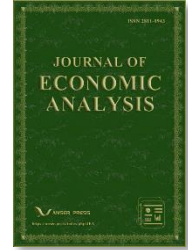




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How National Lockdown Restrictions Impacted the New Zealand Female Workforce: A Review

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ABSTRACT

The COVID-19 pandemic has changed the everyday ways of life across the world. The objective of this study is to understand the impacts of nationwide lockdown restrictions on female workforce of New Zealand. To conduct this study three subsets were selected: working mothers, essential workers and women in high-risk industries. New Zealand has a gender segregated workforce, and more women on the frontline as essential workers who faced risks from COVID-19. A quantitative approach based on secondary data published by the Government of New Zealand was employed in this study. The analysis was carried out under three themes: family wellbeing, essential workers and women in high-risk industries. All the themes point to the fact that the working women of New Zealand indeed have been critically impacted compared with working men.

KEYWORDS

COVID-19; female workforce; essential workers and lockdown

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1. Introduction

The COVID-19 pandemic has fundamentally and perhaps permanently changed everyday ways of life across the world. The direct health implications of the pandemic are profound. Hundreds of thousands have died, and millions have tested positive for COVID-19 (World Health Organization, 2020). Overnight, governments had to lockdown their countries, shutting down schools, higher education institutions, workplaces, borders, day-care centres and many other operating structures. As a result, humans had to adapt as their day-to-day lifestyles were disrupted. People had to start working remotely while teaching children how to learn online, no more social gatherings, no more games, masks were the new norm, parents now had to take up the burden of both educating and nurturing their children, some calling for desperate measures. For many households, these changes caused financial stress, inadequate space for work and study, higher childcare demand and work-family conflicts (Clark et al., 2020). Women around the world were significantly impacted by these changes, especially working mothers whose wages decreased while childcare costs increased during this time (Alon et al., 2020).

Amidst the economic, social and health disruptions from COVID-19, women have been vital to the fight against this pandemic. Women make up most of the workforce in industries which have been hit hard by the coronavirus lockdown, for example, aged-care workers, childcare workers, disability support workers, community service officers, checkout operators, nurses, and sex workers (UN Women, 2021). COVID-19 was declared a public health emergency of international concern and a global pandemic by the World Health Organization on March 11, 2020 (World Health Organization, 2020). With the spread of this virus came the intensive lockdown measures taken by governments across the world, creating interruptions to daily life. According to UNICEF (2022), the roughly 70% of the front-line worker are women representing professions such as nurses, midwives, community service workers and flight attendants. Stats NZ (2020a) reported 56% of essential workers of the New Zealand work force are women and hence leaving them in a vulnerable situation in relation to COVID-19. Ministry of Health (2021) included supermarket workers under essential worker category along with healthcare workers. For this reason, the study focuses on the female workforce of New Zealand. New Zealand confirmed its first COVID-19 case on 28 February 2020 (Cooke & Chumko, 2020) and in March 2020 the whole country went into a strict Level 4 lockdown.

The problem this study addresses is the gender impacts of COVID-19 in relation to employment in New Zealand. While most people's livelihoods and work lives were and are still negatively affected by the pandemic, the New Zealand government has been trying its best to eradicate gender discrepancies while also avoiding an economic crisis. However, there is still an over-representation of females in low-paid jobs on the frontline of COVID-19.

The data on working mothers is a subset under the female workforce. In every country that has been studied around the world, women, regardless of employment status, spend more time in caring for children and performing other household duties than men do (Carlie, 2020). Aguiar and Hurst (2007) found that even though there had been an increase in the number of women in the workforce in Europe, the USA and Australia compared with earlier years, working mothers now devote more time interacting with their children than they did earlier as well. With the pandemic spreading across the globe, many countries had to close schools, lay off employees and many parents had to work from home while taking care of their children. As a result, caregiving obligations increased with mothers having to take charge more than fathers. As discussed above, most of the countries around the world had implemented harsh lockdown procedures during the COVID-19 pandemic. In this context the research objective of this study is to determine how nationwide lockdown restrictions impacted the female workforce of New Zealand by analysing it in sub-sets. (Example: working mothers, essential workers and women in high-risk industries). The research question under investigation in this study is how the COVID-19 pandemic impacted the employment of women in New Zealand, and what are the gender inequalities that have been impacted by the pandemic?

2. Literature Review

Prickett and Smith (2020) found that in New Zealand, over 52% of working mothers and nearly 47% of working fathers reported an increase in family demands. As shown in the numbers, the increases in family demands were larger for mothers than for fathers, resulting in working mothers reporting that family demands, and job demands were in conflict. Essential workers are the second sub-set of data that was analysed. Under this sub-set essential worker roles like caregivers, midwives, nurses and a few other roles were studied. An essential worker can be defined as a worker whose services are of vital need for the community (MBIE, 2021a). With COVID-19 spreading across the country, most healthcare workers were recognised and valued as front-line fighters battling the pandemic. However, some essential worker roles have been completely overlooked and undervalued because these roles are invisible. Roles such as caregiving, disability workers, social workers and even midwives at times have been overlooked as essential workers. These again are roles heavily occupied by women. Hence, these female essential workers will make up another subset that will be analysed in this research. Industries such as tourism, education and training, air-transport and retail and wholesale are some of the industries most heavily impacted by the COVID-19 pandemic. Employees in these industries are also largely female workers, yet again impacting the female workforce of New Zealand harder than the male workforce. According to statistics published in December 2020, 7,772 jobs were lost in the tourism industry across New Zealand, while industries such as air transport and retail have lost between 1,000 - 5,000 jobs since COVID-19 happened (Stats NZ, 2021). Therefore, this will be the final subset studied as part of this objective.

2.1. Women in the New Zealand Workforce

Women have historically fought fair and square in times of war and crisis. Stats NZ (2019) reported that in December 1943, 228,000 women were employed in New Zealand. Fast forward to the 21st century, there are currently 1.26 million women in paid work, compared with about 1.40 million men (Stats NZ, 2019). Stats NZ reported out of the 1.26 million population of working women, 352,700 are working mothers, representing around 28.6% of all working women. Immediately, the numbers may look convincing and fair. However, when compared with working men, women have almost never had the upper hand in terms of the New Zealand labour market. Table 1 shows that women always had lower employment rates compared with the male workforce of New Zealand, and COVID-19 only made things worse for them.

Table 1. Employment Rates, by Gender (December 2018 to December 2020).

Quarter	Men	Women
December 2018	72.7%	63.2%
December 2019	72.5%	62.7%
December 2020	72%	61.7%

Notes: Stats NZ, 2021a.

