

## Chapter 2

### Literature Review

#### 2.1 Introduction

In this chapter, we review the literature that deals with the factors determining the labour market status of NESB and Australian-born women in Australia, and investigate the relationship between their labour market status, socio-economic characteristics, demographic factors and human capital variables. It also examines the literature relevant to the extent to which NESB women face discrimination in the Australian labour market.

The human capital approach and the segmented labour market approach are widely used for these types of analyses. There is a large literature along these lines in Australia and overseas. Thus, our review of literature is divided into the following major four groups: studies on participation, studies on occupational status, studies on unemployment and other aspects of labour market disadvantage. These are again divided into econometric and non-econometric works.

In this book our focus is on economic explanations of labour market status, and on human capital variables in particular. Our principal focus is on the effects of English skills and education on labour market participation, primary sector employment and unemployment. It is of course clear that a range of demographic factors is also relevant in modelling labour market status. In this chapter we introduce the reader to the breadth of the human capital literature that is relevant and for the most part report only on human capital effects. In subsequent chapters where we construct models of participation, primary sector employment and unemployment, we will also refer to demographic variables commonly used in the literature.

## 2.2 Studies on Participation

Some of the main literature on labour market participation is reviewed in the following sub-sections: (1) Australian econometric studies of participation, (2) Australian non-econometric studies of participation, (3) foreign econometric studies of participation and (4) foreign non-econometric studies of participation.

### 2.2.1 *Australian Econometric Studies of Participation*

Since the 1980s, there has been much econometric analysis of labour market participation. These works include that of Miller and Volker (1983), Evans (1984, 1988), Ross and Saunders (1993), VandenHeuvel and Wooden (1995, 1996), Lucich (1997), Wooden and VandenHeuvel (1997), Gray, Qu, de Vaus, & Millward (2003), Mumford and Parera-Nicolau (2003) and Birch (2005), which are mainly based on regression, probit and logit models. In this section we outline these important contributions of Australian econometric studies of participation. Further details of the works of these authors will be given in Chap. 3. Also see Table 2.1 for a summary that includes participation studies.

Miller and Volker (1983) examined the participation of married women in the labour market, using the 1976 Census of Population and Housing data. First, they used the Ordinary Least Square (OLS) method to estimate a standard labour supply function for married women. The estimated parameters were then compared with the estimated parameters obtained from the instrumental variable approach endogenising wage rates, and with a three-equation system endogenising fertility as well as wages. They used human capital variables in their analysis and concluded that the most important indirect determinant of the labour supply of married women was education.

Evans (1984) investigated the work experiences of migrant women, which covered a broad range of topics related to women's work roles, using the 1981 Census data. She used a regression model to analyse the migrant women's labour market participation with a range of human capital variables including education and English skills. Evans concluded that women in all groups were more likely to participate in the labour market if they had more education, except Mediterranean and Eastern European women. However, she found that English skills had no significant influence on the labour market participation of any group.

Evans (1988) examined some key influences on married women's workforce participation, using the National Social Science Survey, 1984–1985 data. She used a regression model to analyse labour market participation of Australian wives, using human capital variables and concluded that better-educated wives were more likely to participate in the labour market.

Ross and Saunders (1993) analysed and compared the labour supply behaviour of sole mothers and married mothers, using the 1986 Income Distribution Survey data. They used a probit model to analyse the women's participation in the labour

**Table 2.1** Summary of Australian econometric literature

Researchers	Year	Dependent	Technique <sup>a</sup>	Data	Results
Miller and Volker	1983	Participation	OLS key indep = education, family income, national origin	1976 Census	Married women's participation in the labour market positively associated with education and negatively associated with husband's income. Overseas-born women were more likely participated than Australian-born women
Evans	1984	Participation, unemployed, occupational status	OLS key indep = education, English skills	1981 Census	Participation and occupational status positively associated with education and English skills and unemployment negatively associated with education and English skills. Eastern European women were the most likely to be in the labour market, unemployed and highest paid. Mediterranean women were the least likely to be in the labour market, low unemployment rates, occupying lowest status position, and receive lowest wages
Kelley and McAllister	1984	Occupational status, income	OLS key indep = education	1973 ANU Social Mobility Survey	Occupational status and income positively associated with education. However, better-educated Mediterranean women were at a disadvantage, while those with less education and status actually did better
Miller	1984	Unemployment	Logit Key indep = educational qualifications	1976 Census	Teenage unemployment negatively associated with educational qualifications. However, unemployment rates differ according to qualifications, trade and technical qualifications were associated with lower unemployment rates
Brooks and Volker	1985	Unemployed, employed, not in the labour market and hours of work	Logit and ordered probit Key indep = educational qualifications, English skills	1981 Census	Employment and participation of individual positively associated with educational qualifications and English skills and better-educated women spend more time working

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Table 2.1 (continued)

Researchers	Year	Dependent	Technique <sup>a</sup>	Data	Results
Inglis and Stromback	1986	Unemployment	Logit Key indep = English Skills, Educational qualifications	1981 Census	Migrants' unemployment status negatively associated with specific migrant characteristics: Period of residence, English skills, and birthplace. Newly arrived migrants had higher unemployment rates. However, tendency to be unemployed falls as the period of residence in Australia increases
Stromback	1986	Unemployed	Logit Key indep = English skills, education	1981 Census	Migrant's unemployment status negatively associated with education and English skills. However, no significant relationship between English language and unemployment was found for migrant women
Miller	1986a	Unemployed, employed	Logit Key indep = education	1983 Manpower Programs Survey	Migrant's unemployment in the first year of arrival negatively associated with Education. The significantly higher unemployment rates experienced by females born in Vietnam and Italy who arrived as adult
Miller	1986b	Unemployment	Logit Key indep = educational qualification, English skills	1981 Census	Youth unemployment negatively associated with educational qualifications, English skills and period of residence. Foreign born and females had higher unemployment rates
Brooks and Volker	1986	Unemployment	Hazard function Key indep = age, marital status	1984 ABS Survey	The probability of leaving unemployment positively associated with age and marital status The probability of leaving unemployment decreased as the duration of unemployment increased. Married and older females had the highest probability of leaving unemployment
McAllister	1986	Unemployed	Path analysis Key indep = education, English skills, experience	1983 AIMA Survey	Youth unemployment negatively associated with education, experience and English skills

Evans and Kelley	1986	ANU2 status	OLS key indep = educational qualifications, English skills, experience	1981 Census	Occupational status positively associated with educational qualification, English skills and experience. The differences in the occupational status of migrants and Australian-born reflected differences in endowments not discrimination
Miller	1987	Status attainment	Ordered probit Key indep = educational attainment, English skills, experience	1981 Census	Occupational attainment of migrants positively associated with education and English skills and negatively associated with experience. They concentrated in low-ranked occupations and the relatively minor influence of education on the occupational attainment
Evans	1987	Occupational status	OLS key indep = education, English skills	1981 Census	Occupational attainment positively associated with education and English proficiency. Monolingual English usage had no effect on occupational attainment
Beggs and Chapman	1987	Unemployment, income	Probit, regression Key indep = education, experience	1981 Census	Unemployment negatively associated with education and experience and wages positively associated with education. However, at the highest level of education considered migrants had a greater probability of unemployment than Australian-born
Evans	1988	Participation	OLS key indep = education, feminist ideology	1984-1985 National Social Survey	Labour market participation of Australian wives positively associated with education and feminist ideology
Wooden and Robertson	1990	Unemployed, employed and non-participation	Logit Key indep = education, English skills	1986 Census, Labour market Survey 1987	Labour market success of migrants positively associated with English skills and education However, amongst females' education was less important. The age of youngest child, income of husband had marked effects on labour market participation of females

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Table 2.1 (continued)

Researchers	Year	Dependent	Technique <sup>a</sup>	Data	Results
Flatau and Hemmings	1991	Unemployment	Probit Key indep = educational qualifications, experience	1985 ALS	Educational qualifications and experience significantly reduced the probability of unemployment of young migrant females
Jones and McAllister	1991	Unemployment	Logit, OLS key indep = educational Qualification, English skills	1988 Multicultural Australia survey	Unemployment negatively associated with educational qualifications and English skills
Evans and Kelley	1991	Occupational status, income	OLS key indep = education, English skills, experience	1981 Census	Migrants' occupational status and income positively associated with education, English skills and experience. Migrants and their Australian-born children received jobs and earning that were commensurate with their education, experience and skills. There was little or no discrimination in jobs and pay
Jones	1992	Unemployment, ANU3 Scale, earnings	Logit, OLS Indep = educational qualification, English skills	1986 Census	Unemployment negatively associated with educational qualifications and English skills. Employment status and earnings positively associated with these variables
Vaughan	1992a	Occupational attainment	Logit Key indep = education, experience, English skills	1986 Census	Migrants' occupational attainment positively associated with human capital variables. However, differences in occupational attainment between migrants and Australian-born were largely product of the difficulties of transferring human capital characteristics
Vaughan	1992b	Occupational attainment	Logit Key indep = education, experience	1986 Census	Gender differences in occupational attainment were significant, which were also the product of differences in years of education and labour market experience

Ross and Saunders	1993	Participation, employment, full-time employment	Probit Key indep = education, experience	1986 Income Distribution Survey	Mothers' labour market participation, employment and full-time employment positively associated with education. However, labour market participation negatively associated with experience and employment and full-time employment positively associated with experience
VandenHeuvel and Wooden	1995	Participation in training (in-house, employer-supported external, unstructured on-the job, employer- supported) Occupational status	Logit Key indep = highest educational level (Australia and overseas), occupational experience OLS key indep = education, English skills	1993 ABS Survey of Training and education	Participation in training positively associated with highest level of education and negatively associated with overseas education and occupational experience. NESB women were in a disadvantage position in terms of participation in training
McAllister	1995	Occupational status	OLS key indep = education, English skills	1988–1989 Multicultural Australia Survey	Migrants' occupational status positively associated with educational qualifications and English skills. Their occupational status reduced when they commence work in Australia and by the consequent impact of this lower than expected status on migrants working careers
VandenHeuvel and Wooden	1996	Labour market status (full-time, part-time employment)	Logit Key indep = English skills, qualifications	1991 Census, 1993 ABS survey: Working Arrange- ment, Training and Education	Labour market status positively associated with English skills and qualification. English skills and high level of qualifications positively associated with part-time employment than full-time employment. NESB women were more likely to secure full-time employment

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Table 2.1 (continued)

Researchers	Year	Dependent	Technique <sup>a</sup>	Data	Results
Lucich	1997	Participation, hours of work, wage	Probit, OLS key indep = education, experience	1986 ABS Income and Housing Survey	Labour market participation, wages, and hours of work positively associated with education. Participation negatively associated with experience and wages and hours of work positively associated with experience. The level of education did not significantly influence the wages paid to migrant women
Williams, Brooks and Murphy	1997	Employed, unemployed and not in the labour market	Logit Key indep = educational Qualifications, English skills	1993–1995 Longitudinal Survey of Migrants	Unemployment negatively associated with English skills and educational qualifications and employment positively associated with these variables
O'Loughlin and Watson	1997	Unemployed and long term unemployed	Logit Key indep = education and English skills	1991 Census; 1993 Training and Educational Experience, Labour Market Status; and case studies	Long-term unemployment negatively associated with education and English skills. The hidden unemployed were predominantly composed of women with dependent children. Being mature aged was the factor most significantly associated with increased long-term unemployed
Wooden and Vanden-Heuvel	1997	Part-time participation, full-time participation and not in the labour market	Logit Key indep = educational qualifications, English skills	1991 Census	Full-time participation positively associated with educational qualifications and English skills and part-time participation negatively associated with poor English skills
Evans and Lukic	1998	Participation	OLS key indep = education, English skills	1981 Census	Labour market participation of Yugoslavian women positively associated with education and English skills



Reiman	1998	Hourly wage rate	OLS key indep = years of schooling, experience, workplace training, English skills, occupation	1995 AWIRS	Wage rate positively associated with work experience, training, education, and English skills. There were significant wage differences between female/male. Gender wage gaps were greater for English background than non-English background employees. Enterprise bargaining had negatively affected the gender wage gap in Australia
Gray and Hunter	1999	Participation, employed	Minimum $\chi^2$ method Key indep = education, English skills	1986, 1991 and 1996 Census	Labour market participation and Community Development Employment Project for indigenous women negatively affected the education (post secondary) and English skills
Gray, Qu, Vaus and Millward	2003	Employed or not employed	Logit Key indep = education, English proficiency	1996 Australian Census	The probabilities of employment were generally similar for Australian single and other mothers. Having a low level of educational attainment and poor spoken English was negatively associated with employment probabilities and had a larger negative effect on lone mothers than couple mothers
Thapa	2004	Unemployment	Logit Key indep = education, English proficiency	1990 Income Distribution Survey, 2001 household, Income and Labour dynamics in Australia	The probability of unemployment for male migrants remained consistently higher than for an average native-born Australian. The risk of unemployment of migrants (male) was negatively associated with education and English proficiency. The employment disadvantage of migrants in Australia has not diminished in spite of greater emphasis on skilled migration in the post-1990 period

<sup>a</sup> Key indep indicates key independent variables in the analysis.

market and used a range of human capital variables that included education and labour market experience. They concluded that more highly educated mothers were more likely to participate in the labour market but experience appeared to have little impact.

