, creativity, and

invention, social interaction, superior senses and highly developed motor skills. Skills in which women predominate.

Figure 6: The impact of AI on the workforce. © Roos. 2015



Planning the skills and education required in a world where some jobs have yet to be created, or even thought of, is hard. Thinking that the FOW workplace requires STEM (Science, Technology, Engineering, Maths) qualifications, parents often argue that if their children to obtain good and secure employment, they should aim for STEM subjects, and not study their preferences. STEM subjects are important to the technological workplace, subjects in which both genders are equally competent (Stoet, 2017). Yet organizations also need a balance of skills. In a workplace that is seeking to optimise resources, gender discrimination is not only inappropriate but neglects a valuable resource.

In today’s dynamic workplace the concept of safe and secure employment no longer exists. In a tech company, engineers are essential but as Michael Litt (2017) observes, they are only 15-25% of the workforce; other roles incorporate developing and marketing technical products and services. In Litt’s experience, the ‘truly irreplaceable jobs, not just of the future but of the present, are the roles that intermingle arts and science’. In addition to the accurate understanding of the fundamentals of technology, women often have the unique ability to translate complex technical issues into clear simple language, a powerful skill (Segran, 2014).

As this paper has observed, employment is no longer stable. Typically, in a dynamic environment, there is rarely one right answer. Increasingly, companies are shifting the focus of hiring STEM graduates to increase the balance of arts graduates, a sector in which women predominate. Trained to sift vast quantities of information and to debate situations and arguments, which are both subjective and ambiguous, arts graduates add a unique dynamism to a team, capable of considering a plethora of different options and outcomes to every situation (Segran, 2014). It has become evident that graduates from a balance of disciplines is required.

In an environment that changes continually, the essential skill is the ability to learn continually and to be able to understand the principles that are incorporated in the various disciplines. Women face the challenge that they are not seen to be good at STEM subjects often encounter discrimination. Women are equally competent at STEM subjects as boys. Results demonstrate that girls achieve higher grades in STEM subjects at school qualification level than boys, but they are underrepresented, often encountering discouragement from taking STEM subjects (Stoet, 2017).

7. Workplace discrimination

Although the balance of the workforce is getting older, many older workers face prejudice within a range of different organisations: government, employers, education and NGOs. In 2014, the Labour leader Andrew Little announced the Future of Work Commission proactively guiding future policy. The report was released at the Future of Work Conference in Auckland in March 2016. The commission's focus was directed at young people entering the workforce and will be implemented into government policy. However, many women face prejudice, both in the current workplace, and those who work beyond the current retirement age and will continue to experience discrimination unless attitudes change significantly. Employers need to proactively tackle the need to adapt so that older workers are both retained and recruited. As observed earlier, most employees retire because they feel that they are not valued, mentally and financially, by the organisation for whom they work (Thomson, 2018).

Foster and Meyer's (2012, p. 5-6) observation that organizations should focus on the individual differences that are critical to job success is an interesting point. In their search for new talent, organisations often prefer younger, inexperienced employees who need to be trained to older, frequently more experienced employees. Age discrimination persists despite legislation. One American study is but one of many highlighting the issue that many older workers face: pairs of resumes, one for a 57-year-old and the other for a 32-year-old, were mailed to 775 large firms and employment agencies across the United States. Although the resumes presented equal qualifications, the older job seeker received a less favourable employer response 26.5% of times when a position appeared to be vacant (Bendick et al, 1996, pp. 6-7). In an extreme example, Goldman Sachs partners are encouraged to move on after 5 years, or risk being "de-partnered" (Friend, 2017). In an era when the workforce's age range is broadening, this could have repercussions. Potentially, a substantial proportion of the workforce's intelligence, and skills, is being underutilised. This also has implications for women. Women who have returned to the workforce after caring for children, may want to work for longer than men, in the opinion that they still have energy and abilities that can be used effectively (Leyland, 2004). In addition, this might be essential if they have inadequate financial resources.