The data given in Table 1 shows the employment rates for men remained relatively stable, with a slight decrease of 0.7% from 2018 to 2020, while the employment rate of women significantly decreased by 1.5%. The percentage decrease for women is almost double that of male, showing that the pandemic has had a greater impact on women compared to men. The percentage reduction for women employment rate from December 2018 to December 2019 is 0.5%, and the same rate reduction from December 2019 to December 2020 is 1%, showing a 100% increase. The year 2020 was the first year of COVID-19 pandemic and this reduction clearly attributes to the impact of the country lockdown.

The New Zealand labour market is heavily gender segregated and therefore women were more likely to be on the frontline as essential workers putting themselves even more at risk of being exposed to Coronavirus (Ministry

of Women, 2019). Women were also more likely to be employed in the industries and occupations that have been severely impacted by COVID-19, such as accommodation and food services, retail, healthcare, and social assistance, where women make up more than half the workforce (Stats NZa, 2020). Furthermore, women are more likely to be in casual employment in these industries, putting them at an even vulnerable state financially. According to Stats NZ (2021d), the following are the main industries women are working in healthcare and social assistance, professional, scientific, technical, administrative and support services, education and training. These are also the very industries that were negatively impacted by the COVID-19 pandemic.

2.2. *The “Motherhood Gap”*

As suggested by Correll, Bernard and Paik (2007) the “motherhood gap” may account for inequalities and unfair decisions around pay and promotion opportunities for working mothers. Above study identifies that those women in the workforce who are mothers, experience additional disadvantages in their careers compared with male counterparts and women with no children. The current study also explores the impacts of working mothers faced compared with working fathers when COVID-19 started to spread across the country.

A good example to validate this statement is shown in the study by Collins et al. (2020), in which, fathers in the United States appear not to have reduced their employment contributions as much as mothers. Instead, mothers have scaled back their hours to meet new caregiving demands. The same study also suggests that even though states may come out of lockdown restrictions, working mothers may still be at high risk of job loss as schools and day-care centres may not reopen or resume normal schedules as employers will be facing historic recession and may look for ways to cost cut. Similar trends were further investigated in this study in terms of New Zealand’s workforce.

2.3. *Gender Inconsistencies During COVID-19 (talks about working mothers)*

With the spread of the pandemic, many countries had to close schools and lay off employees. Many parents also had to work from home while taking care of their children. UNESCO (2020) found that by the end of May 2020, nearly 150 nations had country-wide school closures, affecting two-thirds of children. When this happened caregiving obligations increased, resulting in the need for women to take charge rather than men. A study conducted by Reichelt, Makovi and Sargsyan (2020) found that during the global pandemic in the United States, fathers were less likely to reduce their work hours than mothers, reinforcing the distribution of childcare responsibilities already existing in most families. Stats NZ (2020b) stated that the impact of COVID-19 on New Zealand jobs during the June 2020 quarter was disproportionately felt by women, where during this period out of the 11,000 people who had lost their jobs, 10,000 were women. Even with 90% of the unemployed population being women, the New Zealand government still decided to invest more in construction and physical infrastructure, rebuild roads and trade apprenticeships (Ryan, 2020); and this part of the economy is very male dominated. Therefore, it is quite safe to state women in New Zealand are continuing to face greater disadvantages than the working male population.

2.4. *Unemployment and Inequality*

As a result of the COVID-19 pandemic, the New Zealand government re-defined the term “essential worker” to include not only care and health workers but also supermarket workers (Masselot & Hayes, 2020). These workers, the majority of whom are female, receive very low wages that cannot even meet their basic living costs. In the same study, it was also identified that women have carried the double burden of part-time employment and unpaid work during lockdown, but the pandemic has also enabled men to perform unpaid care work. In turn, the increased domestic work performed by men during COVID-19 may help shift the long-term dependency to short-term requirements, making a positive contribution to gender equality. Chen (2020) found that Chinese women spend 2.5

times more time performing unpaid care work than men, on average almost four hours each day. Two out of three women said that this was more tiring than office work. This situation increased when schools and businesses closed, as women working from home also often had to juggle additional duties. International literature was reviewed to find out if unemployment rates across the world saw a shift due to COVID-19, and as confirmed in this literature, it is safe to say that unemployment rates across many countries increased with women's unemployment taking a heavier hit than men's unemployment. This was also the case for New Zealand.

2.5. The Effects of COVID-19 on Childcare Needs

Hipp and Bünning (2021) carried out a study in Germany where they surveyed 4,400 participants from across the country aged 25 to 54 years, who also had at least one child in their care. The question they were surveyed on was whether the lockdown restrictions made any changes to their day-to-day childcare routines and employment. It was found in this study that women were slightly more likely than men either to be working reduced hours or not to be working at all during the pandemic. While the division of childcare was more equal in the early stages of the lockdown, mothers still carried out considerably more unpaid work than fathers.

In another study conducted by Johnston et al. (2020) in Australia, data was collected from Australian households with children under the age of 15 to determine the average differences between men and women in terms of the hours spent per week on childcare prior to and during the pandemic. In this study it was found that women in Australian households reported spending at least 43 hours extra per week on childcare during the pandemic than men. This finding is relevant to this study as one of the objectives of this paper is to determine the impacts of COVID-19 on working mothers. However, no relevant data or any similar study carried out in New Zealand was found, resulting in identifying a research gap.

2.6. Mental Wellbeing of Working Mothers

During such unprecedented times, psychological consequences, distress and mental health problems within society are likely to occur. For example, Peyzold et al. (2020) reported that during the Ebola outbreak in Africa and SARs outbreaks in Asia, such problems were widely experienced. With COVID-19, although psychological distress was experienced by different groups, it was found in Germany that women were reporting higher rates of psychological consequences resulting from COVID-19 than men (Peters, 2021). This applied especially to working mothers. This research highlighted the heterogeneous responses of couples' divisions of labour during the pandemic based on who had had reduced working hours, become unemployed, worked from home, as well as varying educational levels. Thus, it was found that women engaged in housework and childcare to a higher degree than men, as this behaviour aligns with and maintains their gender role identity. Due to gender-based division of labour, women and especially working mothers have been pushed to shoulder the bulk of additional housework and childcare, thereby reinforcing gender inequality. This led women in Germany to experience mental health issues as they had then reverted to being the dependent housewife rather than the independent working mother.

In the UK, many women in the hospitality industry lost their jobs even after lockdown restrictions were relaxed. This was because the hospitality industry required employees that were able to commit and be flexible with their working hours. However, this was near impossible for the working mothers in the UK as day-care centres and schools continued to be closed in order to stop the spread of the virus. Due to this, working mothers in this industry were forced to be stay at home mums. Dashper's (2020) study also found that hospitality employers found working mothers or young women starting a new family, impossible to retain as they were unable to concentrate equally on both family and career as they would need to make sacrifices in at least one area, and employers did not want it to be their career as this would then affect their businesses. As a result of such gender inequality issues, young women

and working mothers experienced significantly increasing anxiety, resulting in the depression rate in the UK increasing by 2% in just in the first three months of the initial lockdown (Department of Health and Social Care, UK, 2022).