VandenHeuvel and Wooden (1995) examined the labour market participation of NESB women in various types of work-related training, using the 1993 Survey of Training and Education (SOTE) data. They used a binary logit model to estimate the odds of participating in a training program. They used a range of human capital variables that included education, occupational experience and English language skills. They concluded that NESB women had lower rates of participation in work-related training than other women. For NESB women, English language difficulties were associated with a reduced probability of training, and better-educated women had a greater probability of receiving training.

VandenHeuvel and Wooden (1996) also investigated the factors that were associated with participation in training among NESB women, using the 1993 Survey of Training and Education data obtained from Australian Bureau of Statistics (ABS).<sup>1</sup> They used a logit model to examine differences in participation in training for part-time and full-time employed women. They concluded that NESB women were less likely to participate in work-related training. English language skills, rather than NESB migrant status per se, were more closely associated with less access to job training.

Lucich (1997) compared the labour supply and wages of migrant and Australian-born married women, using data from the 1986 Income and Housing Survey. The author used a two-stage probit model to estimate the participation decisions of married women workers.<sup>2</sup> Separate labour market participation, hours of work and wage functions were estimated for these groups.<sup>3</sup> The author used a range of human capital variables including education and labour market experience, and concluded that for both groups of women the probability of participation in the labour market increased with the number of years of education, but experience did not have any significant effect.

Wooden and VandenHeuvel (1997) examined the differences in the labour supply behaviour of migrants and non-migrant married women using the 1991 Australian population Census data. They used a logit model to analyse the labour market participation and used a range of human capital variables that included education and English skills. They concluded that the likelihood of NESB married women's participation on a full-time basis increased with educational attainment and poor English language skills were obstacles to part-time participation.

Evans and Lukic (1998) examined the impact of resources and family-level cultural practices on migrant women's labour market participation, using the 1981 Census data. They used a regression model to analyse the participation patterns

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<sup>1</sup> VandenHeuvel and Wooden also analysed the labour market status and part-time employment of NESB women, which will be discussed in later sections.

<sup>2</sup> Lucich employed Heckman's two-stage procedure to correct for sample selectivity bias.

<sup>3</sup> An Oaxaca type decomposition of the wage differential was carried out to facilitate comparisons between the two groups.

of migrant women from the former Yugoslavia in Australia, and compared them to those of women from other countries. They found that participation patterns of migrant women from Yugoslavia were more dependent on education than were the participation patterns of other groups.

Gray and Hunter (1999) analysed the probability of employment and participation in the labour market for indigenous and non-indigenous males and females using data from the 1986, 1991 and 1996 Censuses. They estimated the models by using minimum  $\chi^2$  methods, using a range of human capital variables that included education and English skills. They concluded that for indigenous females, having a degree had no effect on the rate of labour market participation, but having a diploma appeared to reduce the rate of participation. Also, difficulty in speaking English was found to have no effect on participation.

### ***2.2.2 Australian Non-Econometric Studies of Participation***

Since the 1980s, there has been much research in Australia on labour market participation that has not used econometric analysis. This includes the work of Eccles (1982), Storer (1985), Alcorso and Harrison (1993), Junor, Gholamshahi, O'Brian, & Kringas (1994), Bertone (1995), Brooks and Williams (1996) and Markey, Kowalczyk, & Pomfret (2003). In this section we briefly outline their works. A brief summary of Australian non-econometric studies is shown in Table 2.2 that includes participation studies.

Eccles (1982) examined Australian women's labour market participation status using Census data from 1947 to 1981, and concluded that the labour market participation rate of women rose from 25% to 45% over that period.

Storer (1985) analysed the labour market status of migrants (male/female), using the 1981 Census data. He observed that women born in Greece, Yugoslavia, India, and Vietnam, had a higher labour market participation rate than the national average of 46%.<sup>4</sup>

Alcorso and Harrison (1993) examined the factors affecting the position of NESB women in the labour market, in the context of Australia's changing economy, using published and unpublished ABS statistical information. They concluded that during the period of 1959–1970 the participation rates of NESB women tended to be greater than for Australian-born women. However, the participation rates of English Speaking Background (ESB) and Australian-born women continued to increase in the last half of the 1980s while those of NESB women fell or grew more slowly. The participation rates of NESB women were by 1970 somewhat smaller than those of other women.

Junor et al. (1994) investigated NESB women's experience in various labour market programs. They used published and unpublished information from the relevant government departments, discussions with migrant women, community workers

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<sup>4</sup> Storer also examined migrant's unemployment and occupation status, which will be discussed later in other sections.

**Table 2.2** Summary of Australian non-econometric literature

Researchers	Year	Technique	Data	Results
Beaumont	1974	Descriptive statistics to show unemployment situations	1964–1972 Census, 1970 labour market studies, 1969–1972 survey with C.E.S.	Lack of employment opportunities found to be a serious problem for female unemployment in these areas, particularly longer duration of unemployment
Cox, Jobson and Martin	1976	Descriptive statistics to show the characteristics of the NESB women by work force participation, experience and perception	Collected from individual migrant women groups	Majorities of women were working in semi skilled or unskilled blue-collar occupations, as production-process workers in the garment industry
Storer, Faulkner, Ilic, Mitchell, Nikalaou and Pozos	1976	$\chi^2$ -test to find the association, among all cross correlation variables	Randomly collected from selected factories	In most factories migrant women work, they found conditions to be extremely poor in terms of temperature, pollution, noise, odour and physical danger
Eccles	1982	Descriptive statistics to examine the characteristics of the women's employment, unemployment, work experience and earnings	1947–1976 CBCS Census; 1966–1980 Census	The labour market participation of women has been grown since the 1947–1980, particularly amongst married women. They formed a greater proportion in almost all occupational groups. However, they had greater unemployment rate and less earning compared to men
Nord	1983	Documenting migrant women's experiences and rights	Surveying over 400 migrant women workers	It provided migrant women's experiences as they told a word of pain, suffering, anger, and often despair and hopelessness, including feeling of powerlessness, making them vulnerable to employers' intimidation
Lampugnani and Mansell	1984	Percentage of occupational inequality	1976 Census	The particular groups of women who enjoyed equal rights in theory, but were discriminated against in practice were the result of social stratification based on primarily on ethnic identification
Martin	1984	Describing the dimensions of oppression suffered by the NESB women	Red and Human Relation Reports (1976), TNC (1980)	Majority of NESB women who arrived as dependents of male migrants worked as semi and unskilled workers

Storer	1985	Migrant men and women's employment and occupational status by proportion	1981 Census	NESB Males and females had higher participation and unemployment rates. They were more likely to work as trade persons, production workers or labourers, and were under-represented in the professional and technical occupations
Chapman and Miller	1985	Descriptive statistics to examine labour market participation, unemployment, earnings and occupational structure	1981 Census	In the initial periods of residence migrants had high rates of unemployment. Their average-earnings were lower than other groups and occupational distributions approached that of Australian-born as length of residence increases
Turpin	1986	Job related problems showed through graphs, tables and descriptive statistics	Collected by Victorian Ethnic Affairs Commission, and Case studies	Segmentation in labour market placed culturally distinct waves of migrants in the least desirable occupational structures (including unemployment). Migrants' perceptions of barriers or problems
Martin	1986	Summarizing the information on ethnicity and class, work experiences and multiculturalism, migrant women and feminist	Literature and reports (APIC 1976) (TNC 1980), (WERC 1979)	Lacking social and economic capital, married to men employed in low-paid, low-status jobs made NESB women a cheap and dispensable source of labour for manufacturing industries
Eliadis, Colanero and Roussos	1988	Summarizing the NESB women's information on their special needs	Material written by and/or about women from NESB	The specific issues were identified mainly: mental health, language classes, childcare, health and safety
Chataway and Sachs	1990	Calculated in percentages to show NESB women's education, training, award restructuring, and participation in labour market, and special needs	1986 Census, 1987 & 1988 reports from the Department of Employment, Education, and Training	Migrant women did not have access to skilled and managerial positions in manufacturing. Employment varied according to region of birth, industry of employment, period of arrival and gender

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Table 2.2 (continued)

Researchers	Year	Technique	Data	Results
Kernmond, Luscombe, Strahan and William	1991	Frequency distributions and chi-square tests to identify the significant relationships between small business enterprises	Longitudinal survey collected over 12 years and a qualitative data from discussion with migrant business women	A high proportion of these women failed in business partly because of lack of education and work experience
Alcorso	1991	Descriptive statistics to show relationship between labour market status and other socio-economic factors	1986 Census, 1987 labour market survey	Newly arrived had better education, more qualifications and more formal job experience than the older settled group, yet this did not appear to improve their employment prospects in Australia. They initially found work in manufacturing sector and often performed difficult, unrewarding, socially undervalued work, despite their expertise
Barnett	1991	Percentage of women's occupational groups in public sector to show differences	1986 Census, case studies of 20 NESB women	Relationship between gender and culture was found to be extremely interdependent, but in work aspirations, attitude, and opportunities, the most influential factors were gender. Many women expressing a lack of confidence, regardless of the degree of success in their work
Misztal	1991	Summarizing the literature to identify the factors affecting the position of migrant women in the labour market in comparison with Australian	Available literature written for migrant women's class and gender inequalities	Migrant women tended to be employed in much lower-level, lower-status, and lower-paying occupations than Australian women
Yeatman	1992	Summarizing the data to policy analysis and evaluation on NESB women clothing workers	Interviewing CATU and other clothing industry workers and various reports	NESB women workers were at risk of low labour market status. Many of them fall outside the award, because their employers had not registered them as they work at home, which was outside the effective reach of the award

Webber, Campbell and Fincher	1992	Frequency distributions to show the level of segregation by gender and birthplace gender differences by skills use of support services and chi-square tests to identify differences and similarities in the experiences	1971–1986 Census, 1988 survey of 272 migrants from Yugoslavia, Greece and Vietnam	Level of industrial segregation and occupational immobility occurred for both women and men. After arrival in Australia, women seemed to have relatively less formal to specific training, which reduced their opportunity for occupational improvement
Bertone and Griffin	1992	Percentage of Migrants' participation in trade unions	Interviewing, case studies, and multi-lingual survey of trade union and their members	Unions provided limited special services to their female members and such members were not represented in the senior, decision-making positions within unions
Foster and Rado	1992	Summarizing the data	Published/unpublished materials, face to face interviews with NESB women	Personal factors account for the disadvantage many NESB women experienced as regards the fulfilment of their, education and training needs
Alcorso and Harrison	1993	Descriptive statistics and trend analysis for the NESB and ESB women's experiences of employment status, participation rates, training and responses to the (1990–2002) recession	Various published and unpublished ABS data from 1989–1990	During the period of 1959 to 1970 the overall participation rates of NESB women tended to be greater than Australian-born women. The very high unemployment rates of some groups of NESB women were identified. In recession, NESB women had suffered disproportionately from job loss compared to others
Bowen	1993	Describing NESB women's experience of retrenchment, employment prospects and English language training	Qualitative information about women's experiences following retrenchment	NESB women who were retrenched did not receive labour market assistance, because they face difficulties in communicating with officers

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Table 2.2 (continued)

Researchers	Year	Technique	Data	Results
Clapham, Schofield and Alcorso	1993	Descriptive statistics to examine the similarities and differences between Workcare and Workcover in Victoria and NSW	Information collected from government agencies, private organizations, interviews with injured person, and library research	Since work-injured NESB women comprised one of the 'least able' groups of injured workers, existing vocational rehabilitation provision amounts to a system of work-injury management that rendered them economically and socially disenfranchised
Junor, Gholamshahi, O'Brian and Kringas	1994	Percentage to show participation of NESB women in labour market programs	Department of social security (1993), ABS (1991), Bureau of Employment, Education and training (1992–1993)	NESB women's participation in the labour market programs shifted form training to work placements. NESB women appeared to be under-represented in work placement programs and they had concentrated in programs, such as JOB TRAIN, which had poorer employment outcomes
Keating	1994	Describing NESB Women's experiences of discrimination in employment and training	Data from Ethnic Communities Councils, Migrant Resources Centres, and consulting with organization, which supports NESB women	Discrimination against NESB women workers in employment/employment related opportunities existed, which were often indirect in nature
Keating	1994	Percentage to show childcare preferences by employment status, difficulties in organizing care school aged children experienced by student, length of employment, unemployed for 1–2 years, location, country of birth	Surveys of total 90 NESB women who were either employees or students of labour market training programs, from six different locations in Victoria and Queensland	The majority of women had major problems in relation to childcare, although the childcare needs for a small proportion of NESB women were being met



