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The 'Ins and Outs' of Work – Diversity or Homogeneity in New Zealand Women's Employment Patterns?

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Sarah Hillcoat-Nallétamby and Sandra Baxendine

March 2005

Abstract

New Zealand has experienced sustained increases in women's labour force participation since the post-war period. The Census of Population and Dwellings and the Household Labour Force Survey provide aggregate-level insights into labour force behaviour, relying on the compilation of cross-sectional data to provide indicators of long-term trends to women's employment. What these data sources do not offer are clear pictures of the sequencing of women's employment across the life course, in terms of periods in and out of work. These patterns have however been identified as key factors influencing women's capacity to save and the persistence of gendered occupational status and earnings disparities. When observed across time, work patterns also provide insights to the changing overall lifetime attachment of women to the labour market. Using data from the 1995 sample survey *New Zealand Women: Family, Employment, Education*, we present descriptive findings on the work patterns of women born between 1936 and 1965, and use graphical techniques to depict these patterns in terms of spells in and out of work. A cohort perspective is taken. We then proceed to summarise the details of these individual work histories using summary measures which can then be co-related with potential explanatory factors.

Keywords: New Zealand; Work Spells; Women's Employment Patterns

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1. Introduction

New Zealand has experienced sustained increases in women's labour force participation since the post-war period. The Census of Populations and Dwellings and Household Labour Force Survey give detail of labour force participation rates, but rely on the compilation of cross-sectional data to provide indicators of long-term trends in women's engagement in the labour force. At present, short-run transitions can be measured with data from the Household Labour Force surveys but only for a period of up to 2 years, and the forthcoming SoFIE[1] surveys will provide long run transitions in the future. Hence whilst we know from existing data sources that women's participation in paid employment has increased progressively since the Second World War period, these sources do not at present provide us with insights into two aspects of women's work: the *sequencing* of work patterns across the life course, in terms of periods in and out of employment and the proportion of potential working lives spent in employment.

From a policy perspective, the need to monitor these aspects of women's work has become increasingly recognised, for several reasons (Harré-Hindmarsh & Davies, 1995; Walby, 1991). International research suggests that gendered differences in accumulated work experience is an important explanatory factor of unequal labour market outcomes between men and women in terms of occupational segregation, loss of skills, pay inequities and current labour force status (Blau & Kahn, 2000; S. Dex & McCulloch, 1998; Huber & Spitze, 1981; Rosenfeld, 1980; M. Stewart & Greenhalgh, 1984).

The purpose of this paper is to illustrate the work history patterns of New Zealand women born between 1936 and 1965, to see whether these have changed across time and to examine the links between these patterns and their educational achievements, childbearing status and ethnicity. More specifically, the paper presents two sets of descriptive analyses of women's work histories. We draw on graphical representation techniques first developed by Corcoran in the US (Corcoran, 1979) and later applied to UK data (Stewart & Greenhalgh, 1982) to describe work history patterns in New Zealand in terms of the sequencing and frequency of spells in and out of work. Summary measures of these histories are also presented along with a brief descriptive statistical analysis examining differences in work patterns by educational achievement, childbearing status and ethnicity. Second, by comparing the graphical representations and summary measures across different cohorts of women as they have reached given ages, we are able to look at cohort and life course effects (Main, 1988). We therefore examine the work history patterns experienced by age 30 for three groups of birth cohorts, and those experienced between the ages of 30-39 for the older birth cohorts.

[1] Survey of Family, Income and Employment.

Data are drawn from the 1995 sample survey *New Zealand Women: Family, Employment, Education/NZW:FEE*[2] (Johnstone, 2001; Marsault et al., 1997) which provides a unique source of retrospective, unit-level data on the current and previous work experiences of women aged between 20 and 59 years in 1995. The majority of women interviewed had worked at least once by 1995 (96.2% = 2868; 3.8% = 113 never worked).

2. Conceptualising Work History Patterns

Drawing on international research which has used retrospective, sample survey data to identify and explain the work history patterns of men and women (Dex, 1984; Elias & Main, 1982; Jacobs, 1999; Main, 1988; Rimmer & Rimmer, 1995), we conceptualise work in terms of periods during which women are involved in paid and unpaid activities, and which cumulatively, provide an individual's history of attachment to work across their life course.

In this paper, the concept of work is synonymous to employment, and refers to a self reported status by which survey respondents identified what they perceived to be their *main activity* at a given point in time[3]. If this activity was reported as 'employed' or 'employed without pay', and provided the activity was for a period of at least 3 consecutive months, then it is considered as 'work'. This definition is not strictly comparable to standard labour force participation rates derived from the census or Household Labour Force survey which include the unemployed in the numerator populations, and which rely on a much shorter reference period within which labour force activity is recorded[4].

The concept of *work spell* is central to the development of the work history patterns. Work and non-work spells were obtained from the survey data by following through each individual woman's employment history and collating the various periods of work and non-work into a continuous pattern. Patterns were documented for each woman following the age at which she left school.[5] A *non-work spell* includes periods in which women reported either being a homemaker, being unemployed, studying or retired. A *work spell* includes women reporting paid or unpaid employment (full or part time). Any two work spells punctuated by a non-work spell of less than three months were collated to make one continuous work spell[6]. A third group 'Other', included women who had never worked for

[2] For details of the survey's sample and methodology see: Johnstone et al. (2001) and Marsault et al. (1995).

[3] This meant that a woman who was actually involved in home work whilst also being engaged in a few hours paid employment might report the former as her main activity. She would consequently have been classified as 'not in the labour force'.

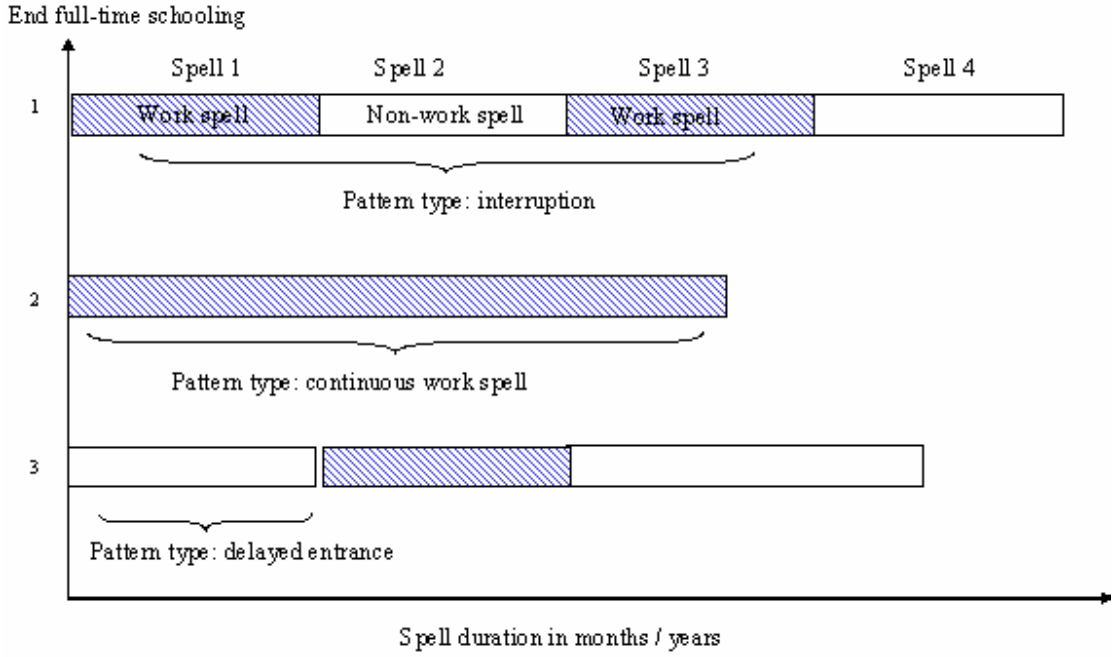
[4] This definition also differs from that of the NZ Census or HLFS in which a person working one hour or more per week is in the labour force.

[5] For women who started work under the age of 14, they were imputed up to 14.

more than a three month period, those who had worked for less than three months and refusals or 'don't know' responses. This last group was merged into the *non-work spell* category.

Three concepts are used to describe the nature of these patterns (see Figure 1): an *interruption* refers to a break from employment consisting of one non-work spell flanked by two work spells, as in this case, women have returned to work at least once (Figure 1: pattern 1); *continuous* work spells describe patterns for women who have taken up work after school and have continued uninterrupted until the time of interview or a given age (Figure 1: pattern 2); a *delayed entrance spell* (into the workforce) refers to a spell of non-work immediately following the completion of full-time schooling[7] (Figure 1: pattern 3).