The above literature review section highlights that women are more probable to expose themselves to COVID-19 as frontline essential workers. Although a significant amount of literature is available on the impact of COVID-19 on the workforce in general around the world. However, there is a gap in the literature in terms of how nationwide lockdown restrictions specifically impacted the female workforce of New Zealand. Additionally, there are no in-depth and focused investigations on the areas specifically dominated by the female workforce, such as working mothers, essential workers and women in high-risk industries. Therefore, there is a need for further research to determine the impact of nationwide lockdown restrictions on the female workforce of New Zealand.

3. Research Method

A data review approach with quantitative analysis was adopted in this research. The information and data related to this study were extracted from online published reports by New Zealand Government. The main sources of data for this study are from Stats New Zealand (Stats NZ), Ministry of Business, Innovation and Employment (MBIE), the Inland Revenue Department (IRD), the Ministry of Women (MoW) and the Ministry of Social Development (MSD). The government organisations follow accepted methods in data collection and hence assures the quality of data and these data are current, accurate and reliable. The reports used in this research were compared with international reports published by other countries' governments (Canada, USA, Australia and the United Kingdom) to ensure that most countries were experiencing similar impacts on their labour forces. These reports were also accessed through those specific countries' official government websites (Examples: Australian Bureau of Statistics for Australia, Statistics Canada for Canada, Census Bureau for USA and Office for National Statistics for UK). By comparing the reports of New Zealand with international labour markets, not only was it advantageous to identify trends to support the research problem, but it was also helpful to identify other labour market discrepancies around the world that are yet to be faced by the New Zealand labour market. All the above factors made the data used for this research reliable and valid.

The reports were selected and shortlisted by filtering the correct date range. The date range of the data was from March 2019 to December 2021. The search was also narrowed down to gender demographics, pre and post COVID-19 reports and industry classifications. In order to ensure the validity of the data collected, Stats New Zealand runs checks for validity and consistency as responses to questions are captured.

A flow on approach was undertaken, and the analysis was situated within a realist theoretical framework. Data analysis was guided by the six steps proposed by Smith and Shinebourne (2012): 1) Reading/re-reading (understanding data and information), 2) Coding (identify themes and code), 3) Clustering (codes are grouped into common themes and subthemes), 4) Iteration (process of checking themes, subthemes and quotes), 5) Narration (story from the findings), and 6) Contextualisation (interpret the findings).

4. Results, Discussion and Analysis

The following sections analyse and discuss three main areas faced by working mothers namely family wellbeing during the lock down, female job loss and unemployment, and domestic violence.

4.1. Family Wellbeing during Lockdown

The following data used in this research were published in the March 2021 quarter by Stats New Zealand. When asked in the Survey of Working Life, to rate how well one's family was doing at present (on a 0-10 scale where 0 was

poor and 10 was excellent), 84% of people gave a rating of 7 or above with an average rating of 7.8 out of 10. However, sole mothers with dependent children who made up 27% of the surveyed population rated their family wellbeing more poorly (between 0-6). Additionally, the survey revealed that 32% of sole parents with dependent children reported experiencing workplace discrimination during the COVID-19 lockdown period with 20% of these sole parents being working mothers and the other 12 working fathers.

Furthermore, in the June 2020 quarter, the overall family wellbeing was sitting at 86.2% but in the March 2021 quarter the rate plunged to 84%, which was a 2% drop from what it was during the first COVID-19 lockdown period (Stats NZ, 2021c). The change in the overall life satisfaction rates from the June 2020 quarter through to the March 2021 quarter is illustrated in Figure 1 below. Although there is no strong evidence to suggest that the mother in the family unit experienced a lesser wellbeing in the family, there is statistical evidence to prove that the family unit as a whole has seen a drop in its wellbeing levels due to COVID-19 restrictions.

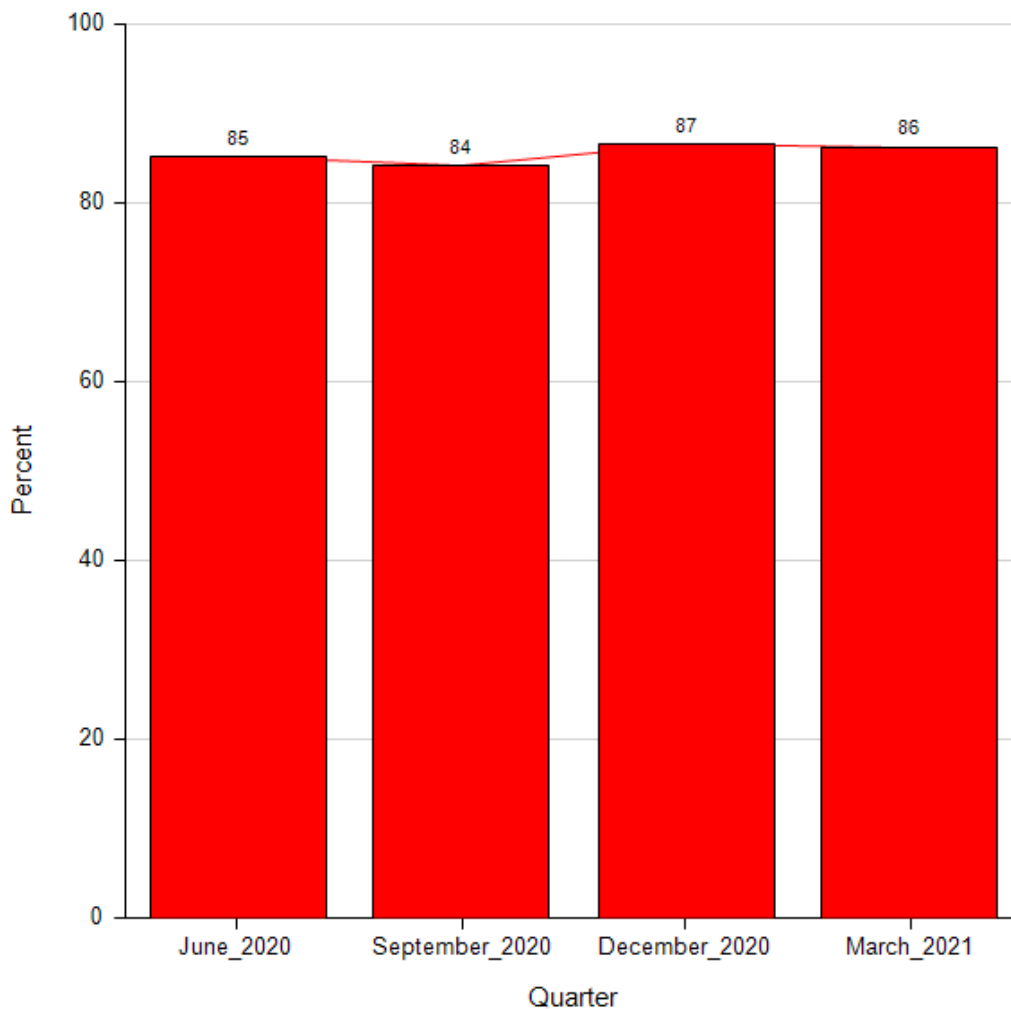


Figure 1. Visual Interpretation of Overall Life Satisfaction Rates (From June 2020 to March 2021).