Alcorso and Hage	1994	Summarizing the enterprise bargaining and aspects of the experience	Series of interviews with NESB women workers, union officials, shop stewards and union activist	NESB women's experience of enterprise bargaining was marginally better than that of other women workers due to their greater representation in their heavily unionised of manufacturing
Ganguly	1995	Summarizing NESBwomen's positions and role in Australian society with particular attention to work	Literature and reports on NESB women	The binary categories viz., men vs. women, dominant culture vs. minority culture, traditional migrant vs. modern Australian; encouraged a clear domination; oppression divide that represented NESB women as passive victims
Bertone	1995	Summarizing NESB women's participation, attitude, and barriers in training and their overall role at the workplace	Interviews with stake holders, focus group discussion and existing literature	English language skills were important among many other barriers to NESB women's participation in training. The vast majority of them expressed desire to participate in training
Stephens and Bertone	1995	Descriptive statistics to show different employment status	Interviewing 436 food, metal, vehicle workers and 36 other personnel from manufacturing industries in Melbourne	NESB women were interested for training. High proportions of them did not get opportunities to perform different type of jobs
Warburton, Winocur and Rosenman	1995	Descriptive statistics to examine NESB women's retirement issues	Interviewing NESB women over 50	Many NESB women retired from work earlier than ESB women due to the problems in obtaining work and poor health. In addition, lower occupational status and lower incomes and shorter work histories, were reflected lower retirement incomes
Murphy	1995	Percentage to examine superannuation coverage rate by age, worker status and industry	1993 ABS, Superannuation Australia	NESB women had lower superannuation coverage than their Australian-born and ESB counterparts

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Table 2.2 (continued)

Researchers	Year	Technique	Data	Results
Brooks and Williams	1996	Descriptive statistics to examine the position of NESB women's labour market participation, unemployment, part-time employment, self-employment and employers, superannuation coverage, work related training and employment benefits	ABS, Labour market Australia (1996), Labour Market Survey (1989–1995), Person Not in the Labour Market (1992–1994), Training and Education Experience in Australia (1993), Families in Australia (1992), Superannuation Australia (1993), Working Arrangements Survey (1993)	NESB women had higher unemployment and long-term unemployment than ESB and Australian-born. Superannuation coverage of NESB women was lower. The working hours of NESB women appeared to be less flexible than for the other groups and had greater difficulty getting their qualifications recognized than those women from an ESB
Hawthorne	1996b	Describing the rise in skilled female migration, the barriers to employment for skilled NESB women and the work based challenges	Census (1991), Bureau of Immigration Research (1989), Bureau of Immigration and Population Research (1994)	Despite personal and professional transitions many NESB women succeed impressively in the Australian workforce

and study of relevant policy documents and theoretical literature. They concluded that during 1990–1993 recession, NESB women's participation in labour market programs shifted from training to work placement. More importantly, NESB women appeared to be under-represented in work placement programs and they had concentrated in programs, such as JOB TRAIN; which had poorer employment outcomes.

Bertone (1995) tried to identify practical models for dealing with the specific needs of NESB women in relation to training, using information from existing literature, interviews and discussions with NESB women. She observed that unduly high English language requirements for jobs, failure to recognize prior learning and cultural/linguistic skills were important among many other barriers to NESB women's participation in training. She also noted that despite these difficulties, the vast majority of the NESB women expressed a desire to participate in training as long as these barriers and problems were addressed.

Brooks and Williams (1996) examined migrant women's participation in the labour market, using data from the ABS (The Labour Market, Australia). They found that NESB women had lower participation rates than those of ESB and Australian-born women.

Birch (2005) reviewed the published Australian literature on the supply of labour of women. She reviewed the empirical evidence on the influence of an economic, demographic or institutional nature on women's labour supply in Australia. She concluded that, while there was a broad consensus concerning the influence of human capital, there was generally a wide range of findings in relation to each hypothesised determinant of the supply of labour. The findings appeared to be sensitive to model specification and estimation technique, and this suggests the need for caution in drawing strong conclusions from econometric analysis.

### ***2.2.3 Foreign Econometric Studies of Participation***

Since the 1960s, there has been much interesting and econometric analysis of labour market participation. These works include Mincer (1962), Barton and Zabalza (1980), Long and Jones (1981), Tienda and Glass (1985), Stier and Tienda (1992), Gurak and Kritz (1996), Gensler and Walls (1997), Waddoups (1997), Schoeni (1998), Hyslop (1999), Bingley and Walker (2001) and Cerrutti and Massey (2001). These are mainly based on regression, probit, logit, and tobit models. In this section we outline these important contributions of foreign econometric studies of participation. Further details of these works will be given in Chap. 3. Also see Table 2.3 for a summary that includes participation studies.

Mincer (1962) developed a model for married women's labour market participation based on three-way choice between leisure, paid work and unpaid household work. He used a variety of data sets: cross-sectional data from urban Standard Metropolitan areas, the Bureau of Labor Statistics Survey of Consumer Expenditures in 1950, Census sample data, March 1957, and 1955 Census sample data on

**Table 2.3** Summary of foreign econometric literature

Researchers	Year	Dependent	Technique	Data	Results
Mincer	1962	Labour market Participation rate	Regression models Key indep = median income of male family heads 1949, median income of female worked 50–52 weeks in 1949, percent of population aged 25 + completed high school education	Cross-section data from Urban of Standard Metropolitan Areas, 1950 BLS Survey of Consumer Expenditure, 1957 Census Sample Survey	Wife worked less as husband earned more and wives' labour market participation rates respond positively to wives earning power
Sewell and Orenstein	1965	Occupational choice	Technique of elaboration Key indep = intelligence, socio-economic status	1957 Survey of Graduating Seniors in Public, Private, Parochial Schools in Wisconsin	Boys, but not girls, from rural areas and smaller communities had lower occupational aspirations than those from larger urban places. This was independent of intelligence and socio-economic differences
Oaxaca	1973	Full-scale wage and personal characteristics wage	Regression models Key indep = experience, education, and occupation	1967 US Survey of Economic Opportunity	Wage rates positively associated with education and experience. Male–female wage differences were quite large. A substantial proportion of the male–female wage differential was attributable to the effects of discrimination

Gronau	1974	Wage offer, labour market participation	Regression, probit Key indep = education indep = annual income, education (wife and husband), hourly wage Tobit Key indep = wage rate of husband, experience, education, expected work participation rates, education.	1960 Census  1967 US National Longitudinal Survey	<p>Wage offer positively associated with education. Participation positively associated with education and wages. Changes in the observed wage tended to understate the changes in the wage offer associated with an increase in education. Using the average wage of working women tended to overplay the direct effect of education on labour market participation</p> <p>The effect of education was to raise the offered wage than the asking wage and the differences were significant. An additional unit of labour market experience raised the market wage. Increased in hours and weeks worked were associated with increased of the wife's time used for consumption and home production.</p>
Heckman	1974	Annual hours worked, annual weeks worked, asking wage and offered wage			
Treiman and Terrell	1975	Occupational attainment, educational attainment, earnings	Regressions Key indep = education, occupation (father's, mother's)	1967 Longitudinal Study of Labour Market Experience of Women and US Census	<p>The level and process of occupational attainment were highly similar for men and women. Moreover, for them occupational status was largely dependent upon educational attainment</p>
Hosek	1975	Annual probability of unemployment, weekly probability of being unemployed, annual weeks of unemployment	OLS key indep = education	1967 Survey of Economic Opportunity	<p>The effect of education and wages for annual probability unemployment and annual weeks of unemployment of individuals were negative. Hosek established a conceptual framework that accommodated a variety of theoretical approaches, which furnished a means of translating among various weekly and annual measures of unemployment experience</p>

(continued)

Table 2.3 (continued)

Researchers	Year	Dependent	Technique	Data	Results
McClendon	1976	Occupational attainment	Regression models Key indep = education	1972–1974 NORC General Social Survey	Male and females occupational attainment positively associated with education. The occupational status of each sex was quite similar, although males were somewhat more likely to have high and low status jobs
Featherman and Hauser	1976	Duncan's SEI, education, earning	OLS key indep = education, experience, occupation	1962–1973 Occupational Changes in a Generation	Women's occupational attainments were somewhat less related to the characteristics of their family's origin. Education had the largest absolute and relative effects on occupational status of women. Men and women were allocated to levels of education and occupational status in much the same manner
Hudis	1976	Annual earnings	OLS key indep = educational attainment, occupational status	1967 Survey of Economic Opportunity	Women's earnings positively associated with educational attainment and occupational status. However, currently married women received smaller economic benefits from schooling and occupational status because of interrupted labour market participation and familial constraints
Psacharopoulos	1977	Earnings	Regression Key indep = education experience	1972 General Household Survey	Schooling (which include experience) had positive effect on the earning in lower and upper segment. Schooling was a more profitable investment for those in the lower segment. The dual labour market evidence was found in UK
Sewell, Hauser and Wolf	1980	Occupational attainment	Regression Key indep = educational attainment	1957–1975 Wisconsin high school graduates	Occupational status of first job positively associated with educational attainment. Marked occupational segregation of men and women in the Wisconsin sample coexisted with similarity in average levels of current occupational status. Women tended to be excluded from the extremes of the occupational status distribution

Spitze and Waite	1980	Occupational status, earnings, typicality and satisfaction	OLS, probit Key indep = education, race	1968–1973 National Longitudinal Survey of the Labour Market Experience of Young Women	Educational attainment had a large, positive effect on occupational status of young women. Young women who preferred market to homework tended to select first jobs with significantly lower occupational status than those who preferred homework. They also tended to earn less on these jobs, but the effect was not statistically significant. Participation, hours of participants, negatively associated with husband's wage and unearned income. Wage and income effects on married women's participation accounted for less than half of the long-run rise in women's labour market participation. Young child under six and number of children had a positive effect on participation. Wives born in the West Indies and Ireland were more likely to work and coloured women were likely to work longer
Barton and Zabala	1980	Dummy for actual participation of the women; hours of participants, non-participants husband's wage (per hour), net unearned income (similar for all equations)	Logit, OLS and tobit Key indep = log wage (predicted per hours),	1974 UK General Household Survey	Wives wage rises, both the probability of participating and the expected hours if working rise
McNabb and Psacharopoulos	1981	Annual earning	Regression Key indep = schooling and experience	1972 UK General Household Survey	There was a positive and significant relationship between schooling and earning for workers both in lower and upper segments. There was some form of segmentation in the UK labour market
Nukamura and Nukamura	1981	Dummy for working or not working, offered wage and hours of work	Probit GLS Key indep = years of education, income of husband + asset income of family net of income taxes	1970 US Census and 1971 Canadian Census	The probability of working, offered wage rate positively associated with education and hours of work negatively associated with income of husband. Hours of work and the offered wage rate were negatively related for working wives

(continued)

Table 2.3 (continued)

Researchers	Year	Dependent	Technique	Data	Results
Long and Jones	1981	Not working, working part-time and working full-time, natural logarithm of the hourly wage	Probit, OLS key indep = wife's wage, husband's earning, vocational training, wife's education Key indep = years of schooling, current job, years working, not working, practicing a profession or trade	1970 US Census	Part-time and full-time work positively associated with husband's income and education. Wages positively associated with education and experience for part-time and full-time work. In addition, level of wages and benefits from human capital were relatively smaller in part-time labour market. Wives earned less in part-time jobs than full-time jobs. Over a multiyear period, married women work more weeks when they hold full-time jobs than part-time
Reimers	1982	Wage earner or not wage earner; wage offer	Probit, OLS key indep = education, experience, command of English, employment status, income, spouse's education	1976 US Department of Commerce, Survey of Income and Education	Participation in wage or salary earner more positively and few negatively associated with education and more negatively and few positively associated with English not good variables for different migrant female groups. Wage offer positively associated with education and experience and some positively and few negatively associated with English not good variables. Differences in education, and not labour market discrimination against the ethnic groups, were found to be the main reasons for the shortfall in wages for Mexican-American women
Boyd	1982	Occupational attainment	Regression Key indep = education, first job	1973 Canadian Mobility Study	Males and females occupational attainment positively associated with education and experience. The socio economic statuses of current occupations on the average were very similar for native-born men and women in the Canadian labour market, sex differences existed in the process by which such occupational statuses were attained. Women who were single, widowed or divorcees, current occupational status was achieved wholly on the basis of education and/or first-job characteristics