Figure 1: Conceptual model – hypothetical work patterns for an individual woman



The graphical representations of work histories are a useful visual tool, and also provide some evidence of duration of spells, but serve essentially as a descriptive element. For the purpose of extending the analysis further towards explanation, we must summarise these patterns. Summary measures include: number of working,

[6] If a respondent reported being 'employed' between jobs, but for a period of less than three months, this was not considered a job per se, it was assumed that any gap of less than 3 months was equivalent to a continuous employment spell. In programming work histories however, the For example: job 1 duration = 12 months; gap = 2 months; job 2 duration 24 months; end work history. The duration of the working spell was computed as 38 months. The number of jobs was computed as 2, and the number of non-working spells as 0.

7 Excludes women who have never worked.

non-working and total spells, the average duration of each of the former spell types and the proportion of potential working life spent in work.

3. Data Considerations

A key problem encountered when using retrospective data is the risk of inaccurate data collection due to recall problems (S. Dex & McCulloch, 1998; Elder & Johnson, 1999; S. C. Jacobs, 2003). To address this problem, we have compared the proportions of women in the sample who were at work at given ages in the past, to proportions obtained during four census periods (Elias and Main, op. cit: 43). Data were collated as follows: for all survey women aged 59 in 1995, the proportion employed for every year between 1995 to 1952 (age 16) were obtained by tracing back through the retrospective histories. Accuracy of this recall data is then checked by aggregating the resulting proportions of women in employment across cohorts into five year age-groups. For example, the average proportion employed amongst all survey women who were 15-19 in census year 1975 was then compared with the corresponding census year rate for that age group. Figures A-E (Appendix 1) provide the comparison of age-specific participation rates obtained from the censuses of 1976, 1981, 1986 and 1991 with the proportions from the survey[8]. With the exception of events at ages 15-19 (Figure A), and 1976 figures for those at ages 25-29 (Figure C), results generally suggest that the recall of past work histories was fairly accurate because they reflect the trends documented at the aggregate level. As mentioned previously, some of the differences may be due to definitional issues related to the reference period during which data were collected. The census for example records employment activities in the reference week prior to the date of census day, unlike the NZW:FEE as outlined above.

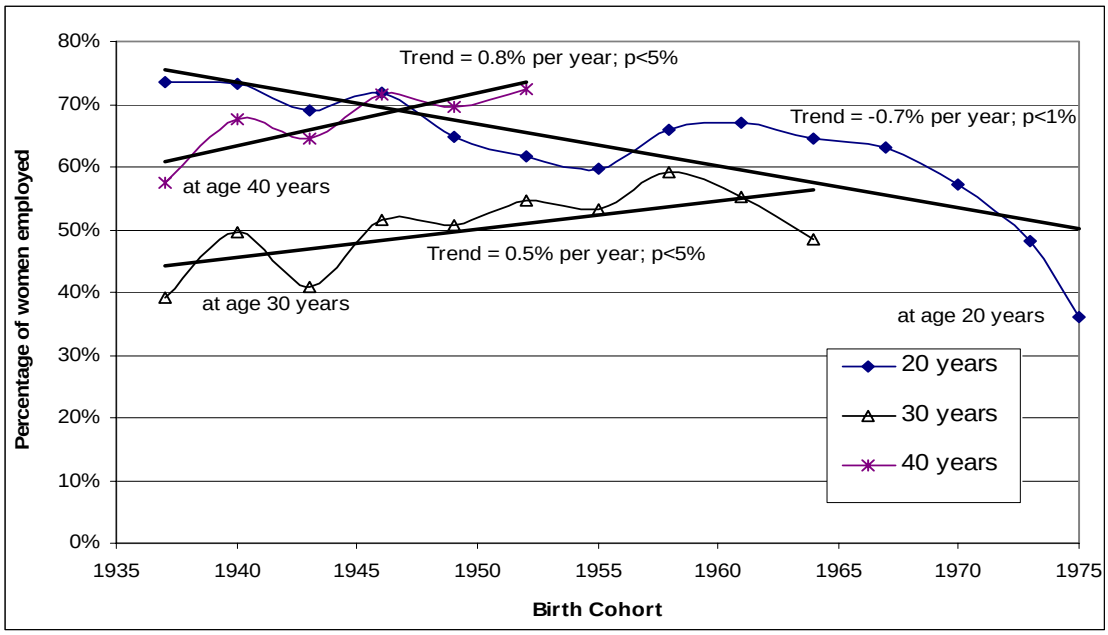
4. Women's Increased Involvement in Employment Across Time

By comparing the percentages of women in employment at given ages for successive birth cohorts, we capture what we already know to have been a long-term trend of women's increased involvement in employment. The one exception to this trend is observed for the youngest group of women who are progressively delaying entry into work largely due to more time spent in education (Davies with Jackson, 1993; Dixon, 1996). Despite temporal fluctuations which are probably indicative of both time-specific conditions influencing the supply and demand for labour, as well as inaccuracies of reporting due to recall already discussed, Figure 2 indicates that the proportions of women in employment at age 20 has generally been declining. About three out of four women born between 1936 and 1938 would have been in employment at this age, compared to less than four out of ten of their younger counterparts born in the early to mid-1970s. The picture is reversed at older ages, with each successive cohort of women being more likely to be in employment at age 30 or 40. This analysis therefore affirms what we know, and hence reinforces the validity of our data - that women's participation

[8] Both figures from the census and survey refer to the month of March.

in paid work has increased for successive birth cohorts, becoming more pronounced at older ages.

Figure 2: Percentage of women employed at exact ages 20, 30 and 40 by birth cohort, NZW:FEE [9]



5. Work History Patterns in the 1990s

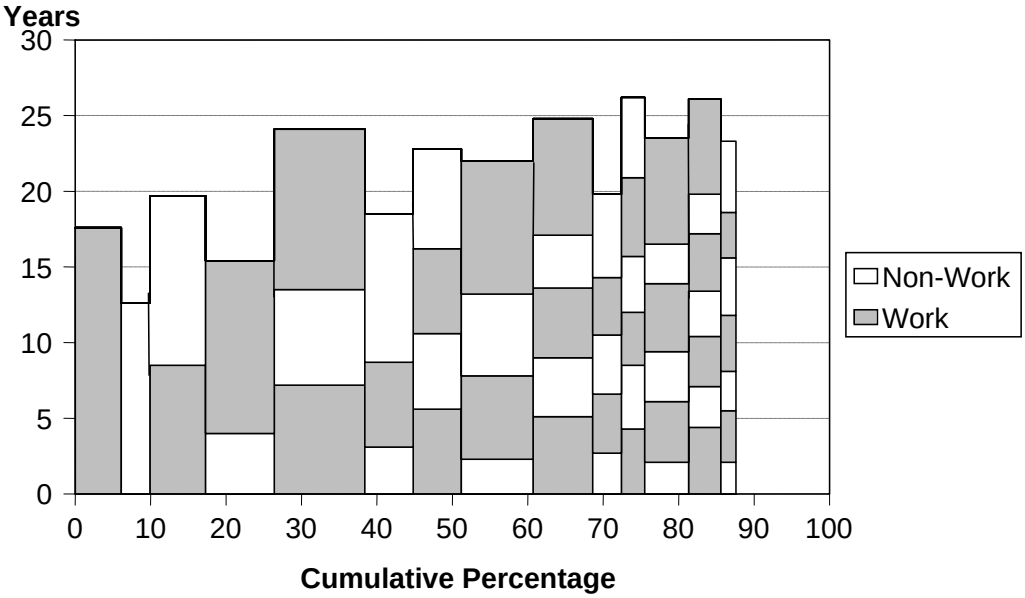
All Women

Bearing in mind that any cross-sectional descriptive pattern of women's engagement in work will be strongly influenced by current age, we first describe the broadest of cross-sectional pictures of work histories for *all women* aged 20-59 in 1995. A striking feature of the graph[10] is the variety of patterns observed, as about four out of every ten women (39.3%) have experienced a sequence of five or more work and non-work spells (Table A2:1 and 2, Appendix 2).

9 Points on graph represent average for 3 year single birth cohorts. Due to small cell sizes for single ages, data have been aggregated into three year birth cohort groupings and smoothed. For example, the points plotted are therefore for each third group (e.g. Figure 1: the first set of points to the far left of the figure show the proportions of women employed at ages 20, 30 and 40 respectively for those born between 1936 and 1938).