Source: Stats NZ, 2021c.

4.2. Job Loss and Unemployment

The following analysis is based on data collected from Stats NZ (2020c; 2020d; 2021b; 2022). There was a 31,000 point drop in the employment numbers between the March and September 2020 quarters; and more than two thirds of these people (22,000) were women. Based on seasonally adjusted data, the number of unemployed

people increased by 30,000, 19,000 being women and the remaining 11,000 being men. During the quarter ending in September 2020, the overall unemployment rate rose from 4.0 to 5.3%. According to previous quarterly data, there has never been a quarterly increase so large. The rate at which women started to become unemployed was remarkably robust in the face of COVID-19 and the lockdown shock.

There was a total of 37,000 more unemployed people in June 2020 than in the previous quarter, an increase of 32.5%. The 37,000 increase in unemployment this quarter was the largest quarterly rise since 1986. The number of employed women fell by 14,000, while the number of employed men dropped by 8,000. The female employment rate was still sitting lower than the male employment rate. There was a 61.2% employment rate for women and a 71.8% employment rate for men. Figure 2 provides a visual interpretation of how the unemployment rate, segregated by gender, changed over the pre COVID-19 and post COVID-19 periods.

If compared with the same time the previous year (pre-COVID-19 times), the number of women working in key tourism industries declined by more than 8% in the June 2020 quarter. A few of the most important tourism sectors include accommodation, passenger transportation, travel agencies, sightseeing operators, and cafes and restaurants. Following the border closure to international tourists in late March of 2019, these industries were hard hit by the COVID-19 lockdown in March. As a result, these industries experienced a drop in the number of women employed, fewer hours worked, and lower earnings compared with the previous year.

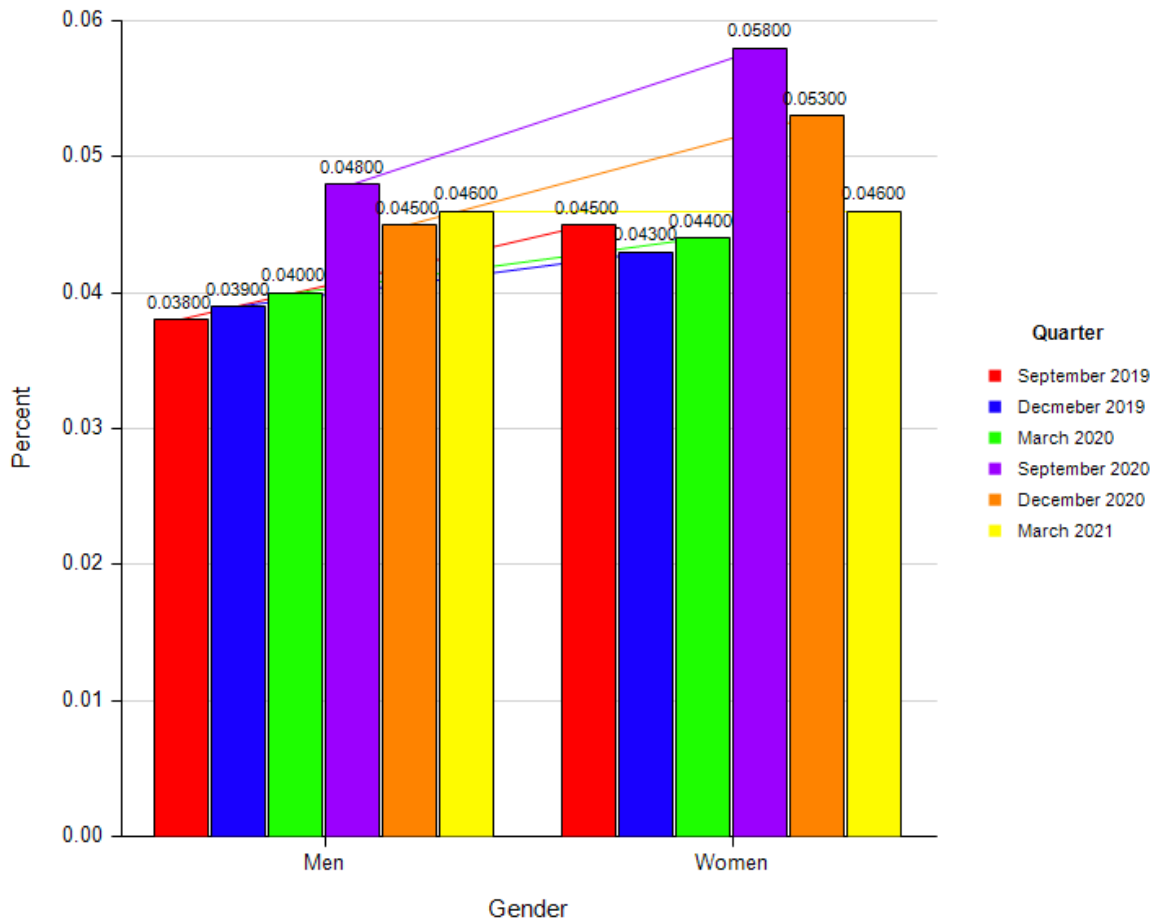


Figure 2. Visual Interpretation of New Zealand’s Unemployment Rate Pre, Mid and Post COVID-19 Times.

Source: Stats, NZ, 2020e.

4.3. Domestic Violence

Figures released by the Ministry of Justice (2020) show that since March 2020, when New Zealand was in alert level 4 lockdown, the number of family harm investigations carried out by the police were up every month until September 2020, compared with the year 2019. The total number of family harm investigations between March and September 2020 reached over 97,000 compared with the same period in 2019, which was a major increase of 84,500 cases. The domestic violence rates were so high this period that the media referred it to as “the horror year of domestic violence” (Gordon, 2021).