Hirschman and Wong	1984	Occupations and earning	Multivariate Regressions Key indep = education	1960 and 1970 Census, 1976 Survey of Income and education	Socio-economic status of migrants' positively associated with education. In general, Asian Americans approached socio-economic parity with whites because of the over achievement in educational attainment. Over the preceding decade, there had been a marked decline in the direct negative effect of ethnicity on earnings (except among Chinese Americans) Occupational prestige of migrant women positively associated with educational attainment and negatively associated with experience. Migrant women did not fare so well as migrant men in converting their resources into occupational prestige, although nationality difference were larger than gender differences
Sullivan	1984	NORC prestige score	Regression Key indep = educational attainment, experience	1970 US Census	Labour market participation of women with minor children by headship status positively associated with education and negatively associated with husband's income. Extended household structure positively influenced the probability that spouses worked outside the home, but not female heads. Female heads with minor children participated more in the labour market than married mothers Earnings were positively related to education and labour market experience. The dual labour market evidence was found in Israel
Tienda and Glass	1985	In or out of the labour market	Logit Key indep = education, husband's income	1980 Bureau of the Census Current Population Survey of the US	
Neuman and Ziderman	1986	Earnings	Regression Key indep = education, experience	1974 Israel Labour Mobility Survey	

(continued)

Table 2.3 (continued)

Researchers	Year	Dependent	Technique	Data	Results
Stier and Tienda	1992	Labour market participation, wage offers	Probit Key indep = English ability, husband's wage and education	1980 US Census	Migrant women's labour market participation negatively associated with husband's wage and English ability. Women's wage offer positively associated with education. For all groups, women's resource endowments, earning potential and language ability were most decisive in predicting whether they entered the labour market
Ermisch and Wright	1993	Hourly wage rate; employment decision	Ordered Probit Key indep = qualifications, years of post-compulsory education, part-time wage, full-time wage, husband's and other income	1980 UK Women and Employment Survey	Full-time and part-time wage offer positively associated with educational attainment. Greater husband's income significantly reduced a woman's probability of working. Difference in women's expected wage offers between full-time and part-time employment was an important determinant of whether she works full-time, while husband's income mainly affects the decision of whether to work
Gurak and Kriz	1996	Labour market participation	Logit Key indep = years of education.	1981 Survey of Colombian and Dominican Women Residing in NY City, 1978 Survey of Women Residing in Dominican Republic Santo Domingo and Santiago.	Labour market participation in both Female headed or spouse present household in New York and Dominican Republic positively related with education. For all other households participation negatively and positively related with education in New York and Dominican Republic. Female heads in new York were less likely to be in the labour market but their counterparts in the Dominican republic were more likely than other categories of women to be employed

Lester	1996	Part-time, full-time and total employment	OLS, Factor analysis: Key indep = percent of service sector, the female labour market participation and unemployment rate. Key indep = percentage of male-female unemployment rates, labour market participation rates, family income and the personal income	1980 US Bureau of Census	Female labour market participation rate positively associated with part-time employment of married women, however, failed to support the role of the service sector in explaining part-time employment
Gensler and Walls	1997	Participation in labour market	Probit Key indep = education, experience and unearned income	1979–1990 US Census Bureau's Current Population survey	The effective welfare guarantee levels and the effective welfare tax rate on unearned income both significantly affected the probability of labour market and welfare program participation, however, such impacts were very small in magnitude
Waddoups	1997	Employment Status	Logit Key indep = education, experience and child	1987 US National Health Interview Survey	Employment decision for women positively associated with education and experience and large number of children reduced the employment decision. Women with greater propensity to adopt a child into their household were less likely to participate in the labour market than their non-adopting counterparts

(continued)

Table 2.3 (continued)

Researchers	Year	Dependent	Technique	Data	Results
Buchinsky	1998	Working or not working	Quintile regression: Key indep = education, experience, log of weekly wages, education, experience	1968–1990 US Current Population Survey (CPS)	The most significant changes for the less skilled women took place at the bottom of the wage distribution, for more skilled groups changes occurred at the ends of the distributions. Consequently, wage inequality decreased for the high-school graduates and increased for the younger college graduates. Furthermore, the more highly skilled women experienced the steepest gain in wages regardless of their position in the distribution
Schoeni	1998	Participation, annual hours, log weekly earning	Probit, OLS key indep = education, ability to speak English	1970, 1980, and 1990 US Censuses	In 1970 there was little difference on the labour market outcome between migrant and US-born women. However, differences grew in the subsequent years. Relative to natives, migrant women's participation rate and weekly earnings (among working women) became lower, and their unemployment rates became greater
Boden	1999	Self-employment, employment status	Probit Key indep = educational attainment, profession	US Bureau of Census, Contingent Work Survey (WAS), February 1995 Current Population Survey (CPS)	Self-employment negatively associated with educational attainment and positively associated with profession and employment status (employed in wage sector and self-employed) positively associated with educational attainment and profession. Women with young children were more likely to be self-employed. Men's reasons for becoming self-employed showed little association with their parental status

Hyslop	1999	Participation, participation outcomes	Linear probability, Static and Dynamic Probit All specification includes the unrestricted time effects, years of education, non-labour income	1979–1985 Panel Study of Income Dynamics	Fertility was correlated with women's unobserved tastes for work, and was not exogenous with respect to their participation decisions, if the dynamic structure of participation decisions was ignored. The effect of permanent non-labour income on participation decision was significant
Solberg	1999	Natural logarithm of hourly rate of pay	Neumark/Cotton extension of Blinder/Oaxaca decomposition method of wage discrimination wage equation Key Inde = educational attainments, experience, labour market participation, occupational preferences	1991 US National Longitudinal Survey of Youth	Inclusion of occupational dummy variables in a human capital wage equation reduced the unexplained portion of the gender pay gap and reduced the estimated effect of market discrimination
Mohanty	2000	Wages	Probit, OLS key Index = educational attainment, experience	1987 Current Population Survey	Employers hiring decision was positively influenced by workers' human capital endowments (education, experience). Blacks experienced a higher unemployment rates than whites

long-run work experience and short-run labour market participation rates for wives. He set up a model in which the labour market participation of wives depended on incomes of husbands, earnings of wives, and other factors. He used OLS to estimate regression models, using a range of human capital and economic variables that included income of male family heads, median income of females who worked 50–52 weeks, education, and the male unemployment rate. He concluded that wives worked less as husbands earned more and wives labour market participation rates responded positively to wives earning power.

Barton and Zabalza (1980) examined married women's participation and hours of work in the UK using the 1974 General Household Survey data to examine the factors that influenced participation decisions, using regression and logit models. They also analysed hours of participation in paid employment and hours of participation in unpaid jobs of participants and non-participants (together).

They used a range of economic variables that included wages, husbands' wages, net unearned income, and dummies for unemployed husband and husband currently unemployed. They concluded that the wage and income effects on married women's participation accounted for less than half of the long-term rise in women's labour market participation. They also found that as a wife's wage increased, both the probability of participation in the labour market and the expected hours of work increased.

Long and Jones (1981) investigated the part-time employment patterns of working wives, using the 1970 US Census data. To determine the decisions regarding labour market participation and hours of work of married women, they constructed a multivariate probit model. They used a range of human capital variables that included a wife's education and labour market experience, and concluded that previous experience influenced the probability that the wife worked part-time. In addition, benefits from schooling and experience were relatively smaller in the part-time labour market.

Tienda and Glass (1985) examined the household structure and labour market participation of Black, Hispanic, and White mothers, using the 1980 US Census data. To determine the rates of participation among mothers who resided in extended and nuclear family arrangements, they used a logistic regression model. They estimated separate models for both female heads of households and spouses of heads of households and concluded that educated mothers who resided both in female heads and spouses of heads were more likely to participate in the labour market. They also found that female heads with minor children participate more in the labour market than married mothers.

Stier and Tienda (1992) examined the labour supply of Hispanic (Mexican, Puerto Rican, and other) migrant wives in the US, using the 1980 US Census data. They used a two-stage estimation procedure and a specification that modelled individual and familial factors, which influenced the labour supply of all women and those unique to migrants. First, they used a wage equation to predict wage offers and second, they estimated wives' labour market participation decisions using a probit model. They concluded that poor English ability constrained the work behaviour of Mexican and Puerto Rican women, but not of other Hispanic migrants.

Gurak and Kritz (1996) studied the social context, household composition and employment conditions among migrants from the Dominican Republic residing in New York City and women residing in the Dominican Republic, using the 1981 Probability Survey of Colombian and Dominican women residing in New York city and, the 1978 Probability Survey of women residing Dominican Republic-Santo Domingo and Santiago.<sup>5</sup>

To assess the impact of household composition on female labour market participation, they used logit models separately for Dominican/Colombian-NY and Dominican-DR residents. They estimated two models: (1) female-headed, and spouse present households, (2) all women female-heads, spouse present, and all-other household. They used human capital variables and concluded that female heads in New York were less likely to be in the labour market, but their counterparts in the Dominican Republic were more likely than other categories of women to be employed. They also observed that in the Dominican Republic, better-educated women were more likely to participate in the labour market than others, while in New York education had a negligible and statistically insignificant role for their participation in the labour market.

Gensler and Walls (1997) analysed the impacts of individual characteristics on both the labour market and welfare participation decisions of low-income females with children, using the US Census Bureau's population survey (1979–1990) data. They used a probit model with a range of human capital variables that included education and labour market experience. They concluded that increasing the tax rate on unearned income increased labour market participation and decreased welfare program participation, although the effects were very small. Education and experience had a positive impact upon labour market participation of low-income females.

Waddoups (1997) examined the impact of child adoption vs. procreation on female labour market participation decisions, using the data from the 1987 National Health Interview Survey. He used a traditional static labour supply model to estimate a labour market participation equation, using a two-stage estimation procedure. He used a range of human capital variables that included education and labour market experience, and concluded that the adoptive females with high levels of education did not differ much from their non-adoptive counterparts. In addition, adoptive respondent with similar levels of labour market experience were slightly less likely to participate than their non-adopting counterparts. He also observed that women with greater propensity to adopt a child into their households were less likely to participate in the labour market than their non-adopting counterparts.

Schoeni (1998) analysed the labour market outcomes of migrant women in the US, using the data from the US Censuses of 1970, 1980 and 1990. He used a regression model to analyse labour market participation and used a range of human capital variables that included education and the ability to speak English. He concluded that, education and English skills played an important role in determining

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<sup>5</sup> Women were classified into three types: (1) "head" or female head of household, (2) "spouse" spouse present with or without minor children, and (3) "other" neither spouse nor minor children present.

the differences in labour market participation among migrant groups and migrant women were less likely to participate in the labour market. This gap increased to 7% points by 1990.

Hyslop (1999) analysed the inter-temporal participation behaviour of married women, using data from the 1986 Panel Study of Income Dynamics that pertains to 1979–1985. He developed a dynamic search framework to analyse the inter-temporal labour market participation behaviours of married women. The sensitivity to alternative distributional assumptions was evaluated using linear probability and probit models. He concluded that fertility was correlated with women's unobserved tastes for work, and was not exogenous with respect to their participation decisions, if the dynamic structure of participation decision was ignored. He also observed that low-educated women were less likely to participate in the presence of a child aged 0–2 years, than were higher-educated women.

#### ***2.2.4 Foreign Non-Econometric Studies of Participation***

Since the 1980s there has been a great deal of overseas research on labour market participation that has not used econometric analysis. This includes Simon and DeLey (1984), Malveaux (1999) and Jacobsen (1999). In this section we outline just a few of these contributions.

Simon and DeLey (1984) analysed the labour market participation and demographic characteristics of Mexican women migrants in Los Angeles County. They collected their data by interviewing Mexican legal and illegal migrant women in their homes, churches, community centres and places of work. They observed that most of the undocumented and documented migrant women worked in factories as labourers.

Malveaux (1999) analysed the similarities and differences in labour market participation amongst coloured and white women, using the 1997 US Bureau of Census, and concluded that black and Latino women aged 20–24 and 55–64 had lower participation rates than white women.

Jacobsen (1999) analysed the trends for the US female and male labour market participation for the post-world war period, using Economic Reports of the President (1997), Current Population Survey 1948–1987, and The Statistical Abstract of the US (1996). She observed that female and male participation rates had converging over time, due to the large rise in women's participation and, to a lesser extent, the modest decline in men's participation rates.

### **2.3 Studies on Occupational Status**

Some of the main literature on occupational status is reviewed in the following sub-sections: (1) Australian econometric studies of occupational status, (2) Australian non-econometric studies of occupational status, (3) foreign econometric studies



of occupational status and (4) foreign non-econometric studies of occupational status.