10 Data are presented as histograms representing the sequencing of work and non-work spells reported by women. For each histogram, the column width represents the relative frequency of a given work pattern among all women in a given age group. The vertical axes represents the average duration in number of years spent of each work and non-work spell. The graphs are read from left to right. The columns on the extreme right which are not shaded represent complex or rare work patterns. In reading the graphical representations it must be remembered that some cell sizes are very small, which can lead to considerable variation around the average durations represented.

Figure 3: Distribution of work and non-work spell patterns for all women as reported in 1995 (Years = average duration of each pattern in years) (N=2,981)



To the far left of the histogram we see that 10% of women have experienced only 1 spell, less than 5% (3.8%) having *never worked*, the remainder having worked *continuously* since leaving school. Reading from left to right, about 16% of women have experienced two spells, with similar proportions having worked and then ceased ('*work/non-work'*), or having *delayed* taking up paid work by having a spell of non-work immediately following the completion of full-time schooling ('*non-work/work'*). Just under one fifth of women (18.4%) have experienced three spells: 12% have worked on leaving school, withdrawn from the labour market and then returned to paid work, and as 'returners' to employment have experienced 1 *interruption*; their counterparts who have experienced one work spell flanked by two non-work spells (6.4%) have yet to return to paid work, if at all, and have therefore not experienced a completed interruption. For the 16% who have experienced four spells, some have currently left work for a second time (6.3%) and the remainder have returned after a first completed interruption (9.5%), having initially delayed their start in paid work. The more complex patterns consisting of five or more spells appear at the far right side of the histogram.

The patterns are therefore predominantly characterised by complex sequences of spells, with only a small proportion of one spell. In terms of work behaviour, a minority of women has never worked, but only a slightly higher proportion has worked continuously since leaving school. Less than 8% have had only one work spell and are yet to return to work. The majority of women therefore (over two thirds) have experienced at least one interruption (or return).

Looking at specific work patterns (reading Figure 3 from left to right), the average duration in the case of a continuous work spell is 17.6 years. Those who have worked and are currently experiencing their first, uncompleted break or *out-spell* from work have, on average, been out of work for over 11 years, a longer period than their initial experience of work which lasted an average of 8.5 years. This suggests that they may have opted to leave work on a permanent basis, after an extended period of initial work activity. This interpretation is somewhat substantiated by the fact that the average duration in years of this incomplete *out-spell*, 11.2 years, is the longest of any of the other non-work spells, barring those who have never worked. The reverse of this particular pattern appears for women who are currently in work, following an initial *delayed entry* of about 4 years. Since engaging in paid work, they have remained active on average for about 11.5 years.

On average, women have experienced about four and a half spells (slightly more work than non-work), with an average duration of about six and a half years (again, a higher duration for work than non-work spells). An average of around sixty-one percent of their potential working lives since leaving school has actually been spent in paid work.

Table 1: Mean numbers and durations of total, work and non-work spells. All women, 1995 (%)

Mean # spells	4.37
Mean # work spells	2.27
Mean # non-work spells	2.11
Mean duration of spells in years	6.71
Mean duration of work spells[11]	7.19
Mean duration of non-work spells[12]	5.08
Prop. potential working life worked	0.59
N	2981

6. Variations by age, childbearing, education and ethnicity[13]

Previous research on women's work experience would suggest that the work history patterns thus far described vary by age, childbearing status, educational experience and ethnicity. We briefly examine the influence of these factors at the bivariate level. Work patterns can be regrouped into five categories, based on the total number of spells (in and out of work), work and non-work spells (see Appendix 2: Table A2:1, All women in 1995).

[11] Excludes those who have never worked.
[12] Excludes those who have not experienced a non-work spell.
[13] Categories for variables of total number of living children, current marital status and educational achievement have been collapsed in view of analysis by cohort where cell sizes are too small to enable meaningful descriptions.

Remembering that these results reflect a cross-sectional perspective, the likelihood of having experienced the more complex histories of 4 or more spells increases with age as we would expect (Table A2:2). The frequency of working and non-working spells for all women is indicated in Table A2:3. Generally speaking, the number of both types of spells increases with age for those having worked 2 or more spells. For the youngest women, about 1 out of 10 have experienced neither type, probably indicating the effect of prolonging education into the early twenties. The majority in this same age group (close to half) have had only 1 working or non-working spell. In contrast, as would be expected, it is the older women who are the most likely to have experienced four or more work or non-work spells, and their experience of work and non-work is concentrated in patterns of 1, 2 or 3 spells.

Similarly, average numbers and durations of spells increase with age, and are higher for work spells, this difference again increasing with age, suggesting that women of all ages spend more of their potential work life in work than out (Table A2:4). Interestingly however, the total proportion of life worked remains strikingly consistent at about 60 % once women reach their thirties.

The impact of childbearing upon participation is clear (Table A2:5). Compared to women with no children, those with at least one child are more likely to have worked three or more spells, and are concentrated in the more complex of patterns. There are similar frequency distributions for work and non-work spells. The ability to work continuously when no children are present is undoubtedly a key reason why nearly half of childless women have experienced only 1 work spell. The average duration of non-work spells for childless women is only about half that of mothers (Table A2:6) and the former have worked more of their potential working life.

Education seems to have no clear impact on the frequency of total spells, although the likelihood of experiencing 2 or 3 spells decreases with increasing levels of qualification, and in turn, those with the highest level of qualification are concentrated in the 4 and 5+ spells. The latter pattern also holds true for both work and non-work spell distributions. Very few women with higher education have never worked, and they have a higher mean number of total, work and non-work spells and shorter duration of non-work spells (Table A2:8). This suggests that high educational achievement enhances attachment to work through more complex patterns of entry and exit. Women who have not completed any educational qualification are likely to have worked the least of their potential working life (48%, see Table A2:8).

Compared to Maori, Non-Maori are more likely to have experienced complex patterns of 5 or more spells (Table A2.9), have higher proportions in work and non-work spells of 3 or more periods, and lower proportions who have never worked. Non-Maori have higher mean numbers and durations of total, work and

non-work spells, whilst the mean duration of non-work spells for Maori is higher. Maori have spent about 50% of their potential working life in work compared to 60% for Non-Maori.

In sum, at the bivariate level, all four factors influence the sequencing, number and length of spells. As would be expected, increasing age is associated with more varied sequencing of patterns and longer durations in and out of work. Childbearing reduces the time mothers can potentially spend in work, makes their non-work spells lengthy and creates more varied patterns, suggestive of more movements in and out of work. Being highly qualified is a facilitating factor in increasing the number and length of work spells and in reducing time spent out of work, while having never completed an educational qualification has a depressing effect upon the proportion of time spent in work. Work histories among Maori are less complex in terms of pattern sequences, numbers and durations of spells. They experience longer non-work periods and spend less of their potential working lives in paid employment.

It is therefore clear that at the time of the interview in 1995, the vast majority of women had experienced at least one spell of paid work and the majority had experienced complex work histories. The complex patterns observed thus far suggest that these women have a firm, but far from continuous involvement in employment and that there is significant variation in the types of patterns of engagement depending upon current age, educational achievement, childbearing status and ethnicity. Behind the well-known bi-modal curve which is so often used to characterise women's involvement in the labour market lie complex patterns of entry, exit and re-entry.

7. Work history patterns by age 30 – A cohort perspective

This initial description of work history patterns clearly masks the effects of life cycle stage and changes across time. By examining work patterns for women of different birth cohorts as they reach a given age, we are able to distinguish more readily whether there have been any significant changes across successive generations in terms of engagement in paid work. Figures 4-6 represent the work history experiences for three cohorts of women by the time they had reached age 30, and who in 1995 were aged between 30 and 39, 40 and 49 and 50 to 59 years (birth cohorts 1956-65, 1946-55 and 1936-45 respectively). When the data are presented in this way, we have an insight into both cohort change and life cycle influences.

First, and irrespective of birth cohort, by age 30 roughly equal proportions of women (about one quarter in each case), had experienced work patterns of 2, 3 or 5 spells, the remainder similarly divided between patterns of 1 and 4 spells (Appendix 3: Table A.3:2, 'Total' column).