A survey published by the Ministry of Justice, New Zealand Crime and Victims Survey, found that women were more vulnerable to violence than men in New Zealand. Statistically speaking, women were 2.5 times more likely to experience intimate partner violence and three times more likely to experience sexual violence than men (Ministry of Justice, 2020). The average domestic violence rate of New Zealand is 16% across all New Zealand households (Vertical brown line in Figure 3) and compared with other genders, males are experiencing violence below the average rate of New Zealand’s domestic violence. All other genders experienced domestic violence significantly above the average percentage which demonstrates the impacts other genders face on top of the COVID-19 outbreak.

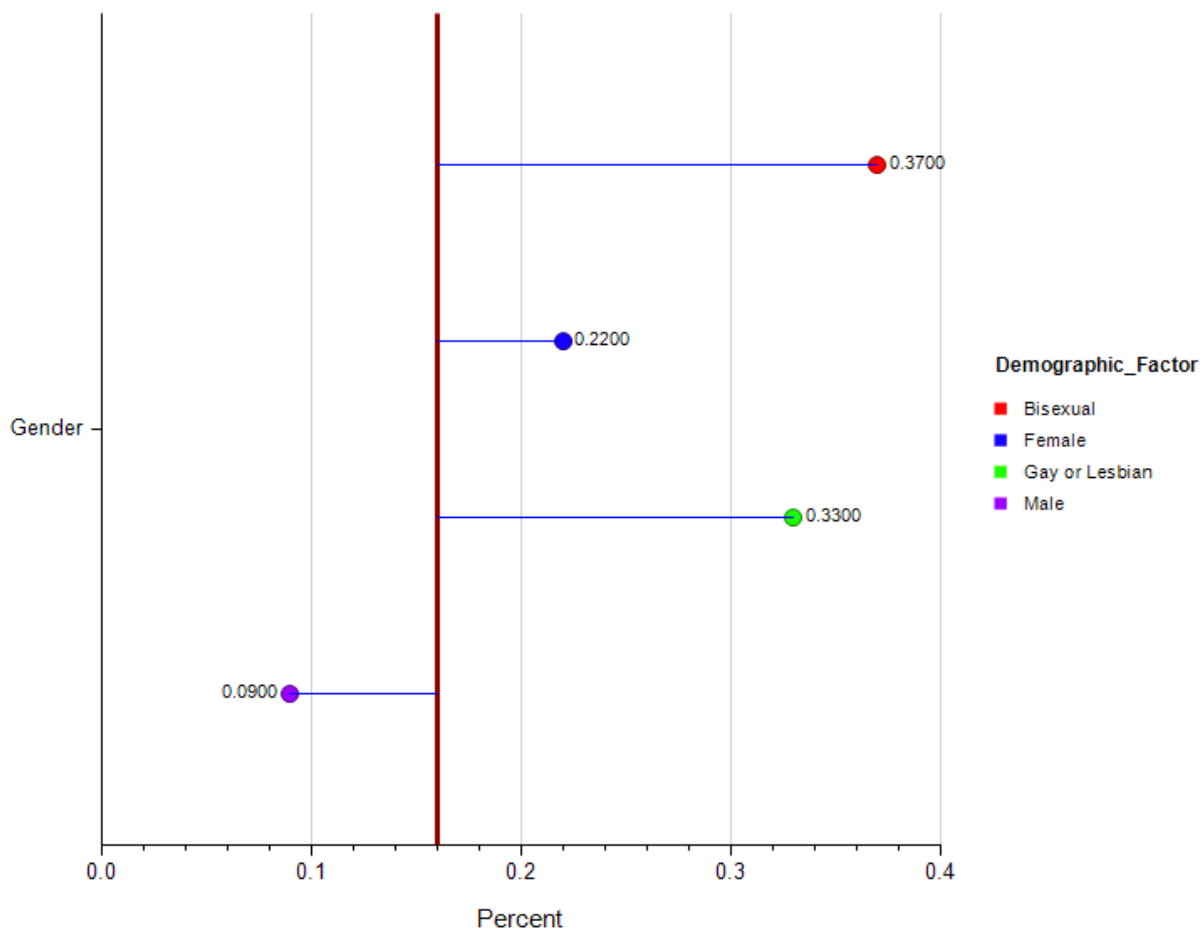


Figure 3. Visual Interpretation of New Zealand’s Rates of Lifetime Experience of Intimate Partner Violence Based on Gender.

Source: Ministry of Justice, 2020.

Sections 4.4 and 4.5 are dedicated to analyse and discuss issues faced by essential female workers and women in high-risk industries in New Zealand.

4.4. Essential Workers

Essential workers made a significant contribution to the success of New Zealand's response, both in terms of the population's wellbeing and in providing essential goods and services. This included doctors, nurses and medical staff, aged-care workers, security and border control employees, those working in supermarkets and related supply chains, security and border control employees, bus and transport drivers, delivery and courier workers, police force and cleaners in sensitive operations. Without these workers, the impact on the economy would have been severe. The Ministry of Health's list of essential workers under the COVID-19 isolation alert systems ensured provision of physical and mental health services, education, and government and financial services. In addition, many front-line workers for the production and distribution of food, essential construction, running of utilities and manufacturing and distribution of essential items were designated as essential workers. Statistics from the Ministry of Business, Innovation and Employment (MBIE, 2021b), summarised in Table 2, show the number of individuals who were designated as essential workers under Alert Level 4, and who worked for the population's wellbeing during lockdowns.

As shown in Table 2, more than half a million (529 000) people were identified as critical service workers. In addition to this group, another 139 000 essential workers worked from home. It was also identified that the majority of New Zealand's essential workers were also women, making up 71.3% of the 529,000 essential workers (MBIE, 2021b). This combined group comprised about 25% of the New Zealand workforce. Without the cooperation of this group of workers, the economy would have been paralysed.

Table 2. Essential Service and other Work under Alert Levels 3 and 4 (Year 2020).

Alert Level	Category	Essential Service	Non-Essential Service	Total
4	Going to work	529 000	NA	529 000
	Working from home	139 000	501 000	640 000
	Unable to work	457 000	1 019 000	1 476 000
	Total	1 125 000	1 520 000	2 645 000
	Category	Operational Service	Non-Operating Service	Total
3	Going to work	1 172 000	NA	1 172 000
	Working from home	507 000	NA	507 000
	Unable to work	829 000	137 000	966 000
	Total	2 508 000	137 000	2 645 000

Source: Ministry of Business, Innovation and Employment (MBIE, 2021b).

4.5. Women in High-Risk Industries

The most impacted industries from COVID-19 were the tourism industry, administrative and support services industry, arts and recreation services industry and the retail industry (MBIE, 2021b). Tables 3 and 4 show proportionately the workers by gender for the industries categorised as high-risk due to COVID-19 in New Zealand.

Table 3. Total Jobs Filled Based on Industry and Gender (Male).