### ***2.3.1 Australian Econometric Studies of Occupational Status***

Since the 1980s, there has been much econometric analysis of occupational status. These works include Evans (1984, 1987), Kelley and McAllister (1984), Evans and Kelley (1986, 1991), Miller (1987), Jones (1992), Vaughan (1992a, 1992b) and McAllister (1995). This econometric literature is mainly based on regression, probit and logit models. In this section we outline these important contributions of Australian econometrics analysis of occupational status. Further details of the works of these authors will be given in Chap. 4. Also see Table 2.1 for a further summary that includes occupational status studies.

Evans (1984) explored the work experiences of migrant women in Australia, which covered a broad range of topics related to women's work roles. She used a regression model to analyse migrant women's occupational status, using the 1981 Census data. She used a range of human capital variables that included education and English skills, and observed a positive relationship between education, English skills and occupational status. However, Mediterranean women having little education obtained better jobs than their Australian peers, and highly educated Mediterranean women had somewhat worse jobs than their Australian peers. Mediterranean women occupied the lowest status position compared to other migrant women.

Kelley and McAllister (1984) investigated the socio-economic attainment of migrants (male/female) in Australia, using the 1973 ANU Social Mobility Survey data. They used a regression model to analyse the socio-economic attainment of migrants, using a range of human capital variables that included father's education and own education.<sup>6</sup> They concluded that migrants were more likely to have secondary status jobs and when education was considered for occupational status, they found that Northern and Eastern Europeans were broadly similar to the Australian-born, while Mediterranean did worse.

Evans and Kelley (1986) analysed migrant men's work, equality and discrimination in the Australian labour market, using the 1981 Census data. They used a regression model to analyse migrants' occupational attainments, using ANU2 occupational status as the dependent variable, with independent variables including education, labour market experience, and English proficiency. They concluded that migrants and Australian-born men were treated in the same way in the Australian labour market with similar education and labour market experience. However, English skills differences in the occupational status of migrants and Australian-born reflected differences in endowments, not discrimination.

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<sup>6</sup> For occupational status they included a measure of parents' standard of living, based on an inventory of possessions. It was scored from a low of zero to a high of 100 (all).

Miller (1987) studied aspects of occupational mobility and attainment among migrants (male) in Australia using the 1981 Census data. He used an ordered probit model to determine occupational mobility and attainment among migrants, using human capital variables including labour market experience, educational attainment and English language facility. He concluded that migrants from Non-English speaking countries concentrated in low-ranked occupations, and the relatively minor influence of education on the occupational attainments from these birthplace regions.<sup>7</sup>

Evans (1987) investigated the importance of language usage and skills in the occupational mobility of various migrant groups (male), using the 1981 Census data. She used a regression model to determine the effect of monolingual English usage and English language proficiency on occupational status.<sup>8</sup> She used a range of human capital variables that included English proficiency, education and labour market experience, and concluded that English language proficiency affected the occupational opportunities for some groups more than others. It shaped the life chances of Eastern Europeans and Third World migrants' more than Mediterranean migrants.

Evans and Kelley (1991) analysed the labour market attainments and discrimination against migrants in Australia using the 1981 Census data. They used a regression model to analyse occupational status and income of migrants, using a range of human capital variables that included education, experience and English skills. They concluded that migrants and their Australia-born children received jobs and earnings that were commensurate with their education, experience, and skills for all ethnic groups.

Jones (1992) studied how fairly various migrant groups were treated in the Australian labour market, using the 1986 Census data. He used a regression model to examine how ethnicity and sex affect processes of occupational attainment. He used the ANU3 status scale as dependent variable, and a range of human capital independent variables that included education, qualifications, and labour market experience. He concluded that for migrant women, post-school qualifications, years of schooling and experiences tended to increase job status.

Vaughan (1992a) investigated factors affecting skill level occupational attainment of overseas born groups (male), using the 1986 Census data. He used a logistic regression model to examine the effects of all variables, which separately influence the relationship between birthplace and occupation.<sup>9</sup> He used a range of human capital variables that included education, labour market experience and English speaking ability, and concluded that difference in occupational attainment between the overseas-born and the Australian-born were largely the products of the difficulties of transferring human capital characteristics to the Australian labour market.

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<sup>7</sup> The status attainment was ranked according to ANU2 scales.

<sup>8</sup> To measure the occupational attainment she used ANU2 occupational status scores.

<sup>9</sup> The dependent variable, occupational skill level was measured by the ASCO at the major group level used by the ABS 1986 census.

Vaughan (1992b) investigated factors affecting skill level occupational attainment of women compared to men, using the 1986 Census data. He estimated a logistic model to examine the factors that affect occupational attainment.<sup>10</sup> He used a range of human capital variables including education and labour market experience, and found that gender differences in occupational attainment were significant, which were also the product of sex differences in labour market endowments.

McAllister (1995) examined occupational mobility among migrants using the 1988–1989 Multicultural Australia Survey data. To analyse the impact of migration on occupational mobility among migrants, he used a regression model that included a range of human capital variables, including educational qualifications and English proficiency.<sup>11</sup> He observed that migrants experiencing reduced job status in their early years of settlement regardless of their inherited human capital, individual achievements, or cultural background. It was this lower occupational status at the beginning of their Australian working career, which determined their subsequent occupational status and eventually they ended up with lower status jobs.

### ***2.3.2 Australian Non-Econometric Studies of Occupational Status***

Since the 1970s, there has been much research in Australia on occupational status that has not used econometric analysis. This includes Cox, Jobson, & Martin (1976), Storer (1985), Webber et al. (1992), Barnett (1991), Misztal (1991) and Preston (2003). In this section we outline these important contributions of Australian non-econometric studies of occupational status.

Cox et al. (1976) examined NESB women's past and present work pattern, using data from 1,024 migrant women in South Sydney, and concluded that the majority of women were working in semi-skilled or unskilled blue-collar occupations, primarily as production-process workers and in the garment industry.

Storer (1985) studied the occupational status of migrants in Melbourne's industry according to their birthplace, using the 1981 Census data, and observed that both NESB males and females were more likely to work as tradesman, production workers or labourers, and were under-represented in the professional and technical occupations.

Barnett (1991) examined the aspirations, goals and motivation of NESB women in white-collar public sector occupations, using existing literature, case studies, personnel records, and South Australian Public Services Records and found that many of the women who were interviewed expressed a lack of confidence in their abilities, which was a major barrier to pursuing their work-related goals, regardless of the degree of success experienced in their work.

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<sup>10</sup> The dependent variable, skill level is measured by the ASCO, used by the ABS 1986 census.

<sup>11</sup> He used ANU3 status scale to measure occupational status.

Misztal (1991) investigated the migrant women's ethnicity, class and gender inequalities in Australia. She used available literature written for migrant women's experiences in class and gender inequalities in Australian labour market. She concluded that NESB migrant women employed in much lower-level, lower-status, and lower-paying occupations than Australian-born women.

Webber et al. (1992) analysed the differences and similarities in the experiences of migrant women and men, using the 1971–1986 Census data and the 1988 Survey of Migrants, and found that levels of industrial segregation and occupational immobility occurred for both women and men. After arrival in Australia, women seemed to have relatively less formal to specific training, which reduced their opportunity for occupational improvement.

### ***2.3.3 Foreign Econometric Studies of Occupational Status***

Since the 1960s, there has also been much overseas econometric analysis on occupational status. These works include that of Sewell and Orenstein (1965), Treiman and Terrell (1975), McClendon (1976), Featherman and Hauser (1976), Hudis (1976) and Catanzarite and Aguilera (2002). This econometric literature is mainly based on regression models. In this section we outline these important contributions of foreign econometric analysis of occupational status. Further details of the works of these authors will be given in Chap. 4. Also see Table 2.3 for a summary that includes occupational status studies.

Sewell and Orenstein (1965) analysed the occupational choice of persons raised in rural and urban communities, using a survey of 1957 graduating seniors in public, private and parochial schools in Wisconsin. To determine the rural and urban differences in occupational choice, they used the technique of elaboration.<sup>12</sup> They used occupational choice as the dependent variable and the independent variable was intelligence.<sup>13</sup> They observed that differences in occupational choices for girls were largely accounted for by intelligence and socio-economic status.

Treiman and Terrell (1975) investigated the process of status attainment of workingmen and women, using the 1967 Longitudinal Study of Labor Market Experience of Women, US Bureau of the Census data. They used a regression model to analyse the process of status attainment, using education as one of the independent variables and concluded that for both men and women, occupational status was largely dependent upon educational attainment and only slightly dependent upon social origin.<sup>14</sup>

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<sup>12</sup> Three control variables were related to the independent and dependent variables, sex, intelligence and socio-economic status, and were controlled simultaneously. The dependent variable, occupational choice, was coded according to major occupational grouping as specified in the 1950 Bureau of Census.

<sup>13</sup> The variable intelligence was measured as: high (I.Q.: 116 and above), middle (I.Q.: 105–115) and low (I.Q.: below 105)

<sup>14</sup> Occupational status was measured by the Standard International Occupational Prestige Scale (Treiman, 1977).

McClendon (1976) compared white working males and females with respect to the process of occupational status attainment, using 1972–1974 General Social Surveys of the US National Opinion Research Center. McClendon used regression models to analyse occupational attainment and concluded that the occupational status of each sex was quite similar, although males were somewhat more likely to have high and low status jobs. He further concluded that education was the most important determinant of occupational status for both groups.<sup>15</sup>

Featherman and Hauser (1976) examined the sexual inequalities and socio-economic achievement in the US, using data from the 1962–1973 Occupational Changes in a Generation collected by Blau and Duncan (1967) and Featherman and Hauser (1975). They used a regression model to examine the family and schooling effects on occupational status for men and women, and concluded that men and women were allocated to levels of education and occupational status in much the same manner. In the process of socio-economic achievement, the net effect of educational attainment on occupational status was larger for wives than for their husbands.<sup>16</sup>

Hudis (1976) investigated the differences in women's earnings by marital-status, using the 1967 Survey of Economic Opportunity data. She used regression models to find the marital status differences in schooling, occupational status, employment and child status on women's earnings.<sup>17</sup> She concluded that currently married women received smaller economic benefits from schooling and occupational status because of interrupted labour market participation and familial constraints.

Psacharopoulos (1978) used three tests (the modality test, truncated model test of schooling on earnings and socio-economic mobility test) based on Goldthorpe and Hope (1974) desirability scale for different occupations established by a popular ranking assessment according to their desirability. They investigated several issues raised for dual labour market, using the 1972 UK General Household Survey data. He concluded that the usefulness of these models of duality was limited, because they were mainly descriptive in character rather than analytical on the causes of the observed phenomenon. The descriptive statistics alone did not guarantee to distinguish the primary and the secondary jobs.

Sewell et al. (1980) analysed the process of occupational attainment among men and women from labour market entry to mid-life. They collected data from Wisconsin high school graduates and followed them through 1957–1975. They used regression models to investigate the status of the first full-time civilian job held by the respondent after the completion of formal schooling, as well as the status of the current (or last) job. They used social-psychological variables related to school experience and aspiration, as well as a more extensive set of social background characteristics and concluded that marked occupational segregation of men and women

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<sup>15</sup> Duncan's (1961) Socio-economic Index (SEI) were used to measure the occupational attainment.

<sup>16</sup> Data on all occupation variables were transformed into Duncan's (1961) index of socio-economic status (SEI).

<sup>17</sup> She used the NORC Prestige scores to measure occupational status, which is shown in Siegel (1971).

in the Wisconsin sample existed, with similarity in average levels of current occupational status. In addition, women tended to exclude from the extremes of the occupational status distribution.<sup>18</sup>

Spitze and Waite (1980) examined work-related attitudes and labour market behaviour of young women, using the 1968–1973 National Longitudinal Survey of the labour market experience of young women. They used regression and probit models to estimate the effects of work attitudes on job characteristics, and the effects of early labour market experience of later work attitudes.<sup>19</sup> They concluded that the number of years of schooling completed had a positive effect on employment status. This suggested that formal schooling increased a women's earning power and ultimately increased the attractiveness of market work over homework.

McNabb and Psacharopoulos (1981) investigated the dual labour market hypothesis in UK, using the 1972 UK General Household Survey data. First, they conducted a modality test based on Goldthorpe and Hope (1974) occupational rating scale to assign individuals to either the primary or secondary occupations. Then they estimated earning functions for each group, using the human capital variables schooling and experience, and concluded that there was some form of segmentation in the UK labour market.

Boyd (1982) compared the occupational attainments of Canadian-born, full-time paid men and women, using the 1973 Canadian Mobility Study data. She used a regression model to analyse the current occupational status, using a range of human capital variables that included education and parent's education, and concluded that educational attainments of women were less influenced by social origins, as were their occupational attainments.

Hirschman and Wong (1984) analysed socio-economic inequality among Blacks, Hispanics, Japanese, Chinese and Filipinos, using the US 1960 Census and the 1976 Survey of Income and Education data. They used multivariate regression model, to find the effects of occupational and earning attainment. They concluded that in general, Asian Americans approached socio-economic parity with whites because of over achievement in educational attainment.<sup>20</sup> They also observed that over the preceding decade, there had been a marked decline in the direct negative effect of ethnicity on earnings (except among Chinese Americans).