For women who have been out of the workplace, while caring for children, re-entry may be desired or essential for financial reasons, even while still caring for those children. Making a positive re-entry may be reliant on several factors including: education received, mental attitude, a positive attitude towards continuous learning prior to, and after, re-entry into the workforce. Employers who enable successful transitions back to work are more likely to benefit from women's reliability, work ethics, skills and knowledge (MacGregor and Gray, 2002, p 175).

Research into the perceived prevalence of age discrimination differs. Research cited by the Older Workers New Zealand (2018), considers that perceived prevalence of age discrimination is relatively low. In a survey of over 1,200 workers aged 55 years and over employed in organisations throughout New Zealand, respondents considered that recognition and respect for mature-age workers, and flexible work options, were the most important HR practices. Many organisations provided flexible working arrangements and performance appraisals. However, the findings also indicated concerns that managers' biases affected decisions regarding mature-age workers. One in four respondents considered that the value of older workers in their organisation was not strongly appreciated, that is 25% who do not feel valued.

Not being appreciated is one of the major decisions for older workers deciding to stop working (Thorsen, 2016, pp 891-892). In contrast, Diane Maxwell, the Retirement Commissioner, observed that many older workers, 50+ were concerned because they considered that they were unlikely to be re-employed if they lost their jobs. One employment agency admitted that they refused to send employers the CV of anyone over 50 (Stock, 2016). MacGregor and Gray also observed that employers had biases

against older workers, and that older workers had encountered age related discrimination (2002, p 174). The 25% cited by the Older Workers website, which is providing a reemployment source for older workers, may underestimate reality.

As educational establishments consider which courses/subjects should be offered appropriate for future jobs, the most effective means of facilitating courses, and the attitudes of the lecturers towards students, older workers and students may be prejudiced. As the diagram in Figure 4 of the changing face of job families demonstrates, the need for different families is changing: different skills and knowledge than previously planned will be needed. Using this information, educational establishments need to consider not only which qualifications to offer, but how to develop the ethic of lifelong learning, in both educational establishments and in the workplace.

There is a tendency to neglect older workers assuming that they cannot, and do not want, to learn (MacGregor, 2002, p, 174). Financial grants are available for students of all ages. However, financial funding of Educational establishments tends to focus on young rather than mature learners. The latter may continue learning whilst working, or caring for children, often part-time which affects demand and in consequence the establishment's financial revenue. Thus, fewer courses are being funded, decreasing opportunities available. If alternative learning strategies were available it would benefit employees and older workers alike, including women.

In a country where small businesses predominate, the challenge is to connect not only older workers with the appropriate courses, to develop skills and knowledge required, but also to connect educational establishments with business to ensure that the appropriate training is provided. Technology has enabled access to online courses, MOOCs (Massive Open Online Courses) which can be blended with offline learning (World Economic Forum, 2017). However, the uptake of these courses tends to be by people with College and University degrees, and completion rates are low. In addition, older workers with limited computer literacy skills may feel excluded. Uptake could be increased by two means. Firstly, by extending the range of courses available, incorporating different learning methods which may encourage engagement and completion. Virtual reality is enabling a diverse range of disciplines which use physical skills to solve problems, such as doctors, nurses, electricians and plumbers, to learn and up-skill. Extending the range of courses and training available may require constant and consistent liaison between educational establishments, industry and training providers. Secondly encouraging mature workers to adopt life-long learning as the norm, not the exception and by improving their computer literacy skills. This may be facilitated by employers' encouragement and a change in the attitudes of training providers. Further research into providing the effective means of up-skilling and retraining older workers is required.

Universities are recognising that the workplace is changing and focussing their careers' services accordingly. In 2017, the University of Auckland's Careers and Education Service (CES) hosted its first Future of Work Conference, bringing together students, academics and professionals from the University. The aim was to prepare attendees for a future that will bring lots of changes, challenges and possibilities of a dynamic workforce. Although the number of mature students taking first, and second degrees is increasing, and it is the biggest growth area, marketing predominately focusses on younger students, albeit with the odd exception. The discussion regarding the impact on older workers, particularly women, is minimal.

