WORKFORCE PARTICIPATION PATTERNS
OVER THE LIFE COURSE AND THE
ASSOCIATION WITH CHRONIC DISEASES
– A GENDERED APPROACH

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Thesis submitted for the degree of
Doctor of Philosophy (Gender and Health)
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# Abbreviations

<table>
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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ABS</td>
<td>Australian Bureau of Statistics</td>
</tr>
<tr>
<td>AIC</td>
<td>Akaike Information Criterion</td>
</tr>
<tr>
<td>ALSWH</td>
<td>Australian Longitudinal Study on Women’s Health</td>
</tr>
<tr>
<td>BIC</td>
<td>Bayesian Information Criterion</td>
</tr>
<tr>
<td>BMI</td>
<td>Body Mass Index</td>
</tr>
<tr>
<td>Adj. BIC</td>
<td>Adjusted Bayesian Information Criterion</td>
</tr>
<tr>
<td>FT</td>
<td>Full Time (work)</td>
</tr>
<tr>
<td>LCA</td>
<td>Latent Class Analysis</td>
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<tr>
<td>LHH</td>
<td>Life History and Health</td>
</tr>
<tr>
<td>MLR</td>
<td>Multinomial Logistic Regression</td>
</tr>
<tr>
<td>NHMRC</td>
<td>National Health and Medical Research Council</td>
</tr>
<tr>
<td>NSW</td>
<td>New South Wales</td>
</tr>
<tr>
<td>NPW</td>
<td>Not in Paid Work</td>
</tr>
<tr>
<td>PT</td>
<td>Part Time (work)</td>
</tr>
<tr>
<td>SF - 36</td>
<td>Sort Form – 36 Survey</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>WHA</td>
<td>Women’s Health Australia</td>
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# Glossary of Terms

<table>
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<tr>
<th>Terms</th>
<th>Description</th>
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<tr>
<td>Active ageing</td>
<td>This term adopted by WHO signifies the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age.¹</td>
</tr>
<tr>
<td>BMI</td>
<td>Body Mass Index (BMI) is a simple index of weight-for-height that is commonly used to classify underweight, overweight and obesity in adults. It is defined as the weight in kilograms divided by the square of the height in metres (kg/m²).²</td>
</tr>
<tr>
<td>Chronic diseases</td>
<td>Diseases of long duration, generally slow progression and are major cause of mortality and morbidity worldwide.³</td>
</tr>
<tr>
<td>Dependant/Outcome or Response variable</td>
<td>The dependent variable represents the output or effect, which implies the event studied and expected to change whenever the independent variable is altered.⁴</td>
</tr>
<tr>
<td>Dependency ratio</td>
<td>The number of dependent persons per 100 working persons in a given population. Thus, a dependency ratio of 66.4 means that there are 66.4 dependent persons per 100 working age (presumably economically productive) people.⁵</td>
</tr>
<tr>
<td>Gender</td>
<td>Refers to a social construct regarding culture-bound conventions, roles, and behaviours for, as well as relations between and among, women and men and boys and girls. Gender roles vary across a continuum and both gender relations and biologic expressions of gender vary within and across societies, typically in relation to social divisions premised on power and authority (e.g., class, race/ethnicity, nationality,</td>
</tr>
<tr>
<td>Terms</td>
<td>Description</td>
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<tr>
<td>Indicator variable</td>
<td>In statistics and particularly in regression analysis, indicator variable (also called dummy variable) is one that takes the value 0 or 1 to indicate the absence or presence of a categorical effect that may be expected to shift the outcome/response.⁴</td>
</tr>
<tr>
<td>Intercept ( (\beta_0) )</td>
<td>In relation to LCA with covariates, intercepts represent the odds of membership in latent class ‘c’ in relation to the reference latent class ‘C’ when effect of covariate ‘X’ is not taken into account ((X=0)).⁷ The word effect here does not indicate causality, but is used in statistical sense.</td>
</tr>
<tr>
<td>Latent variable</td>
<td>It is an unobserved, underlying and error free posited to explain a set of observed responses to indicators. The latent variables are the causes of the observed variables, but observed variables do not cause latent variables.⁸</td>
</tr>
<tr>
<td>Latent Class Analysis (LCA)</td>
<td>It is a latent variable model in which both the latent variable and its indicators are categorical. It is considered a person-oriented approach as it emphasizes on looking for subtypes of individuals exhibiting similar patterns of characteristics.⁷ Latent class models are used to identify underlying (unobserved) subgroups in a population at a particular time point.</td>
</tr>
<tr>
<td>Life course approach</td>
<td>A life course perspective focuses on understanding how early life experiences shape health across an entire life time and potentially across generations including social and physical context along with biological factors, over time.⁹</td>
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<tr>
<td>Terms</td>
<td>Description</td>
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<tr>
<td>Posterior probability</td>
<td>Posterior probability refers to each individual’s probability of membership in each latent class, conditional of response pattern of ‘yes’ or ‘no’. Its value near ‘1’ suggested high certainty about true class membership.</td>
</tr>
<tr>
<td>Population ageing</td>
<td>It refers to a decline in the proportion of children and young people and an increase in the proportion of people aged 60 years and over.</td>
</tr>
<tr>
<td>SF – 36 Survey</td>
<td>The SF-36 is a multi-purpose, short-form health survey with only 36 questions. It yields an 8-scale profile of functional health and well-being scores as well as psychometrically-based physical and mental health summary measures and a preference-based health utility index.</td>
</tr>
<tr>
<td>Work</td>
<td>In context of this thesis and research, the definitions for full time and part time work are adapted from Australian Bureau of Statistics (ABS).</td>
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<tr>
<td></td>
<td><strong>Full time work:</strong> Workers are considered fully employed when they work 35 hours or more with reference to working hours.</td>
</tr>
<tr>
<td></td>
<td><strong>Part time work:</strong> People working less than 35 hours a week are defined as part time employees by ABS.</td>
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</table>
‘Population ageing’ raises many challenges for governments, such as continued and prolonged workforce participation of men and women over their life course. This research aimed to i) identify and compare workforce participation patterns of men and women over the life course; ii) investigate the associations between workforce participation patterns, early life factors and adult life factors over the life course; iii) explore longitudinal associations between chronic diseases and workforce patterns, while considering the influence of various health and socio-demographic factors. Three different data sources – the ‘45 and Up Study’, the Australian ‘Life History and Health Survey’ and the ‘Australian Longitudinal Study on Women’s Health’ were used. Latent class analysis (LCA), LCA with classify-analyse approach, logistic regression and multinomial regression were used in five different studies to identify and explore patterns of workforce participation and its different associations over the life course, with a gendered perspective. Findings from the studies indicate that workforce participation patterns over the life course are very different for men and women. While men were found to be mostly engaged in full time paid work, women were more likely to work part time. Also, many men may decrease work after age 55, and many women had lower workforce participation over the life course. The work patterns of young women without children were very similar to men – majority working full time. Chronic diseases (diabetes, asthma, depression and arthritis) and other early and adult life factors were associated with work patterns. However, these associations varied by gender and also dependent on how men and women responded to their long term health issues and various circumstances affecting them over the life course. Therefore, it is important to consider the role of gender in shaping workforce patterns and their association with chronic diseases over the life course.