Sullivan (1984) investigated the occupational prestige of women workers born in Cuba or Mexico, using the 1970 US Census of Population data. She used a regression model to analyse the occupational prestige, using a range of human capital variables that included experience and education. She found that migrant women who had educational credentials did much better than those who did not, although, US labour market experience did not lead to improving their job position.

Neuman and Ziderman (1986) tested the dual labour market hypothesis for Israel, using the 1974 Israel Labour Mobility Survey data. Following McNabb and Psacharopoulos (1981), they drew a sample of males, which was categorized

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<sup>18</sup> To measure the occupational achievement they used Duncan's SEI scale (1961).

<sup>19</sup> The occupational status of the respondent's first job, measured by the Duncan SEI (1961)

<sup>20</sup> The occupational status measured by the Duncan Socio-economic Index SEI (1961).

into two groups, primary and secondary labour market segments, on the basis of occupational prestige ratings for Israel (Tyree, 1981). They then estimated earning functions for each group, using a range of human capital variables that included education and experience, and found evidence that there was a dual labour market in Israel.

### ***2.3.4 Foreign Non-Econometric Studies of Occupational Status***

There has also been a great deal of overseas research on occupational status that has not used econometric analysis. This includes Stone (1983), Boyd (1984), Craig, Garnsey, & Rubery (1985), Cohen (1989), Abbott and Tyler (1995) and Iganski and Payne (1999). In this section we outline a few of these.

Stone (1983) examined the main similarities and differences in the employment position of the West Indian, Asian and white mothers (mainly British) as well as considered the effects of gender and racial oppression in Britain. She used data, from interviews, from the Handsworth area in Birmingham during 1978–1979, existing literature written for those women. She concluded that all of the working women in the sample shared the same confinement to low paid, low status and gender-specific work.

Boyd (1984) studied the occupational statuses of Canadian female migrant employees in relation to the statuses displayed by Canadian-born women and by Canadian-born and foreign-born men, using the 1973 Canadian Mobility Study data. She observed that occupational statuses of migrant women on the average were lower than those of other sex and Canadian-born groups.

Craig et al. (1985) evaluated two aspects of labour market based on women's employment status. First, the secondary sector conformed to a competitive labour market model and second, the division of jobs into primary and secondary categories (or "good" jobs and "bad" jobs) was determined by demand-side factors and was therefore independent of the characteristics of the workers who were employed. They used data from semi-structured interviews of nearly 150 employers from six industries. They found that the pattern of employment organization outside the formal, large-firm and unionised sector did not fit the dual labour market model according to which such work was mainly unskilled and was carried out by interchangeable and casual workers. Labour supply factors were identified as an independent cause of the development of structure or segmented labour market.

Cohen (1989) examined the socio-economic dualism of Israeli-born male/female migrants in the US, using the 1980 US Census of Foreign-born Population and the 1979 Immigration Naturalization Public Service data file. He concluded that Israeli-born Americans had greater educational levels than other Americans, but not all Israelis attained high-status occupations or sufficient incomes.

Abbott and Tyler (1995) examined the occupational characteristics of different ethnic groups by gender, using the 1981 and 1991 Census data of Great Britain, and



other reports written for ethnic groups. They found that women were disadvantaged in the labour market and concentrated in a narrow range of occupational groups.

Iganski and Payne (1999) investigated the socio-economic re-structuring and employment of minority ethnic groups in the United Kingdom using data from the Censuses of 1971 and 1991 and the Labour Market Survey of 1981. They concluded that labour market forces including changes in industry and occupations, offered a promising way forward because any consideration of discrimination also revealed the strength of the countervailing force of industrial change in providing opportunities for the minority ethnic groups to overcome the hurdle of their initial disadvantage and subsequent discrimination.

## 2.4 Studies on Unemployment

Some of the main literature on unemployment status is reviewed in the following sub-sections: (1) Australian econometric studies of unemployment, (2) Australian non-econometric studies of unemployment, (3) foreign econometric studies of unemployment, and (4) foreign non-econometric studies of unemployment.

### 2.4.1 *Australian Econometric Studies of Unemployment*

Since the 1980s, there has been much econometric analysis in Australia on unemployment. These works include Evans (1984), Miller (1984, 1986a, 1986b), Brooks and Volker (1985, 1986), Inglis and Stromback (1986), Stromback (1986), McAllister (1986), Beggs and Chapman (1987), Wooden and Robertson (1990), Jones and McAllister (1991), Flatau and Hemmings (1991), Jones (1992), Vanden-Heuvel and Wooden (1996), O'Loughlin and Watson (1997), Williams, Brooks, & Murphy (1997), Gray et al. (2003) and Thapa (2004). These studies mainly used regression, probit and logit models in the analysis. In this section we outline these important contributions of Australian econometric studies of unemployment. Further details of these works are given in Chap. 5. Also see Table 2.1 for a summary that includes studies of unemployment.

Evans (1984) explored the work experience of migrant women in Australia, which covered a broad range of topics related to women's work roles, using the 1981 Census data. She used OLS to estimate regression model to analyse the migrant women's unemployment status, using a range of human capital variables that included education and English skills. She concluded that each additional year of education reduced the risk of being unemployed by about 0.5%. English skills only appeared to affect unemployment among migrants from the Third World.

Miller (1984) examined the distribution of the burden of unemployment across various socio-economic groups, using the 1976 Census data. He used a logit model to analyse teenage unemployment rates, using human capital variables including



qualifications and found that teenage unemployment rates differed greatly according to qualifications. Trade and technical qualifications were associated with lower teenage unemployment rates, although only a small proportion of teenagers had such qualifications.

Brooks and Volker (1985) analysed the factors that determined the labour market success of the Australian population, using the 1981 Census data. They used a multinomial logit model to examine the influence of various factors on whether individuals were unemployed, employed or non-participating in the workforce, using a range of human capital variables that included education and English speaking ability. They concluded that education and English speaking ability were found to be consistently important in determining the labour market state of individuals.

Miller (1986a) investigated migrants' unemployment situation in the first year of their arrival in Australia. He used the 1983 Manpower Programs Survey data. He used a logit model to analyse the migrant's (male/female) unemployment situation, and concluded that additional years of education were associated with only modest reductions in the unemployment rates of migrants. However, migrants were able to reduce their predicted unemployment rates considerably by obtaining information on Australian job opportunities prior to migrating.

Miller (1986b) examined youth unemployment patterns of migrant and Australian-born workers, using the 1981 Census data. He again used a logit model to analyse the unemployment rates, and identified consistencies and differences between these two groups. He used a range of human capital variables that included English language facilities, educational attainment and qualifications. He observed that individuals who spoke a language other than English at home had higher unemployment rates. For many birthplace groups, additional years of education were not associated with unemployment rate reductions. On the other hand, possession of trade or other certificate-level qualifications was consistently associated with sizeable unemployment rate reductions.

Inglis and Stromback (1986) analysed the influence of individual characteristics to estimate the probability of an individual being unemployed, using the 1981 Census data. They used a binominal logit model to estimate the probability of unemployment as function of individual characteristics of migrant males and females. They used a range of human capital variables that included proficiency in English, qualifications (Australia or overseas) and education. They concluded that, for migrants the probability of unemployment reduced as education, and proficiency in English increased. Females of NESB origin initially had a greater tendency to be unemployed, but this is diminishing to the level of Australian-born women in long term.

Stromback (1986) investigated the unemployment experience of migrants and compared them with Australian-born workers, using the 1981 Census data. He used a logit model to analyse factors that contributed to greater incidences of unemployment among migrants, than Australian-born workers, using a range of human capital variables that included English speaking ability, attending educational institute and overseas qualification. He concluded that poor knowledge of English was associated with a likelihood of being unemployed for migrant males and females and the

specific migrant variables rather than any other differences between migrants and the Australian-born account for the higher aggregate unemployment.

Brooks and Volker (1986) examined the influence of a number of demographic characteristics, and the duration of unemployment on the probability of leaving unemployment, using ABS March to June 1984 unpublished data. They used a hazard function to estimate the probability of leaving unemployment, using a range of demographic variables that included age and marital status, and found that the probability of leaving unemployment decreased as the duration of unemployment increased, with married females having the highest probability of exit.

McAllister (1986) analysed unemployment conditions between Australian and migrant youths, using survey data from the Australian Institute of Multicultural Affairs, June 1983. He conducted a path analysis to estimate the effect of various factors on unemployment experience, using a range of human capital variables that included education and labour market experience. He found that lack of work experience, little technical education and manual occupations put individuals at greater risk of unemployment for both Australian-born and migrant youth.

Beggs and Chapman (1987) investigated the labour market outcomes of migrants (males) with a particular focus on wages and unemployment, using the 1981 Census data. They used a probit model to determine the probability of being unemployed and used a range of human capital variables that included education and experience. They concluded that probability of unemployment decreased with education for Migrant and Australian-born women. However, at the highest level of education considered migrants had a greater probability of unemployment. On the other hand, migrants with low levels of education did well.

Wooden and Robertson (1990) analysed the labour market status of male and female migrants in Australia, using the ABS Labour Market Survey, March 1987 and the 1986 Census. They used a multinomial logit model to analyse the labour market status of migrants and also to investigate whether there was any tendency for any migrant groups to turn to self-employment, particularly if their probability of employment was low.<sup>21</sup> They used a range of human capital variables that included education, qualifications and English speaking ability. They concluded that language skills were of crucial importance in affecting post-migration employability. Their analysis supported the importance of educational qualification, though not amongst females.

Jones and McAllister (1991) investigated migrant (male/female) unemployment situation for those who arrived in Australia between 1981 and 1988, using issues in Multicultural Australia Survey, 1988. To measure migrant's level of unemployment, they used a logistic regression model, focusing on two issues: initial post-migration unemployment levels (measured as duration) and point-in-time unemployment (measured as a cross-sectional probability). They used a range of human capital variables that included educational qualifications and English proficiency, and found that educational qualifications remained an important factor in

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<sup>21</sup> The incidence of self-employment was a dependent variable that could be an alternative to unemployment.

migrant unemployment, but English language did not consistently emerged as a variable of major importance.

Flatau and Hemmings (1991) analysed the differences that existed between and within migrant generation categories in terms of labour market status, using data from the 1985 Australian Longitudinal Survey. They used a probit model to examine differences in unemployment for different migrant categories, using human capital variables that included experience and educational attainment. They concluded that for young females, job experience and post-school qualifications significantly reduced the probability of being unemployed. The first generation female migrants were much more seriously affected than second-generation migrants.

Jones (1992) explored how fairly the Australian labour market treated different ethnic groups of workers, using the 1986 Census data. He used a logistic regression model to measure the unemployment levels among ethnic groups, using a range of human capital variables that included educational attainments, qualifications and labour market experience. Jones concluded that schooling and qualifications reduced the individual's risk of unemployment. Overseas employment experience also helped to reduce the unemployment, but not as much as local experience. Poor English speakers were more likely to be unemployed.

VandenHeuvel and Wooden (1996) examined the issue of labour market status between migrant and Australian-born women, using the 1991 Census data.<sup>22</sup> They used a multinomial logit model, using educational attainment and English language proficiency as independent variables. They found that lower levels of educational attainments and English-language difficulties were more likely to associate with greater unemployment probabilities for NESB women.

O'Loughlin and Watson (1997) investigated long-term unemployment in Australia during the 1980s and 1990s, with a particular focus on NESB migrants (both male and female), using the 1991 Census, 1993 Training and Educational Experience, Labour Market Status Survey and other characteristics of migrants, life stories and case studies from NESB migrants for long-term unemployed people. To investigate the factors associated with overall unemployment and long-term unemployment, they used a series of logit models.<sup>23</sup> They used a range of human capital variables that included education and English proficiency, and concluded that both familiarities with computers and tertiary education were associated with reduced odds of being long-term unemployed. An important factor associated with increased odds of being long-term unemployed was having low English language proficiency.

Williams et al. (1997) analysed the initial labour market outcomes of migrants, using the 1993–1995 Longitudinal Survey of Migrants to Australia. To estimate the effects of a variety of factors on the probability of a persons being employed, unemployed and not in the labour market, they used a multinomial logit model. They used a range of human capital variables including English speaking proficiency and qual-

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<sup>22</sup> Same authors also analysed the part-time employment, earning, sick and holiday, superannuation benefits, long service leave and working arrangements, using the same methods, which will be discussed in next section.

<sup>23</sup> To understand the processes of generating long-term unemployment they used qualitative methodology.

ifications. They concluded that those with technical or professional qualifications were significantly less likely than those with tertiary qualifications to be unemployed compared to being employed, and also the likelihood of being unemployed rather than employed increased as proficiency in English worsen.