Mature students may face challenges from the educational establishment. The reaction of University lecturers to mature students, especially to women is variable: some fail to recognise mature students' needs, whilst others are supportive. This inconsistency has the potential for some students to become disengaged; even though mature students are often highly focussed, rarely submit assignments late or request extensions, frequently challenging lecturers' assumptions and thinking on a subject (Johnson, 2015; Pryor, 2012).

8. Conclusions:

It has been identified that the age parameters of the workforce are changing. Utilizing AI can support the workplace by supporting any shortfalls in the workforce. The increasing use of AI may also require the retraining of those whose roles may be at risk. However, what is evident is that the older sector of the workforce, especially women, capable of working in some capacity, is not being utilized effectively. It would be a waste of a valuable resource and increase the burden on the support sector. As this paper indicates, it is evident that consideration has been given to the subject of the FOW but the focus is on young workers. Whereas the older worker, particularly women, appears to have been omitted from the equation.

This paper has drawn together some of the complex, interrelated issues related to the future of work for mature women and, identified several areas for further research and action. Steps are being taken to address some of the barriers women face in the workforce, for example, ageism, gender and pay. Organisations are seeking to change work practices and discussing pay differentials, electing more female Board members and implementing measures to retain older workers at every level of an organisation. However, the rate of change needs to increase at both government policy and at an organizational level. This could be assisted by considering the following points:

- Identify where women can effectively contribute to the workforce and implement effective strategies to reintegrate women into the workforce, including 1:1 support.
- Identify a means to adjust the gender pay gap, and the resultant gap in disposable savings to fund periods of non-working.
- Identify suitable training methods of skills to suit the current workforce in preparation for the changes in the workplace.
- Provide training to reduce perceived biases, and managers' age-discriminatory behaviour.
- Focus on redesigning jobs to accommodate the needs of mature-age workers, including flexible work practices, development and retraining, with the resultant potential benefits.
- Research the psychological impact on women's health due to 'shadow syndrome'.

Appendix 1

Skills desired by employers (Roos, 2015, MIT PIE Manufacturing Survey, 2012–2)		
Hard Skill	%	
Basic Skills % Demand Basic reading (ability to read basic instruction manuals)	75.6	
Basic writing (ability to write short notes, memos, reports less than one page long)	60.5	
Basic math (ability to perform all of math categories below)	74.0	
Addition and subtraction	94.4	
Multiplication and division	85.6	
Fractions, decimals, or percentages	77.9	
Require basic reading, writing, and math	42.4	
Require use of computers several times per week or more frequently	62.3	
Ability to use word processing software or ability to search Internet for information	41.7	
Extended Skills Extended reading	52.6	
Extended writing	22.1	
Extended math (ability to perform any of three math categories below)	38.0	
Algebra, geometry, or trigonometry	31.7	
Probability or statistics	14.0	
Calculus or other advanced mathematics	7.3	
Extended computer	41.9	
Use CAD/CAM	28.4	
Use other engineering or manufacturing software	29.2	
Ability to write computer programs (such as program a CNC machine for a new piece, etc.)	18.6	
Unique skill	25.9	
Soft Problem-Solving Skills	% Reporting 'very important'	% Reporting 'moderately or very important'
Cooperation with other employees	81.2	99.3
Ability to evaluate quality of output	71.0	95.8
Ability to take appropriate action if quality is not acceptable	76.3	97.7
Ability to work in teams	64.2	91.1
Ability to learn new skills	50.1	89.3
Ability to independently organize time or prioritize tasks	45.6	84.4
Ability to solve unfamiliar problems	38.8	83.0
Ability to critically evaluate different options	35.7	74.1
Ability to initiate new tasks without guidance from management	35.2	80.9

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