Figure 4: Work and non-work spell patterns for women at age 30, birth cohorts 1956-65, aged 30-39 years in 1995 (N=937)

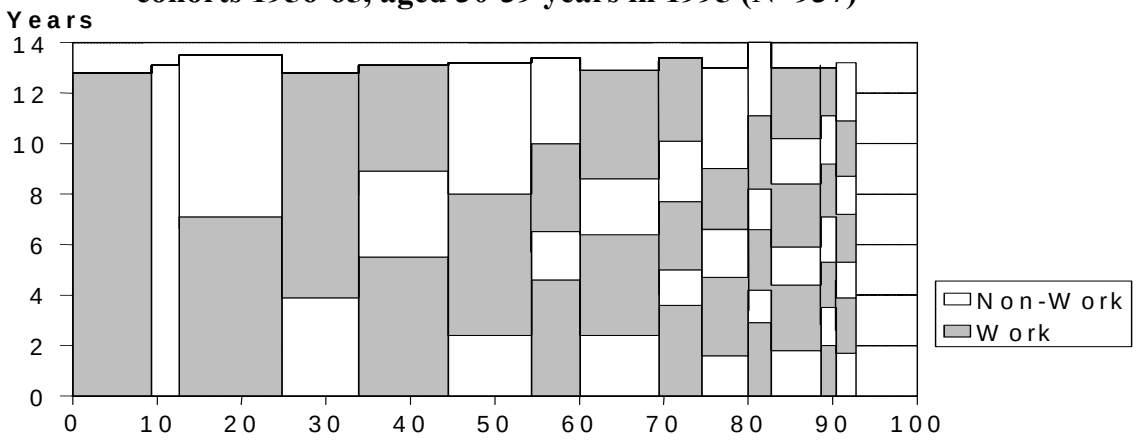


Figure 5: Work and non-work spell patterns for women at age 30, birth cohorts 1946-55 aged 40-49 years in 1995 (N = 838)

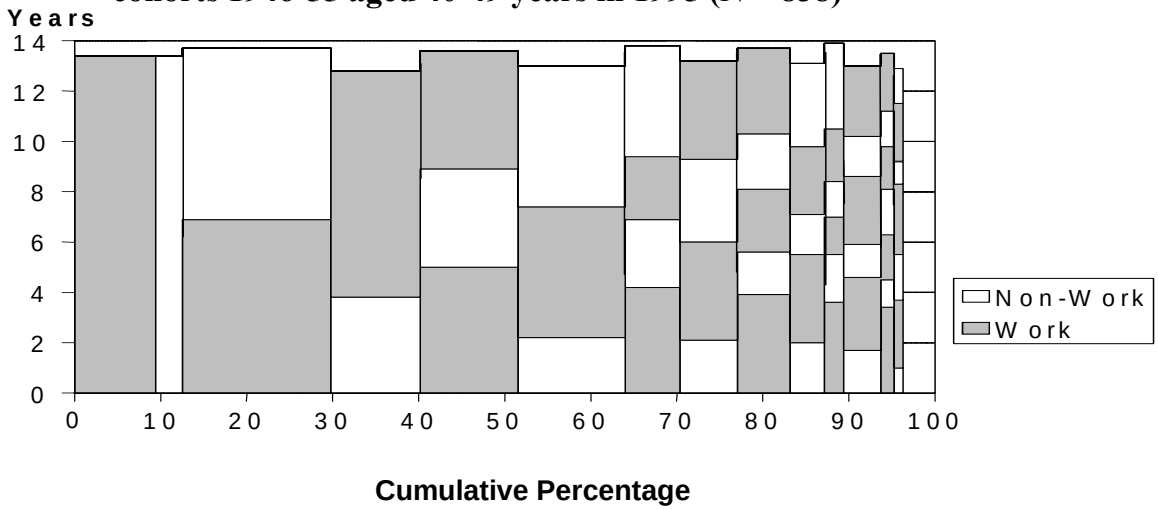
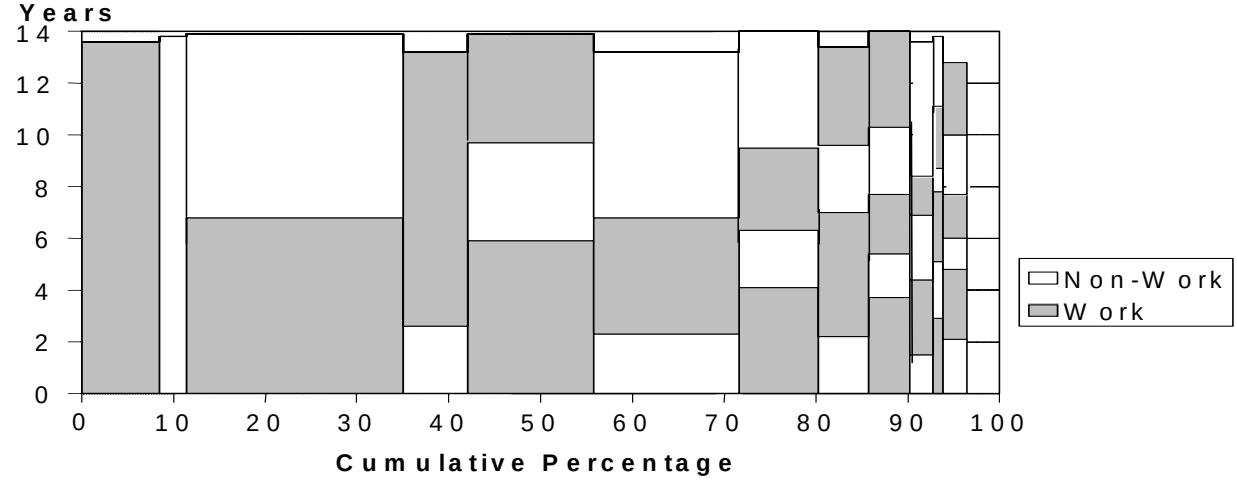


Figure 6: Work and non-work spell patterns for women at age 30, birth cohorts 1936-45, aged 50-59 years in 1995 (N=482)



As expected, this represents a markedly different distribution of spell frequency when compared with all women in 1995 where the majority had experienced five or more spells. Even if we consider this period of the life course as one of initial family formation, very few women by age 30 had not worked: of the 12% who had experienced only 1 spell, for the majority, this had been a work spell (Table A3:2).

Comparing the birth cohorts, (Figs. 4-6), there are three noticeable changes in terms of total spells worked by age 30 (Appendix 3, Tables A.3:1-2). First, there has been only a slight increase in the proportions of women who have experienced one spell, either of continuous work or no work. In each cohort group, they represent about 9% and 3% respectively of all work patterns experienced by women. Second, moving from older to younger cohort groups, work histories become increasingly punctuated by a sequence of entries and exits. For the youngest women close to a third had already experienced patterns of at least five consecutive work and non work spells, compared to only about one seventh (14.3%) of the oldest cohorts. (Fig. 4 and Table A3:2). These differences are explained in part by the greater proportions of older women (60.1%) who had experienced work patterns of two or three spells respectively, compared to far fewer amongst the youngest cohorts (41.7%).

Table 2: Mean number and duration in years of total, work and non-work spells and proportion of potential working life in work experienced by age 30 by birth cohort. Women aged 30+ in 1995

	B.C. 1956-65 Aged 30-39 in 1995	B.C. 1946-55 Aged 40-49 in 1995	B.C. 1936-45 Aged 50- 59 in 1995
Mean # total spells	3.78	3.33	3.02**
Mean # work spells[14]	1.92	1.70	1.54**
Mean # non-work spells[15]	1.87	1.63	1.48**
Mean duration total spells	5.10	5.58	5.85**
Mean duration work spells	5.52	5.89	6.02*
Mean duration non-work spells	3.55	4.15	4.60**
Prop. potential working life in work	0.61	0.59	0.57

B.C. = birth cohorts
One-way analysis of variance, p values significant at ** p <0.01 and * p <0.05.

The third noticeable change is the decrease in the share of work patterns of one work phase followed by no work. Nearly one quarter of the oldest cohorts had experienced this pattern by the time they were thirty (Figure 6), compared to only

[14] Excludes those who have never worked
[15] Excludes those who have not experienced a non-work spell

12% of the youngest groups (Figure 4 and Table A3:1). These findings, which also correspond to British data from the 1980 Women and Employment Survey (Main, 1988) probably reflect the declining influence of social and legal expectations to withdraw from employment once married and the impact that the Second World War period had on the supply of women to the labour force (Davies with Jackson, 1993) .

These changes are reflected in an increasing average number of total, work and non-work spells experienced by age 30, and as a result, a decrease in the mean length of these spells for each successive birth cohort group (Table 2). Whilst it is the youngest birth cohorts who have the most varied patterns, there is also an indication that they were likely to have spent more of their potential working life by age 30 actually in paid employment. They were probably also returning to work more quickly than their older counterparts, as is suggested by the lower average duration of non-work spells.