Gray et al. (2003) examined the employment of Australian lone mothers compared with couple mothers, using the 1996 Australian Census data. They used the logit model to analyse the factors, which explained the employment gap, using a range of human capital variables that included education and English proficiency. They also used the decomposition method of Even and Macpherson (1990) to estimate the employment gap between single mothers and mothers who were part of a couple. They concluded that having a low level of educational attainment, speaking English as a second language and, in particular, having poor spoken English, had a larger negative effect upon the probability of employment of single mothers compared with other mothers.

Thapa (2004) examined the labour market success of migrants in Australia, using the 2001 survey of Household, Income and Labour Dynamics in Australia and the 1990 ABS Income Distribution Survey Data. He used a logit model to analyse the risk of unemployment of male migrants, using a range of human capital variables that included education and English proficiency. He concluded that the probability of unemployment for male migrants was consistently higher than that of Australian-born males. The results suggested that English language ability led to a large difference in the employment prospects of migrants.

#### ***2.4.2 Australian Non-Econometric Studies of Unemployment***

Since the 1970s, there has been much research in Australia on unemployment that has not used econometric analysis. This includes Beaumont (1974), Eccles (1982), Storer (1985), Chapman and Miller (1985), Alcorso and Harrison (1993) and Brooks and Williams (1996) and Evans and Kelley (2001, 2002). In this section we outline these important contributions of Australian non-econometrics studies of unemployment. Also see Table 2.2 for a summary that includes studies of unemployment.

Beaumont (1974) investigated the non-metropolitan unemployment position of women in Australia, using 1964–1972 Census data, Labour Market Studies: 1970, and Survey of Registered with People C.E.S during 1969–1972, and concluded that lack of local employment opportunities found to be a serious problem for female unemployment in these areas, particularly longer duration of unemployment.

Eccles (1982) examined variation in unemployment rates among women, married women and men in Australia, using data from the Labour market Survey of Australia 1978 and 1980 and observed that the unemployment rate for women, especially married women, had been greater than that for men.

Storer (1985) studied the labour market status of migrants (male/female), using the 1981 census data and observed that migrants of NESB had higher unemployment rates in general, and for some groups had extremely high unemployment rates.

Chapman and Miller (1985) analysed the issues that associated with migrant unemployment experience, using the 1981 Census data and observed that migrants experienced relatively high unemployment rates, but the extent of this disadvantage diminished as duration of residence increased.

Alcorso and Harrison (1993) examined the position of NESB women in the labour market, and the factors affecting those positions in the context of Australia's changing economy. They used various published and unpublished ABS data from 1989 to 1992 and found very high unemployment rates among some groups of NESB women compared to NESB men and Australian-born women.

Brooks and Williams (1996) analysed the unemployment situation of migrant women and examined how this situation was changing over time, using the ABS, Labour Market Survey data.<sup>24</sup> They concluded that NESB women had higher unemployment rates than those of ESB and Australian-born counterparts. More importantly, they observed that long-term unemployment for NESB women was greater than average and they remained unemployed for relatively longer than any other groups.

### ***2.4.3 Foreign Econometric Studies of Unemployment***

Since the 1970s, there has been a great deal of overseas econometric analysis of unemployment. These works include Hosek (1975) and Mohanty (2000). They mainly used regression and probit models in their analysis. In this section we outline these important contributions of foreign econometrics studies of unemployment. Further details of the works of these authors will be given in Chap. 5. Also see Table 2.3 for a summary that includes studies of unemployment.

Hosek (1975) investigated the unemployment experience among individuals, using the 1967 Survey of Economic Opportunity. He used education as one of the independent variables in his regression model to analyse various weekly and annual measures of unemployment of individuals. He established a conceptual framework that accommodated a variety of theoretical approaches, which furnished a means of translating among various weekly and annual measures of unemployment experience.

Mohanty (2000) investigated black–white unemployment rate differentials in the United States, using the 1987 Current Population Survey data. He used a two-stage probit model to estimate employment probability for black–white males and females. He used education, and experience (human capital variables) as independent variables and concluded that employers hiring decision was positively influenced by workers' human capital endowments (education, experience). More

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<sup>24</sup> ABS, Labour Market Survey, data on microfiche, group 600, Table UE8.

importantly, he observed that black people experienced a higher unemployment rates than whites.

#### ***2.4.4 Foreign Non-Econometric Studies of Unemployment***

In this section we outline foreign non-econometric studies on unemployment.

Malveaux (1999) analysed similarities and differences of unemployment rates between colour and white women using the Selected Economic Characteristics of the Population from the US Bureau of Census, March 1997. The author concluded that the unemployment rate of Hispanic women had been about twice than that of white women, and had been even greater for African American women. More importantly, the unemployment rates among young black women and teens had been greater than among adult women.

### **2.5 Aspects of Labour Market Disadvantage**

This section outlines some important literature concerning labour market disadvantage of women. This literature is vast and we outline some that have a bearing on what we do in later chapters of this book. It tends to range more widely than the previously noted works, however it is clear that differences in participation rates, job status and unemployment rates amongst groups of people might be an aspect of discrimination.

In view of the extent of this literature, we restrict ourselves to a few important econometric works from Australia and overseas, and to Australian non-econometric studies.

#### ***2.5.1 Australian Econometric Studies of Labour Market Disadvantage***

Since the 1990s, there has been some econometric analysis in Australia on labour market disadvantage. These works include VandenHeuvel and Wooden (1996) and Reiman (1998). This econometric literature is mainly based on regression and logit models. See Table 2.1 for a summary that includes studies of labour market disadvantage.

VandenHeuvel and Wooden (1996) investigated the reasons for the under representation of NESB women in part-time employment, and associated labour market experiences and employment conditions, using data from the 1993 Working Arrangements Survey, the Survey of Training and Education, and the 1991 Census. They used logit models to analyse NESB women's part-time employment outcomes, and their access to employment benefits, training, and working arrangements. They also used regression models to examine the level of earning differences

among women. They used a range of human capital variables that included educational attainment, occupational experience and qualifications. They concluded that NESB migrant women were less likely to secure part-time employment, earned less compared to other employed women, and had less access to training, superannuation schemes, flexible working arrangements, sickness and holiday benefits.

Reiman (1998) analysed the gender wage gap in Australia using the 1995 Australian Workplace Industrial Relations Survey Data. He used regression to model the hourly income of all employees and in order to decompose the gender wage gap. He followed the method introduced by Blinder (1973) and Oaxaca (1973), and analysed a range of human capital variables that included schooling, experience and training. He concluded that when the adjusted wage gaps were compared, the English background result was 24% greater than non-English background employees. On the whole, his analysis supported the hypothesis that enterprise bargaining had negatively affected the gender wage gap in Australia.

### ***2.5.2 Australian Non-Econometric Studies of Labour Market Disadvantage***

Since the 1970s, there has been much research in Australia on labour market disadvantage that has not used econometric analysis. This includes Storer et al. (1976), Nord (1984), Martin (1984, 1986), Lampugnani and Mansell (1984), Turpin (1986), Eliadis, Colanero, & Roussos (1988), Chataway and Sachs (1990), Kermond, Luscombe, Strahan, & William (1991), Alcorso (1991), Yeatman (1992), Bertone and Griffin (1992), Foster and Rado (1992), Clapham, Schofield, & Alcorso (1993), Bowen (1993), Keating (1994a, 1994b), Alcorso and Hage (1994), Ganguly (1995), Stephens and Bertone (1995), Warburton, Winocur, & Rosenman (1995), Murphy (1995) and Hawthorne (1996b). In this section we outline these important contributions of Australian non-econometric studies of labour market disadvantage. See Table 2.2 for a summary that includes studies of labour market disadvantage.

Storer et al. (1976) studied the employment situation of migrant women workers in a cross-section of manufacturing industries in Melbourne. They collected data from factories and concluded that migrant women had little choice but to work in factories. In most factories where migrant women work, they found conditions to be extremely poor in terms of temperature, pollution, noise, physical danger, ventilation, lighting, and facilities.

Nord (1984) investigated migrant women's major difficulties in finding jobs and in improving working conditions. She obtained data by interviewing migrant women: at home, work and at English classes and social gatherings. She provided an account of migrant women's experiences and often told of a world of pain, suffering, anger and often despair and hopelessness. These women held back by a number of factors including a feeling of powerlessness, which made them vulnerable to employers' intimidation.



Martin (1984) examined NESB women's contribution in production and social reproduction system.<sup>25</sup> She used Human Relations (1976) data, Trans National Cooperative (1980), Women's Employment Rights Campaign (1979) and literature written for migrant women and showed that since 1947 the majority of NESB migrant women who arrived as dependents of male migrants worked as semi and unskilled workers. She found that these women provided the emotional anchorage for settler migration schemes by marrying their male compatriots and bearing their children, thereby securing appropriate nuclear family unit consumption and labour market reproduction.

Lampugnani and Mansell (1984) analysed the pattern of social inequality that existed in the Australian female labour market using the 1976 Census data. They concluded that emergences of particular groups of women who enjoyed equal rights in theory, but were discriminated against in practice were the result of social stratification based on primarily on ethnic identification.

Turpin (1986) studied migrant's advantages and disadvantages of working in different employment sectors, the problems they faced and the strategies they had adopted to cope with them using data from the Victorian Ethnic Affair Commission between September 1984 and January 1985, and case studies. Turpin concluded that segmentation in the labour market placed culturally distinct waves of migrants in the least desirable occupational structures (including unemployment). Migrants' perceptions of barriers or problems in employment varied according to region of birth, industry of employment, period of arrival and gender.

Martin (1986) examined NESB women's position in the Australian labour market using existing literature and reports written for NESB women, and observed that female migrant populations from these countries were over-represented in low-paid, low-status and unskilled jobs in the manufacturing, building and construction sectors.

Eliadis et al. (1988) investigated the specific issues for the NESB women's gender and ethnicity using material written by and for NESB women and concluded that women from NESB countries were "invisible" since they had been in Australia. However, in recent years there was a growing realization that some of the issues and needs of these women from NESB needed specific attention.

Chataway and Sachs (1990) analysed the status of women in Australian manufacturing using the 1986 Census data, and various reports from the Department of Employment, Education, and Training (1987, 1988). They concluded that migrant women did not have the same access to skilled and managerial positions in manufacturing, as did other women.

Kermond et al. (1991) examined the entrepreneurship of migrant women in Australia using longitudinal survey data and qualitative data from discussions with migrant businesswomen. They concluded that a high proportion of these women failed in business partly because of lack of education and work experience, although they received some support from their spouses and families.

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<sup>25</sup> The term social reproduction system covered labour market reproduction and consumption.



Alcorso (1991) investigated the experiences and other employment issues of the newly migrated women using the 1986 Census and 1987 Labour Market Survey data. She concluded that newly arrived women had better education, more qualifications and more formal job experience than the older settled group, yet this did not appear to improve their employment prospects in Australia.

Yeatman (1992) examined how and in what ways first generation migrant NESB women clothing workers were drawn into the processes of award restructuring. She collected information from government and non-government reports on the clothing industry and interviewing representatives of unions. She concluded that NESB women who fell outside the award were effectively denied the benefits and opportunities of the award restructuring process. This was often because their employers had not registered them as they worked at home, which was outside the effective reach of the award.

Bertone and Griffin (1992) studied various dimensions of the relationship between trade unions and their NESB members. They collected information by interviewing, case studies and multi-lingual surveys of trade unions and their members. They concluded that unions provided limited special services to their female NESB members and these members were not represented in the senior decision-making positions within unions. Female ESB and NESB members held similar attitudes and perceptions towards their unions.

Foster and Rado (1992) investigated the opportunities and access to further education and/or paid employment of NESB women in Victoria, using sources derived from published literature, unpublished materials, relevant conferences, seminars, workshops and face to face and telephone interviews. They concluded that systemic as well as personal factors accounted for the disadvantage that many NESB women experienced in regard to the fulfilment of their literacy, education and training needs.

Clapham et al. (1993) analysed the experiences of NESB work-injured women from New South Wales and Victoria, using information collected from government agencies and private organizations, interviews with injured workers and initial library research. They concluded that since work-injured NESB women comprised one of the "least able" groups of injured workers, existing vocational rehabilitation provision amounted to a system of work-injury management that rendered them economically and socially disenfranchised.

Bowen (1993) examined the vocational experience of migrant women retrenchees in the region of Broadmeadows Migrant Resource Centre, using information from women's experiences and consultation with ethnic groups employed in the textile, clothing and footwear (TCF) industries. She concluded that NESB women, who lost their jobs as a result of the restructuring of the TCF industry, were not getting proper access to available labour market assistance.