Industry	Total Jobs Filled in Each Quarter (Male)		
	June 2019	March 2020	December 2020
Retail Trade	91 410	93 730	93 470
Accommodation and Food Services	61 600	63 140	59 870
Transport, Storage, Information Media and Telecommunications	84 330	82 980	79 270
Government, Arts and Recreation and other Services	119 110	123 640	125 790
Education and Training	52 310	47 270	51 850
Healthcare and Social Assistance	41 580	42 930	45 000

Source: Ministry of Business, Innovation, and Employment (MBIE, 2021b).

Table 4. Total Jobs Filled Based on Industry and Gender (Female).

Industry	Total Jobs Filled in Each Quarter (Female)		
	June 2019	March 2020	December 2020
Retail Trade	114 850	116 850	116 230
Accommodation and Food Services	91 540	93 080	87 820
Transport, Storage, Information Media and Telecommunications	42 320	41 220	37 370
Government, Arts and Recreation and other Services	123 230	128 840	133 510
Education and Training	144 720	131 850	147 650
Healthcare and Social Assistance	191 530	193 050	197 610

The above tables show that the high-risk industries were highly female dominated (Stats NZ, n.d.) during both pre and post COVID-19 times. These were also the industries that other countries also saw as highly affected by COVID-19. Countries like the US, UK, Australia and Canada had mainly female workers working in these highly affected industries.

So why is it common to see females in these industries? Why do labour markets not have a balance over gender demographics across all industries? This is where the theory of Gottfredson's Stages of Circumscription can be applied. In this theory Gottfredson understood that, at each stage, young people rule out jobs that do not match how they see themselves, through a process called circumscription (Gottfredson, 2019). For example: a young girl at the age of eight might look at herself and decide that she would like to grow up to be a nurse, as at this age she would have seen a few stereotypical roles in television and social media where the role of a nurse is mostly played by women, hence embedding in her mind that nurses are mainly females. This decision then leads her to continue her study relevant to that field, proving that her career decision was circumscribed.

As a result of such decision making at a young age, most individuals will continue to pursue that dream throughout their adult career. In other words, we are teaching our younger generation to limit their career options, which eventually leads to unbalanced segregation of labour markets in economies.

Tables 5 and 6 show the number of jobs lost in high-risk industries. Compared with industries like agriculture, forestry and fishing, construction, financial services which are heavily male dominated industries, the female population of New Zealand has suffered more job losses and income losses than their male counterparts.

Table 5. Change in Filled Jobs, by Industry, December 2019–December 2020 (Female Dominated Industries).

Industry	Movement
Accommodation and Food Services	-7,772
Administrative and Support Services	-5,340
Transport, Postal and Warehousing	-4,871
Arts and Recreation Services	-3,169
Wholesale Trade	-1,880
Information Media and Telecommunications	-1,543
Manufacturing	-1,448
Retail Trade	-1,341

Source: Stats NZ, n.d.

Table 6. Change in Filled Jobs, by Industry, December 2019–December 2020 (Male Dominated Industries).

Industry	Movement
Electricity, Gas, Water and Waste Services	1,286
Agriculture, Forestry and Fishing	1,540
Professional, Scientific and Technical Services	1,936
Financial and Insurance Services	4,166
Public Administration and Safety	7,630
Construction	8,563

Notes: Sourced from Employment indicators from December 2019 to December 2020 quarters (NZ Stats, 2022).

Figures 4 and 5 show that most of the male workforce of New Zealand is not employed in the highly COVID 19-impacted industries compared with the female workforce. A clustered heat map summarises the data according to a heat indicator (blue being the colder side, in other words variables that have a very low impact, and red being the hottest side, with these variables being the highly impacted ones). Figure 5 which is an indication of the number of females working in the highly impacted industries, does not have a hint of the colour blue. In other words, men are less employed in these industries than women, and this trend has been evident at least from the March 2019 quarter. On the other hand, the male heat map consists of cooler colours with minimal hot colours of the heat indicator, indicating that male involvement in the highly impacted industries was very low.