In sum, the overall changes indicate that with each successive birth cohort group comes a greater fragmentation of work patterns, but with this, a stronger attachment to paid employment, with younger women spending less time away from work.

8. Variations by childbearing, education and ethnicity

As with the cross-sectional patterns examined previously, we would expect that the patterns identified for the three birth cohorts by age 30 will vary depending upon individual level factors of childbearing status, educational achievement and ethnicity.

By age 30, irrespective of birth cohort, childless women are about twice as likely to have experienced only 1 spell and are significantly less likely to have experienced 3 spells (Table A3:3). Overall the likelihood of experiencing more complex patterns increases across the birth cohorts regardless of childbearing status but childless women amongst the youngest cohorts will be less likely to have had 5 or more spells.

The effect of educational achievement on the number of spells experienced by age 30 has changed across successive birth cohorts (Table A3:4). By age 30, women with higher education were the most likely to have worked complex patterns, but this is the least pronounced amongst the oldest cohorts. For the oldest group, having a secondary level qualification reduced the likelihood of experiencing only 1 spell, and those with no qualification were the least likely to experience the more complex spells. Amongst the youngest cohorts, one quarter of those with no educational qualification were likely to have experienced more complex patterns, a much higher proportion than unqualified women in the other two birth cohorts. The effect of not having obtained any educational qualification by age 30 is to

concentrate 30% or more women in each birth cohort in the 2 spells pattern, and this holds true for secondary level qualifications but only for the two older birth cohort groups. It therefore appears that the effect of educational achievement on work patterns experienced by age 30 has changed more significantly amongst the youngest of women.

Taking into account that at the bivariate level, chi-square values are significant for the oldest of cohort groups only (but only at $p<0.10$ level), it is not possible to establish any changes across successive cohorts (Table A3.5). It appears that in the past, Maori women would have been more concentrated in the 1 or 2 spell patterns, and although not statistically significant, the distribution for the youngest group suggests ethnic differences are attenuated. When compared to the frequencies for the total sample of women in 1995 which is statistically significant (Table A2:9) this distribution is somewhat similar with the exception of pronounced ethnic differences for the more complex spells.

In sum, despite the passage of time, childbearing continued to influence the relative continuity of mothers' as opposed to childless women's work patterns by the time they had reached 30. Whilst higher educational achievements are clearly associated with more work entries and exits, an increase in these types of patterns in the youngest cohorts is also apparent. Maori women appear to maintain a weaker attachment to work with each successive birth cohort insomuch as the time they spent out of work on average remains higher than for Non-Maori.

9. Cohort experience during later stages of the life course

If we consider the work pattern experiences of the two oldest cohorts when they were aged between 30 and 39, and then place them adjacent to their histories lived until age 30, we begin to develop a visual picture of a life course perspective to their trajectories. As the bivariate relationships observed between birth cohorts and number of spells is not statistically significant, we cannot comment with any great accuracy on the patterns we have observed, so limit our discussion to a brief description of the histogram representations and frequency distributions (Table A4:1).

First, from a cohort perspective there is an indication that the frequency of patterns of one continuous work spell have increased (from 25% to 30%), whilst continuous non work periods decline (from 23% to 13%) (Figures 7 and 8 and Table A4:1). Second, there appears to be a slight increase (from 5% to 7%) in the proportions of women who have experienced five or more spells. This reflects the tendency towards increasingly complex work patterns across cohorts by age 30 which we noted earlier.

Figure 7: Distribution of work and non-work spell patterns for women between ages 30-39, aged 40-49 years in 1995 (N=835)

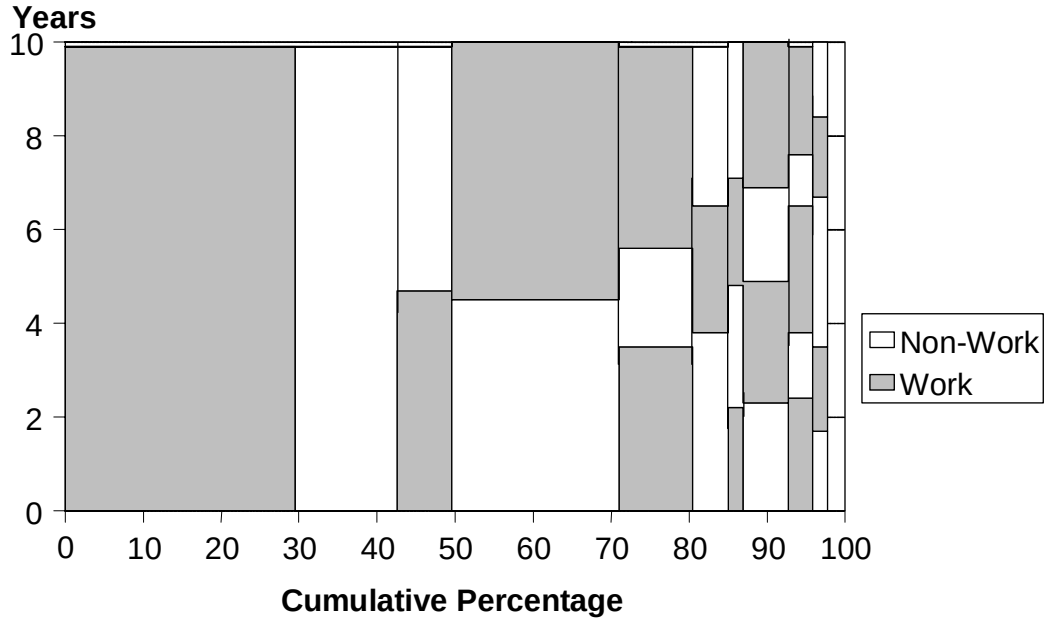
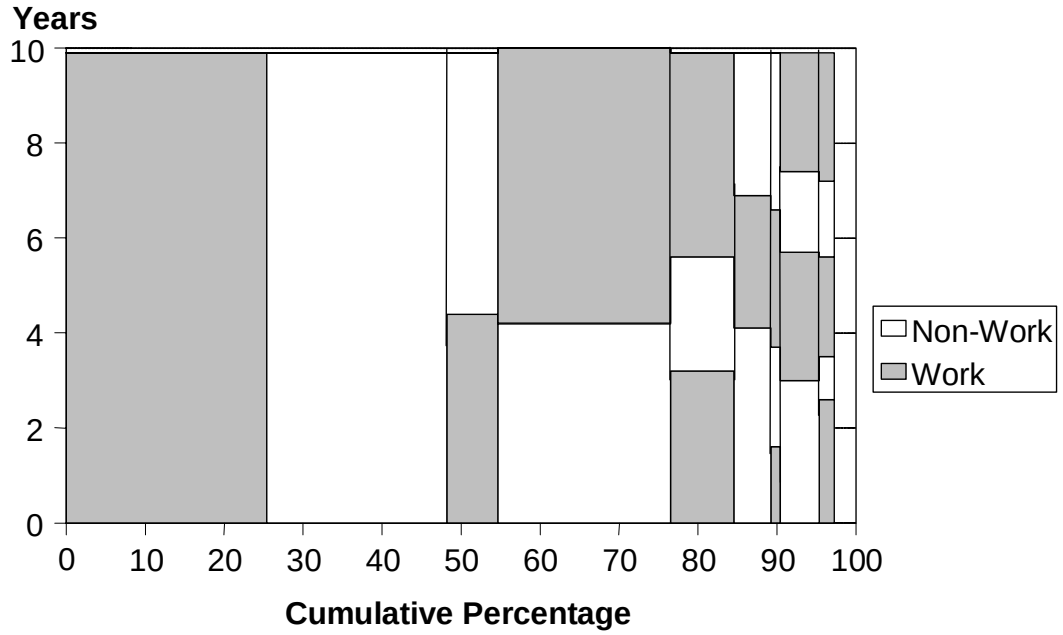


Figure 8: Distribution of work and non-work spell patterns for all women between ages 30-39, aged 50-59 years in 1995 (N=481)



The summary work history measures show similar pattern changes to those found for the earlier period of the life course: the greater diversity of patterns displayed by the women born between 1946-55 by the time they had reached 30 continues through into the later phase of their life course with, on average more total and non-work spells than those born between 1936-45 (Table 3). Again, this is

reflected in a decrease in the mean length of spells. The main difference compared to the earlier phase of the life course is that the younger cohorts born between 1946-55 appear to have spent less of their potential working life actually in work between the ages of 30-39 than the older group.