Keating (1994a) investigated race and sex discrimination in employment and training in Australia, using information collected from ethnic communities, councils, migrant resource centres and other non-government organizations, consulting with various organizations and existing literature. She concluded that discrimination against NESB women workers in employment and employment related opportunities existed and were often indirect in nature.

Keating (1994b) analysed the need for childcare, which was often a barrier for some NESB women who wanted to enter/re-enter employment or employment related training. She used information from services of employees or students of labour market training programs, literature reviews, and consultations with officers of relevant government departments, union representatives, ethnic childcare and organizations. Keating concluded that the majority of NESB women had problems in relation to childcare, however a small proportion of them found childcare places and went for work.

Alcorso and Hage (1994) examined the experience of NESB women workers with enterprise bargaining, using data collected from a series of interviews with NESB women workers, union officials and NESB women shop stewards and union activists engaged in workplace or enterprise bargaining in Sydney and Melbourne in 1993. They concluded that NESB women worker's experience of enterprise bargaining was marginally better than that of other women workers largely due to their greater representation in their heavily unionised area of manufacturing.

Ganguly (1995) analysed the NESB women's responses to feminism position and their role in Australian multicultural society using available research literature. She concluded that NESB women were passive victims who were locked in a "time warp", and unable to comprehend and tackle the specificities of their own realities.

Stephens and Bertone (1995) investigated the specific experience and factors responsible for the disadvantaged position of NESB women in the manufacturing industry in relation to work-related training. Their analysis was based on interviews with workers from the food, metal and vehicle manufacturing industries, union officials and members of training committees in Melbourne and discussions of relevant documents. They observed that proportions of NESB women and men who did not receive or understand material about award restructuring, enterprise bargaining or available training were much greater than the corresponding proportion for Australian-born/ESB workers.

Warburton et al. (1995) studied the disadvantage experiences of NESB women in the Australian workforce and how that extended into retirement, using information obtained from interviewing NESB women aged over 50, and a comparable sample of ESB women. They concluded that many NESB women retired from work earlier than ESB women due to the problems in obtaining work and poor health. They also received substantially lower retirement incomes.

Murphy (1995) examined the factors that contributed to the lower superannuation coverage for NESB migrant women, using unpublished data from Superannuation, Australia (ABS, 1993). She concluded that NESB migrant females who were employed, unemployed and not in the labour market had lower superannuation coverage than their Australia-born and ESB counterparts.

Hawthorne (1996b) discussed the employment position of skilled NESB migrant women in the Australian labour market, using data from the 1991 Census, Bureau of Immigration (1989) and Bureau of Immigration and Population Research (1994). She concluded that despite personal and professional transitions, many NESB women succeed impressively in the Australian labour market.

### ***2.5.3 Foreign Econometric Studies of Labour Market Disadvantage***

Since the 1970s, there has been some overseas econometric analysis on labour market disadvantage. These include Oaxaca (1973), Gronau (1974), Heckman (1974), Nukamura and Nukamura (1981), Reimers (1982), Ermisch and Wright (1993), Lester (1996), Buchinsky (1998), Boden (1999) and Solberg (1999). This literature is mainly based on regression, probit and logit models. In this section we outline these important contributions of foreign econometric studies of labour market disadvantage. Also see Table 2.3 for a summary that includes studies of labour market disadvantage.

Oaxaca (1973) investigated the male–female wage differentials in the US urban labour markets using the 1967 Survey of Economic Opportunity. To estimate the average extent of discrimination against female workers and to provide a quantitative assessment of the sources of male–female wage differentials, he estimated a regression model that used a range of human capital variables that included experience and education. He extended Becker's (1957) definition of market discrimination by using the ratio of the wage to the wage when there was no discrimination. He concluded that male–female wage differentials were quite large and unequal pay for equal work did not account for very much male–female wage differential. The concentration of women in lower paying jobs produced the large differentials and a substantial proportion of the male–female wage differential was attributable to the effects of discrimination.

Gronau (1974) examined the wage-offered distribution among married women in the US using the 1960 Census data. He used regression to estimate the wage offer distribution among married women, and a probit model to estimate a housewife's value of time in labour market participation. In both models he used a range of human capital variables that included education and working experience, and concluded that changes in observed wages tended to understate the changes in the wages offered that were associated with an increased in education. Using the average wage of workingwomen tended to overplay the direct effect of education on labour-force participation.

Heckman (1974) examined the married women's market wages and labour supply using the 1967 US National Longitudinal Survey data. He extended the Tobit model to a simultaneous equations system, which allowed different parameters to affect a decision by women to work, her hours of work, her observed wage rate and her asking wage or shadow price of time. He used a range of human capital variables that included education and experience. He found that more educated women worked more frequently and worked longer hours than less educated women. An additional year of labour market experience raised the market wage.

Nukamura and Nukamura (1981) analysed the labour market behaviour of US and Canadian wives, using the 1970 US Census and the 1971 Canadian Census. They used probit, generalized least squares (GLS) and interactive GLS procedure to analyse the probability of working, offered wage rates, and hours of work of those

groups. They concluded that the coefficient of education was more positive for the US than for Canada. The offered wage rates of wives were positively related to an index of local job opportunities, and a wife was more likely to work as her potential wage rate increased. However, the hours of work and the offered wage rate were negatively related for working wives.

Reimers (1982) analysed the wages of Hispanics, Blacks, and Non-Hispanics White males and females in the US using the 1976 Survey of Income and Education data. He used probit and regression models to analyse the probabilities of being a wage earner and wage offer, using a range of human capital variables that included education, experience and command of English. He also used the wage decomposition method introduced by Oaxaca (1973) in order to estimate the wage differentials between minority individuals and White non-Hispanics. Reimers concluded that English deficiencies did not significantly affect women's wages within groups having the same education and time in the US, nor did race have a significant impact on wages within Hispanic groups. The differences in education, and not labour market discrimination against the ethnic groups, were found to be the main reasons for the shortfall in wages for Mexican-American women.

Ermisch and Wright (1993) examined wage offers and full-time and part-time employment of British women using the 1980 Women and Employment Survey data. They used an ordered probit model in order to examine whether women in part-time jobs received lower wage offers compared to full-time jobs, using a range of human capital variables that included qualifications, education and experience. To examine the impact of wage offers and other variables on women's choices, they conducted a probit model and concluded that full-timers gained more from additional years of full-time or part-time work experience than did part-timers. This suggested a smaller return to on-the-job human capital investments in part-time jobs. While an additional year of education had similar effects on women's full-time and part-time wage offers, women were rewarded more for their formal qualifications in full-time work. The difference in women's expected wage offers between full-time and part-time employment was an important determinant of whether she worked full-time, while a husband's income mainly affected the decision of whether to participate. In addition, it appeared that women who worked despite having observed characteristics that discouraged employment were much more likely to work part-time.

Lester (1996) explored the part-time employment of married women in the US using 1980 Census data. He used factor analysis and regression analysis for part-time, full-time and total employment of married women, using a range of social and economic variables. Lester concluded that the female labour market participation was an important factor behind the part-time employment of married women across the 48 continental states.

Buchinsky (1998) examined the changes at different points in the wage distribution of the US female wage structure using 1968–1990 Current Population Survey data. Buchinsky developed a model following Gronau (1974) that adjusted for selectivity bias in the job search process. A quintile regression was used to deal with this problem where the conditional quintile of observed wages depended on a range

of factors and an unknown form of bias, which could not be corrected using the usual parametric method for sample selection. He used a non-parametric method suggested by Heckman (1979) and Newey (1991) to deal with this problem. He used a range of human capital variables that included education and experience and concluded that the most pronounced decreases in wage inequality were observed for high school graduates, while for younger college graduates there were significant increases in wage inequality through most of the sample period. Also, highly qualified women earned significantly greater wages compared to lesser-qualified women.

Boden (1999) studied the gender differences in self-employment selection using the Contingent Work Survey and the supplement of the February 1995 Current Population Survey. He used a probit model to analyse the impact of having young children on self-employment status and concluded that women with young children were more likely to be self-employed than any other groups.

Solberg (1999) analysed the gender pay gap, using the 1991 National Longitudinal Survey of youth data. He used the Neumark/Cotton extension of the Blinder/Oaxaca decomposition method of wage discrimination using educational attainment, experience and other variables for occupational preferences. He concluded that the inclusion of occupational dummy variables in a human capital wage equation reduced the unexplained portion of the gender pay gap and reduced the estimated effect of market discrimination.

## 2.6 Conclusion

In this chapter, we reviewed the literature that is relevant of the labour market status of NESB women in Australia. Most of the econometric studies used regression, logit and probit models mainly based on census and labour market surveys data. The non-econometric studies were mainly based on survey and individuals collected data.

Although we believe that we have reviewed the Australian literature that is relevant to this book, the overseas literature is enormous. Because of this, we have provided a sample of what exists, largely from US sources.

Australian and foreign econometric literature on participation status examined women's participation and their opportunities in the labour market, including participation decision of low-income females with children, the impact of children on female labour supply and labour market outcomes of migrant women. A common theme in all of these models was the conclusion that human capital variables like education, experience and English skills had a tremendous effect on the labour market participation of individuals.

The literature concerning occupational status used various measures of occupational status and attainment. Most of these authors concluded that occupational status was strongly depended on educational attainments. Importantly, many of the

authors observed that after controlling for other factors, migrant women occupied lower status positions.

Unemployment status for migrant women was also reviewed in this chapter. Unsurprisingly, poor educational qualifications were generally found to be important in determining whether individuals were more likely to be unemployed. They concluded that migrant women groups in Australia had higher unemployment rates than those of Australian-born women, which were associated with a lack of skills in English.

The Australian non-econometric studies that we reviewed examined a diverse range of issues including migrant women's occupations, occupational attainment and status, motherhood, labour market participation, pay, wage-work, employment, unemployment and discrimination. These authors generally concluded that NESB women had not only lower labour market participation rates, but also occupied the low status positions. NESB women had higher unemployment rates than those of other women and they concluded that there was some discrimination against NESB women workers in employment and employment opportunities. Discrimination, however, involved a range of possibilities and there was not much evidence of discrimination on the basis of ethnicity and the like on the part of employers. For the most part, it was indirect discrimination on the basis of individuals having lesser human capital attributes.

Having noted the importance of human capital variables in these works, it is clear that they are not the sole determinants of labour market status. The econometric analyses use a range of demographic variables that typically include age, presence of children, marital status, place of residence and length of residence in the country. When these controls are added to the models, having better education and greater labour market experience remain as key factors. In the case of migrants, it is also clear that English language skills are also important in determining labour market outcomes.

The literature that we have discussed in this chapter focuses on the relationship between labour market status and human capital and demographic attributes of individuals. It is hard to claim that after half a century of investigation of this matter that there are major gaps in the literature or that its theoretical underpinnings are erroneous.

It is clear that there is a continuum of jobs ranging from, at one end, the tedious and low paid with precarious tenure, to those with high pay and congenial working conditions. Having said that, both the general public and policy makers often speak of "good" jobs and "bad" jobs, and this corresponds with primary sector and secondary sector jobs, which is the basis of dual labour market theory. Certainly, one of the aims of education is to prepare young people for "good" jobs; certainly Australian governments have taken a range of measures over the years to improve working conditions in occupations that were both dangerous, poorly paid and offered no tenure. Although there seems to be considerable interest in "good" and "bad" jobs from several perspectives, we believe that no attempt has been made to categorise jobs as primary sector and secondary sector jobs in Australia.

Outside Australia, some researchers have attempted to categorise jobs as primary sector or secondary sector. Nevertheless, we have been unable to discover any research that examines the factors that affect the probability that an individual will have a primary sector job using a probit or logit modelling approach. In addition, there has been no empirical analysis of whether the probability that an individual has a primary job is significantly less for NESB migrant women than Australian-born women in Australia.

In the empirical economics literature, researchers have sometimes used a bivariate probit analysis when an observable outcome is dependent on a prior decision. For example, Devaney and Chien (2000) used a bivariate probit model in analysing the decision to participate in a retirement plan for self-employed and wage-earner workers. They considered employment status (wage-earner or self-employed) and retirement plan participation (participate in the retirement plan or not), which were likely to be jointly determined and examined whether there were any unobserved factors that influenced both decisions.<sup>26</sup> We conjecture that this is analogous to the decision of an individual to participate in the labour market and are unaware of any use of bivariate probit that attempts to address this matter.

In the next three chapters, for both NESB and Australian-born women, we address factors that determine labour market participation, primary sector employment and unemployment. In particular, we will investigate whether NESB women are less likely to have primary sector jobs and more likely to be unemployed than Australian-born women. In these chapters we will use binary probit models to test for the effects of a range of human capital and demographic variables on these matters. Finally, we will readdress these issues using a bivariate probit modeling approach.

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<sup>26</sup> Further example of the use of bivariate probit analysis will be outlined in Chap. 6.

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