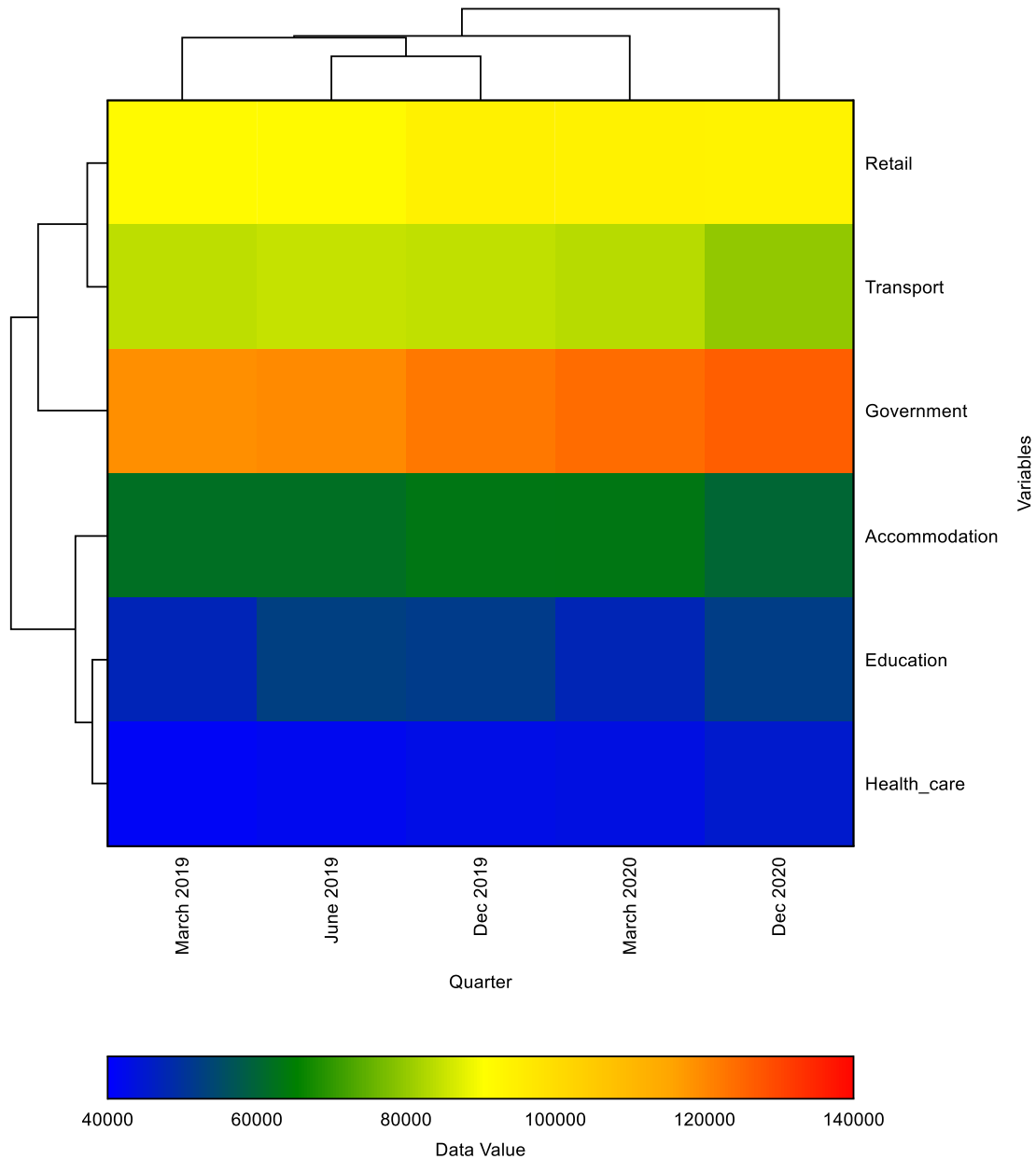


Figure 4. Clustered Heat Map of the Male Working Population in the Highly Impacted Industries.

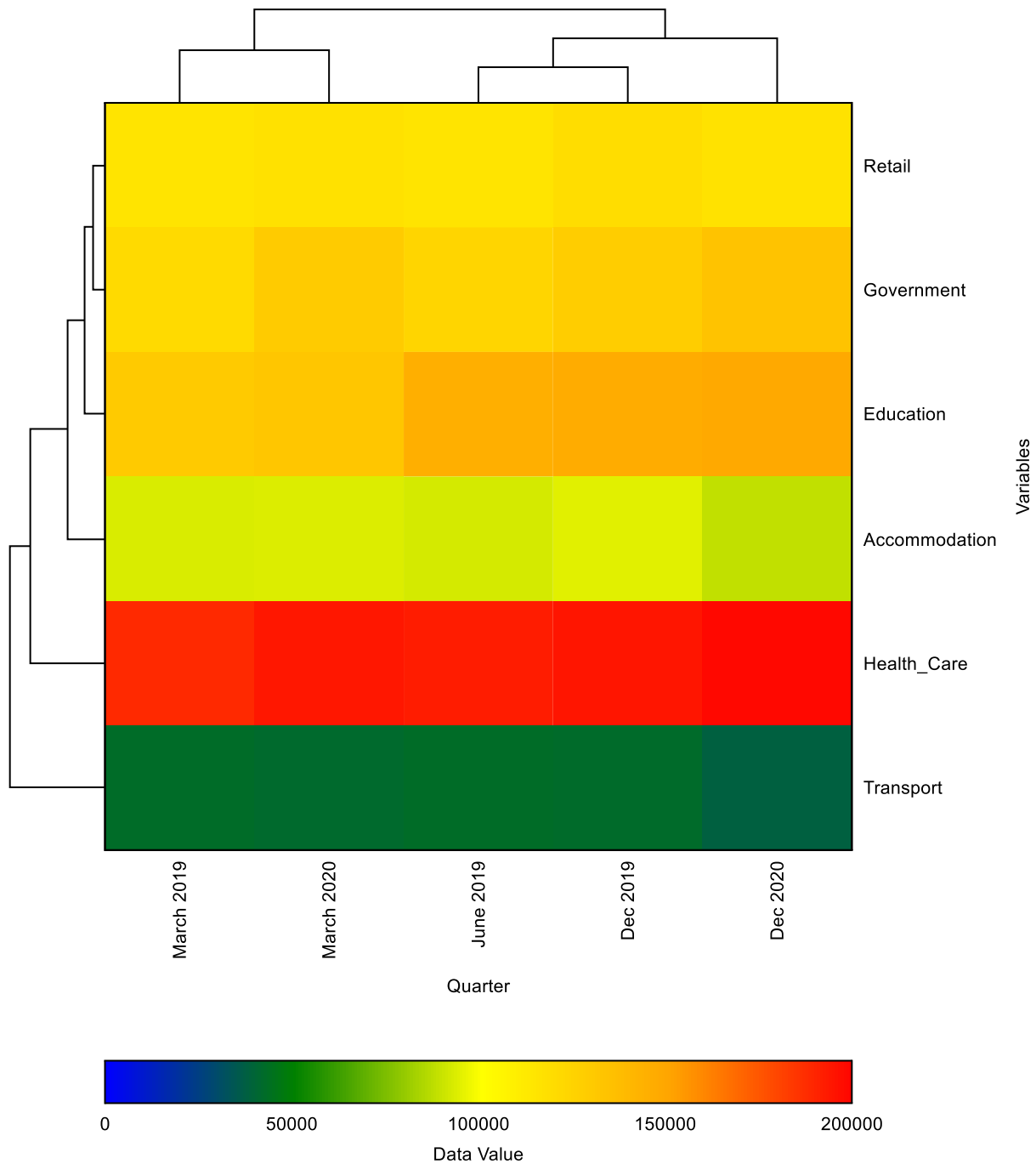


Figure 5. Clustered Heat Map of the Female Working Population in the Highly Impacted Industries.

Throughout the lockdown and alert levels, essential workers were required to work regardless of the risks involved. The majority of essential workers in New Zealand were also female workers. The recognition of the significant role that these members of the workforce play, created a major shift in public recognition of what constitutes ‘essential work’ for the operation of the economy and the wellbeing of its population. It is interesting that if a survey were to have been conducted prior to the experience of the pandemic, asking individuals to identify essential workers in our economy, a different list would have been very likely to emerge, assigning higher value to jobs with greater influence, earnings and prestige. This lesson and awareness from the experience with the COVID-19 pandemic may indeed endure. Figure 6 illustrates how nationwide lockdown restrictions impacted the female

workforce of New Zealand in a scale from 1 to 10. Themes discussed in this research were domestic violence, women in high-risk industries, essential workers, family wellbeing and job loss and unemployment. Under all these themes, women were found to be the more highly impacted gender both theoretically and statistically. Therefore, the impacts seen by women have been highly rated for each theme compared with the impacts seen by men.