Table 3: Mean number and duration in years of total, work and non-work spells and proportion of potential working life in work experienced between ages 30-39 by birth cohort. Women aged 40+ in 1995

	B.C. 1946-55 Aged 40-49 in 1995 N = 835 (820)	B.C. 1936-45 Aged 50-59 in 1995 N = 481 (477)
Mean # spells	2.13	1.94*
Mean # work spells	0.95	0.93
Mean # non-work spells	1.18	1.00**
Mean duration of spells	6.42	6.82*
Mean duration of work spells	4.64	5.48**
Mean duration of non-work spells	6.06	6.14
Proportion of working life worked	0.38	0.45**

One way analysis of variance *p* values significant at: ** $p < 0.01$; * $p < 0.05$

Moving away from the focus on cohort changes to life course patterns, if we consider the histograms as representing a continuum of work pattern histories experienced by age 40 (considering Figures 5 and 7 and 6 and 8 together), we see that the latter stage of the life course clearly seems to provide greater continuity in work patterns. The increase in the proportion of single spells of work during the 30-39 year period (from 9.4% before age 30 to 29.6% for the 1946-55 birth cohorts and 8.5% to 25.4% for the 1936-45 groups) suggests the decreasing need to move in and out of work because of childcare responsibilities. This is mirrored in the progressive decline of the importance of complex sequences of five or more non work and work spells once women are over 30 (from 22.9% before age 30 to 7.4% between 30-39 for the 1946-55 birth cohorts and from 14.4% to 4.6% for the 1936-45 groups).

10. Conclusion

Whilst we know from aggregate data sources of the census and specialised labour force surveys in New Zealand that women's involvement in paid work has increased over the past decades, by analyzing work histories and taking a cohort perspective, it becomes possible both to trace the sequencing of their work and non-work experiences and to monitor changing patterns across time. Taking a cross-sectional picture, which obviously confounds effects of age and childbearing status, very few New Zealand women aged between 20 and 59 in 1995 had never been in paid work, only a small proportion had worked continuously since leaving school and the majority had switched at least five times between work and non-

work states. Once we control for age and cohort, we see that by the age of 30, successive birth cohorts have experienced increasing complexities in their work and non-work trajectories. This suggests a progressive shift towards greater attachment to work, although a greater variety in the sequencing of patterns is not necessarily consistent with more time actually spent in paid work over the potential working life available to women. The influence of childbearing continues to depress women's engagement in paid work across time, particularly in the early phase of the life course prior to age 30, but the influence of educational attainment and ethnicity seem to be changing. The correlates of theses patterns and their relationship with women's current labour force status, occupational mobility, earnings and savings capacities remain to be explored.

Appendix 1 Percentage of survey women in employment by age group compared to percentage employed at the census for corresponding age group (March)

Figure A1.1

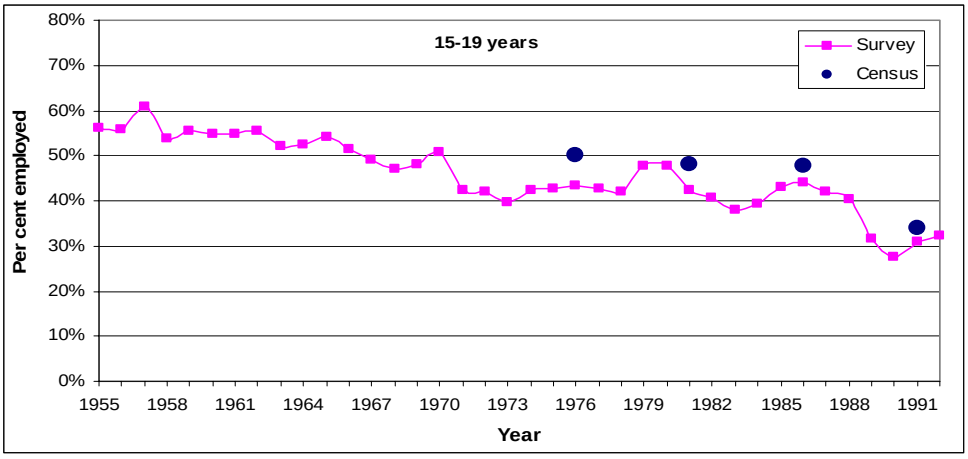


Figure A1.2

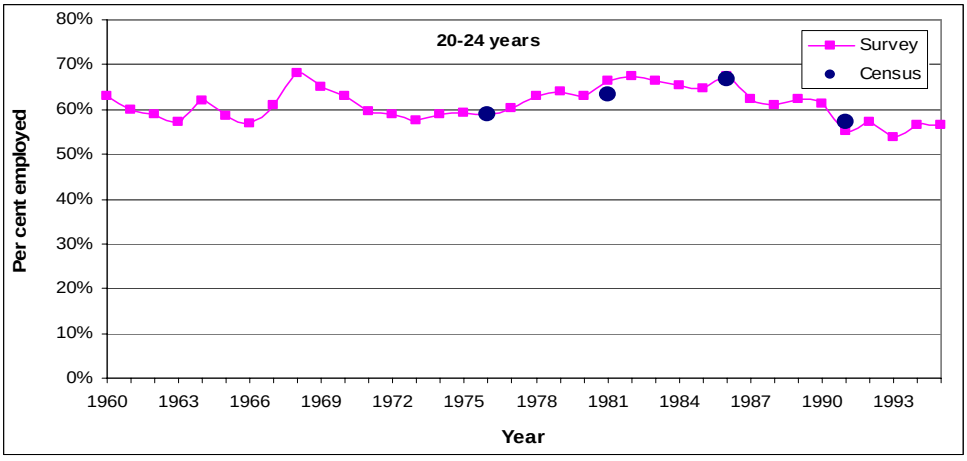


Figure A1.3

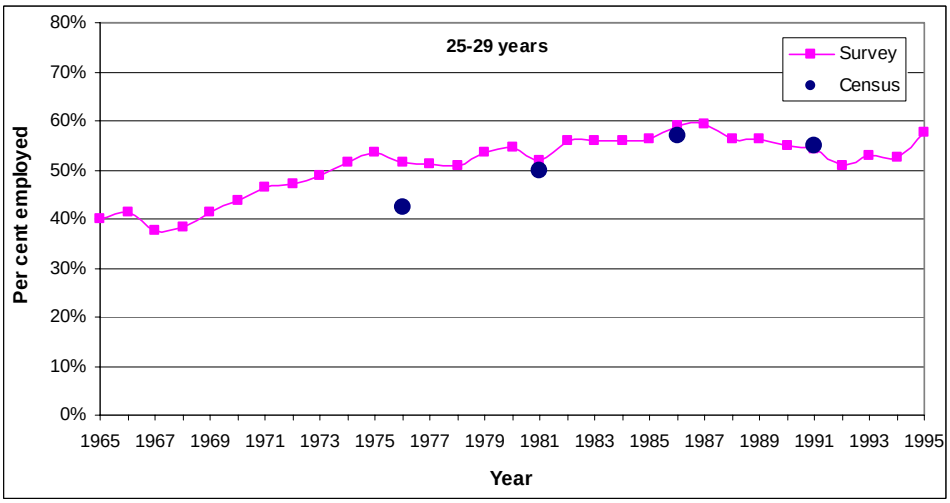


Figure A1.4

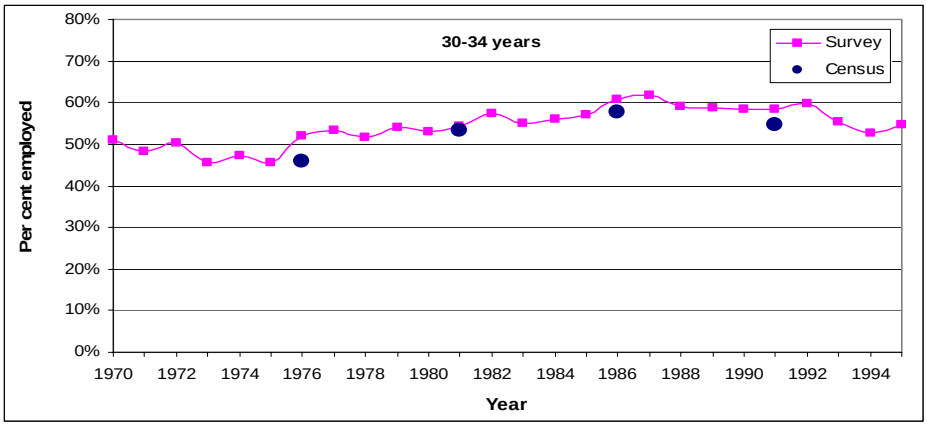


Figure A1.5

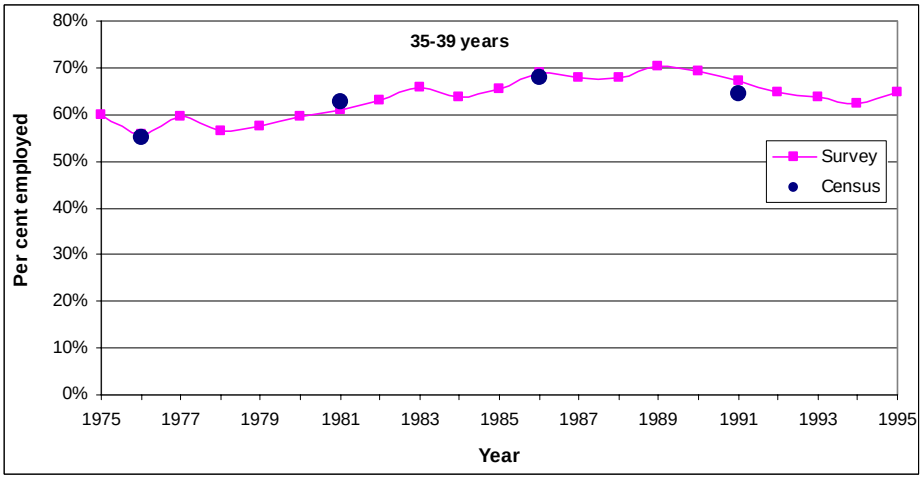
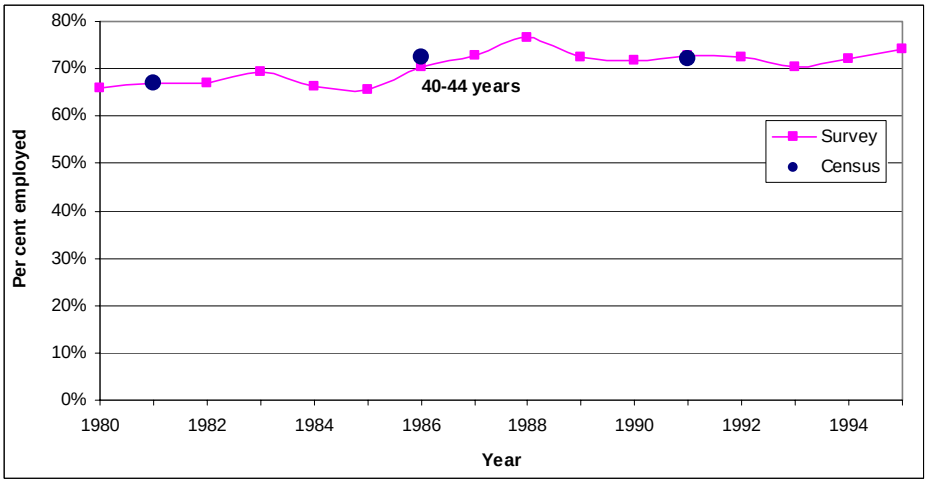


Figure A1.6



APPENDIX 2 : ALL WOMEN IN 1995

Table A2.1 Work histories of all women in 1995. Frequency of spell (%).

Number of spells	Sequencing of work and non-work spells	%
1	work (continuous)	6.1
1	non-work (never worked)	3.8
2	work/non-work (out-spell)	7.3
2	non-work/work (delayed)	9.2
3	work/n-w/work (1 interruption)	12.0
3	n-w/work/n-w (delayed + out-spell)	6.4
4	work/n-w/work/n-w	6.3
4	n-w/work/n-w/work	9.5
5	work/n-w/work/n-w/work	7.9
5	n-w/work/n-w/work/n-w	3.9
6	work/n-w/work/n-w/work/n-w	3.1
6	n-w/work/n-w/work/n-w/work	5.8
7	work/n-w/work/n-w/work/n-w/work	4.3
7	n-w/work/n-w/work/n-w/work/n-w	2.0
8+	multiple work/n-w	12.4
Total % N =		100 2983

Table A2.2 Frequency distribution of total spells by current age (%).

	20-29	30-39	40-49	50-59	Total
# spells					
1	20.0	8.2	6.6	4.0	10.0
2	29.3	15.2	10.8	9.8	16.5
3	18.2	17.5	19.0	19.3	18.4
4	14.8	15.5	15.9	17.9	15.8
5+	17.7	43.6	47.7	49.1	39.3
Total	100	100	100	100	100
N =	730	937	836	481	2984

All *p* values significant at $p < 0.01$

Table A2.3 Frequency distribution of work and non-work spells by current age (%).

	Work					Non-work				
# spells	20-29	30-39	40-49	50-59	Total	20-29	30-39	40-49	50-59	Total
0	9.7	2.4	1.6	1.5	3.8[16]	10.3	5.9	5.0	2.5	6.2[17]
1	49.1	27.7	20.0	17.2	29.1	47.7	28.3	27.0	25.8	32.3
2	27.2	32.2	32.8	35.7	31.7	29.5	28.6	30.7	32.8	30.1
3	11.0	19.2	22.5	23.0	18.7	10.3	19.7	18.5	19.3	17.0
4	2.7	11.2	13.3	11.6	9.8	1.8	11.3	11.0	10.4	8.7
5+	0.3	7.4	9.8	11.0	6.9	0.4	6.2	7.8	9.1	5.7
Total	100	100	100	100	100	100	100	100	100	100
N =	729	936	835	482	2982	729	936	837	481	2983

All *p* values significant at $p < 0.01$

[16] Corresponds to 'non-work' in Table A2:1
[17] Corresponds to 'work' in Table A2:1

Table A2.4 Mean number and duration in years of total, work and non-work spells and proportion of potential working life in work by current age (%).

	20-29	30-39	40-49	50-59
Mean # total spells	2.95	4.61	4.94	5.07 **
Mean # work spells	1.49	2.36	2.62	2.66**
Mean # non-work spells	1.47	2.25	2.32	2.42**
Mean duration of total spells	3.58	5.87	8.24	10.41**
Mean duration of work spells	3.58	6.27	8.88	11.05**
Mean duration of non-work spells	2.78	4.30	6.05	8.09**
Prop. potential working life worked	0.53	0.60	0.61	0.60**

One way analysis of variance : difference between means significant at: ** p <0.01

Table A2.5 Frequency distribution of total, work and non-work spells, mean number and duration in years by childbearing status (%).

	Total			Work			Non-work		
# spells	No child	≥ 1	Total	No child	≥ 1	Total	No child	≥ 1	Total
0	-	-	-	7.2	3.0	3.8	14.8	4.1	6.1
1	21.9	7.1	9.9	48.6	24.4	29.1	45.7	29.1	32.3
2	29.3	13.5	16.5	23.9	33.6	31.7	22.3	32.0	30.1
3	13.9	19.5	18.4	12.1	20.3	18.8	10.7	18.5	17.0
4	13.0	16.5	15.8	5.3	10.9	9.8	4.6	9.7	8.8
5+	21.9	43.4	39.3	3.0	7.8	6.9	1.9	6.6	5.7
Total %	100	100	100	100	100	100	100	100	100
N =	570	2410	2980	570	2411	2981	569	2411	2980

All p values significant at <0.01

Table A2.6 Mean number and duration in years of total, work and non-work spells and proportion working life in work by childbearing status (%).

	No child	≥ 1
Mean # total spells	3.23	4.64**
Mean # work spells	1.71	2.40**
Mean # non-work spells	1.53	2.24**
Mean duration of total spells	5.17	7.07**
Mean duration of work spells	6.62	7.32**
Mean duration of non-work spells	2.30	5.66**
Proportion of life worked	.65	.57**

One way analysis of variance : difference between means significant at: p ** <0.01

Table A2.7 Frequency distribution of total, work and non-work spells by educational achievement (%).

	Total				Work				Non-work			
# spells	None	Sec.	T/high.	Total	None	Sec.	T/high	Total	None	Sec.	T/high	Total
0	-	-	-	-	6.0	5.5	1.7	3.8	3.2	10.2	5.5	6.1
1	9.3	15.8	7.2	10.0	29.4	31.8	27.5	29.1	37.4	38.0	26.7	32.3
2	17.0	16.5	16.3	16.5	33.1	33.3	30.2	31.7	33.1	28.4	29.6	30.1
3	23.5	21.1	14.5	18.4	17.8	16.7	20.3	18.8	16.0	13.6	19.3	17.0
4	14.7	14.3	17.2	15.8	8.6	8.6	11.0	9.8	6.9	6.0	11.1	8.7
5+	35.5	32.3	44.9	39.3	5.1	4.0	9.4	6.9	3.4	3.7	7.8	5.7
Total	100	100	100	100	100	100	100	100	100	100	100	100
N =	729	777	1476	1172	729	777	1475	2981	729	777	1474	2980

All *p* values significant at <0.01

Table A2.8 Mean number in years of total, work and non-work spells and proportion of potential working life in work by educational achievement (%).