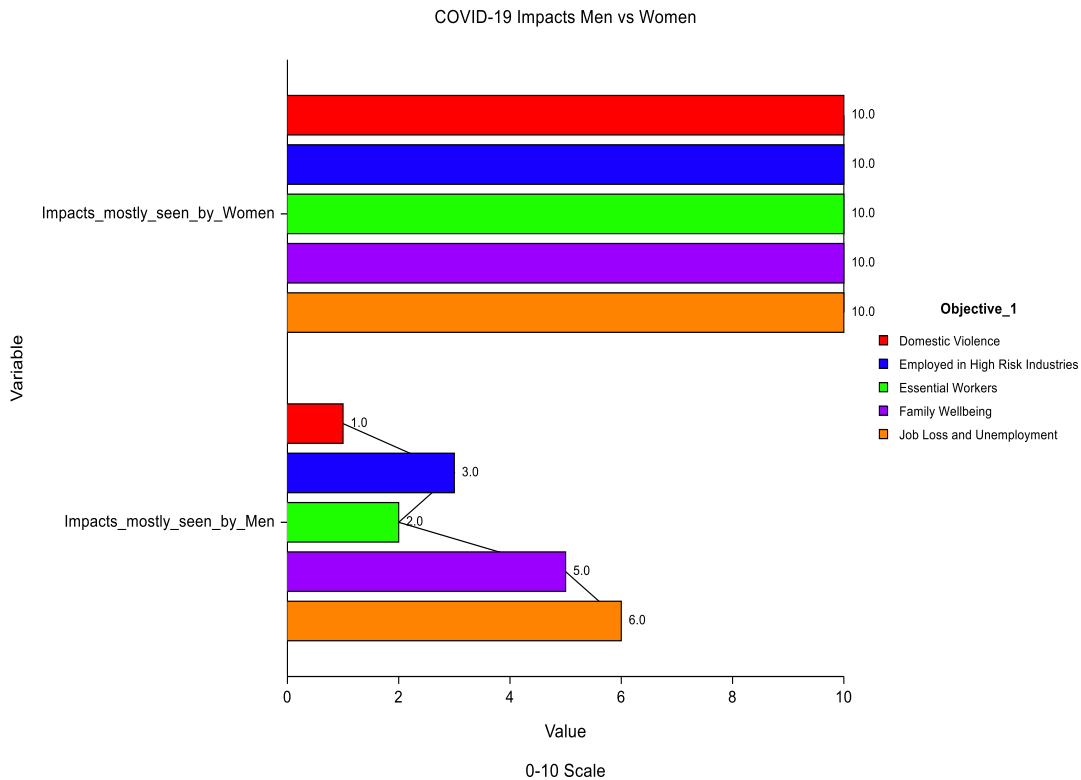


Figure 6. Rating Outcome of Objective - To Determine how Nationwide Lockdown Restrictions Impacted the Female Workforce of New Zealand.

The findings of this investigation highlight that mostly women showed lower employment rates compared to men in New Zealand, and the COVID-19 pandemic and lockdown situation made things worse for them. The majority of the women workforce was on the frontline as essential workers, putting themselves at more risk of being exposed to COVID-19. A significant loss of women’s employment was reported between March and September 2020 quarters, and this is the highest recorded quarterly increase since 1986. Gordon (2021) reported 2020 as the horror year of domestic violence due the significant increase in domestic violences, and women were directly impacted in this situation because they were more vulnerable to violence than men, especially during the COVID-19 outbreak. Women were likely to be employed in industries severely impacted by the pandemic, for example hospitality, food services, retail, healthcare, education and social assistance. Working mothers faced another layer of challenges handling family and job demands.

5. Conclusions

The research objective of this study is to determine how nationwide lockdown restrictions impacted the female workforce of New Zealand by analysing it in subsets. To address this research objective, this study identified three themes and they were then analysed based on three subsets.

The first theme discussed the family wellbeing statistics during COVID-19 lockdowns. It was identified that women experienced higher discrimination at work and home compared with men. Although the overall rating of

family wellbeing was on the positive side, most sole mothers with dependent children rated their family wellbeing more poorly. It was also identified that data published by Stats New Zealand lacked information on how working mothers were impacted in comparison with working fathers.

The second theme discussed was job loss and unemployment. This theme explained how women lost more jobs, work hours and income compared with their male counterparts. There was a drop in New Zealand's employment rate with women being more impacted than men. The unemployment rate also rose for women resulting in more women depending on benefits or their significant other's income.

Third theme was domestic violence. Due to lockdown restrictions, families were confined to their households. In addition to the female workforce losing income and employment, women also had to take responsibility for childcare more than men. This made them dependent on their partners, and one could even say vulnerable. The Ministry of Justice (2020) reported that a massive increase in domestic violence cases was seen during the lockdown periods compared with pre COVID-19 periods.

This investigation revealed that sole mothers with dependent children showed poor family wellbeing. Additionally, they reported experiencing workplace discrimination during the COVID-19 lockdown period. The female unemployment rate is very high compared to male unemployment rate in the face of lockdown. It was identified that more than 70% of essential workers were women during the pandemic period, making them the frontline workers who battled against the pandemic. While it was the women of this country who were majorly involved in battling COVID-19, it was also the women of this country who had to bear the severe consequences of COVID-19 in terms of the economic downturn.

The female workforce is majorly employed in industries that were highly impacted by COVID-19. While male dominated industries such as agriculture, construction and finance bloomed during the pandemic, female dominated industries like retail, accommodation, education and healthcare felt unprecedented impacts of COVID-19. It can be concluded that the working women of New Zealand indeed have been critically impacted by COVID-19 compared with working men.

6. Recommendations and Future Directions

COVID-19 will be remembered for changing the ways individuals work in fundamental ways. For example, the pandemic abruptly accelerated the speed of change associated with working outside office-based employment settings. However, this was not the only major change seen since COVID-19. Economies across the world started to crumble, while labour markets started to see huge implications from borders and countries closing entirely. With employment rates plummeting, the female workers around the world started to see major changes in their employment compared with their male counterparts. This in fact was a common phenomenon across the globe.

This study explored the topic COVID-19 and gender inequality. Overall findings of the study provided useful data from a quantitative analysis to prove that working women of New Zealand have felt the weight of the pandemic more than working men. Although there was a gap in the data where it was unable to identify whether working mothers had been impacted more than working fathers, this research was still able to justify the study by ways of all other available data.

The focus of this study is to understand the impact of COVID-19 on the female workforce and discovered that the New Zealand government and employers will need to be more proactive in disaster situations like this. This study recommends several recommendations to New Zealand government and employers.

The New Zealand government can reconsider its investing models. The industries like construction thriving during the pandemic and the government can reinvest some of the funds from these highly booming industries in the highly impacted industries. Additionally, the government may introduce a subsidy to working parents who compelled to reduce their working hours due to unexpected childcare requirements in a crisis situation like COVID-

19 pandemic. From the employers' side, they can consider introducing a benefit scheme to their unemployed workers who left their employment to provide childcare. This recommendation may be helpful to support unemployed mothers for a short period until they get proper childcare facilities.

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Conflict of interest

All the authors claim that the manuscript is completely original. The authors also declare no conflict of interest.

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