	None	Secondary	Ter/High.
Mean # total spells	3.50	3.30	3.76 **
Mean # work spells	2.08	2.02	2.39 **
Mean # non-work spells	1.96	1.78	2.27 **
Mean duration total spells	8.35	6.26	6.12 **
Mean duration work spells	7.22	7.08	7.23
Mean duration non-work spells	8.04	4.36	3.94 **
Prop. potential working life worked	0.48	0.62	0.62 **

** One way analysis of variance, difference between means significant at: *p* <0.01

Table A2.9 Frequency distribution of total, work and non-work spells by ethnicity (%).

	Total			Work			Non-work		
# spells	Maori	Non-Maori	Total	Maori	Non-Maori	Total	Maori	Non-Maori	Total
0	-	-	-	6.5	3.4	4.0	4.0	6.4	6.0
1	10.5	9.9	10.0	34.5	28.3	29.4	37.2	31.6	32.6
2	20.0	16.0	16.7	31.2	31.8	31.7	32.6	29.8	30.3
3	21.3	18.0	18.6	16.4	19.1	18.6	16.4	17.1	17.0
4	16.4	15.8	15.9	7.9	10.1	9.7	6.9	9.0	8.6
5+	31.8	40.3	38.9	3.6	7.4	6.7	3.0	6.1	5.5
Total %	100	100	100	100	100	100	100	100	100
N =	506	2475	2980	506	2475	2981	506	2475	2980

All *p* values significant at *p* <0.01

Table A2.10 Mean number in years of total, work and non-work spells and proportion of potential working life in work by ethnicity (%).

	Maori	Non-Maori
Mean # total spells	3.93	4.43 **
Mean # work spells	1.98	2.31 **
Mean # non-work spells	1.95	2.13 **
Mean duration total spells	6.25	6.77
Mean duration work spells	5.86	7.36 **
Mean duration non-work spells	5.60	5.01 *
Prop. potential working life worked	0.49	0.60 **

One-way analysis of variance, difference between means significant at: ** $p<0.01$; * $p<0.05$

APPENDIX 3: COHORT PERSPECTIVES UNTIL AGE 30

Table A3.1 Frequency distribution of spells experienced by age 30 by birth cohort. Women aged 30+ in 1995 (%).

Number of spells	Sequencing by work and non-work spells	Birth Cohort 1956-65 Age 30-39 in 1995	Birth Cohort 1946-55 Age 40-49 in 1995	Birth Cohort 1936-45 Age 50-59 in 1995
1	work (continuous)	9.3	9.4	8.5
1	non-work (never worked)	3.3	3.1	2.9
2	work/non-work (out-spell)	12.2	17.3	23.6
2	non-work/work (delayed)	9.1	10.4	7.0
3	work/n-w/work (1 interruption)	10.6	11.3	13.8
3	n-w/work/n-w (delayed + out-spell)	9.9	12.4	15.8
4	work/n-w/work/n-w	5.7	6.4	8.8
4	n-w/work/n-w/work	9.4	6.7	5.3
5+	multiple work/n-w	30.5	22.9	14.4
Total		100	100	100
N		936	820	477

All p value significant at p <0.01

Table A3.2 Frequency distribution of total, work and non-work spells experienced by age 30 by birth cohort. Women aged 30+ in 1995 (%)

	Total				Work				Non-work			
# spells	1956-65	1946-55	1936-45	Tot.	1956-65	1946-55	1936-45	Tot.	1956-65	1946-55	1936-45	Tot.
0	-	-	-	-	3.3	3.1	2.9	3.2	9.3	9.5	8.5	9.2
1	12.6	12.6	11.4	12.3	40.4	49.6	54.9	46.9	35.1	42.2	47.3	40.4
2	21.3	27.7	30.6	25.6	31.2	28.6	30.4	30.0	30.1	31.7	34.4	31.6
3	20.4	23.7	29.5	23.6	16.1	13.4	9.4	13.7	15.9	12.1	7.1	12.6
4 (+)	15.2	13.2	14.1	14.2	9.0	5.3	2.5	6.2	9.5	4.6	2.7	6.2
5+	30.6	22.9	14.3	24.2								
Total	100	100	100	100	100	100	100	100	100	100	100	100
N =	936	835	481	2252	937	835	481	2252	936	834	482	2252

All p values significant at $p < 0.01$

Table A3.3 Frequency distribution of total spells experienced by age 30 for birth cohorts by childbearing status. Women aged 30+ in 1995 (%).

	1956-65			1946-55			1936-45		
# spells	None	1+	Total	None	1+	Tot.	None	1+	Total
1	20.7	9.6	12.6	21.9	9.6	12.5	20.5	9.4	11.2
2	20.7	21.6	21.3	27.6	27.9	27.8	30.8	30.5	30.6
3	15.5	22.3	20.5	16.2	25.9	23.7	16.7	32.3	29.7
4	15.1	15.2	15.2	10.2	13.9	13.1	15.4	13.9	14.1
5+	27.9	31.3	30.4	23.5	22.7	22.9	16.7	13.9	14.3
Total	100	100	100	100	100	100	100	100	100
N =	251	686	937	196	638	834	78	403	481

All p values significant at p <0.05

Table A3.4 Frequency distribution of total spells experienced by age 30 by birth cohort and educational achievement. Women aged 30+ (%)

	1956-65				1946-55				1936-45			
# spells	None	Sec.	High	Total	None	Sec.	High	Total	None	Sec.	High	Total
1	15.6	14.8	10.3	12.7	15.9	14.7	9.8	12.5	13.0	7.1	11.7	11.4
2	29.7	19.4	19.0	21.3	33.1	31.8	23.3	27.7	39.0	33.3	22.9	30.6
3	21.4	23.3	18.0	20.4	21.2	20.0	26.8	23.9	25.4	27.4	33.6	29.5
4	8.9	17.9	16.1	15.1	14.2	14.7	11.9	13.1	15.3	14.3	13.5	14.3
5+	24.5	23.6	36.6	30.5	15.5	18.8	28.1	22.8	7.3	17.9	18.4	14.3
Total	100	100	100	100	100	100	100	100	100	100	100	100
N =	192	263	484	939	263	170	437	833	177	84	223	484

All p values significant at p <0.01

Table A3.5 Frequency distribution of total spells experienced by age 30 by birth cohort and ethnicity. Women aged 30+ in 1995 (%)

	1956-65			1946-55			1936-45*		
# spells	Maori	Non-Maori	Tot.	Maori	Non-Maori	Tot.	Maori	Non-Maori	Tot.
1	10.6	12.9	12.5	20.2	11.9	12.8	18.2	10.8	11.7
2	20.6	21.3	21.2	29.8	27.5	27.8	41.8	29.7	31.1
3	22.4	20.3	20.7	19.0	24.1	23.6	20.0	30.5	29.2
4	14.7	15.2	15.1	11.9	13.3	13.1	10.9	14.4	14.0
5+	31.8	30.3	30.6	19.0	23.2	22.7	9.1	14.6	14.0
Total	100	100	100	100	100	100	100	100	100
N =	170	769	939	84	730	814	55	417	472

* p value significant at p <0.10

APPENDIX 4: COHORT PERSPECTIVES BETWEEN 30-39

Table A4.1 Frequency distribution of spells experienced between ages 30-39 by birth cohort. Women aged 40+ in 1995 (%)

Number of spells	Sequencing by work and non-work spells	Birth Cohort 1946-55 Age 40-49 in 1995	Birth Cohort 1936-45 Age 50-59 in 1995
1	work (continuous)	29.6	25.4
1	non-work (never worked)	13.1	22.9
2	work/non-work (out-spell)	6.9	6.4
2	non-work/work (delayed)	21.4	21.8
3	work/n-w/work (1 interruption)	9.3	8.1
3	n-w/work/n-w (delayed + out-spell)	4.7	4.6
4	work/n-w/work/n-w	1.9	1.2
4	n-w/work/n-w/work	5.7	5.0
5+	multiple work/n-w	7.4	4.6
Total		100	100
N		835	481

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