




# The Unemployment Imbalance Between Non-English-Speaking Migrant Women and Australian Born Women

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## Abstract

This study compares Non-English-Speaking migrant women's unemployment situation with that of Australian born women, using the currently available 1% sample from the Australian 2016 Census data. A new general probit model is used to estimate the probability of unemployment for both groups combined, as well as for each of these groups separately to show the difference in unemployment rates between the two groups. Our contribution is to show how to estimate and test the imbalance in unemployment rates between the two groups. We show that the unemployment rate for Non-English-Speaking migrant women (7.2%) is significantly higher than for Australian born women (5.1%), but the gap is narrowing over time. We show that the unemployment rate for Non-English-Speaking migrant women increases when they are married and have children and when they have poor English proficiency and lower education levels. This implies that there is a significant higher probability of unemployment for Non-English-Speaking migrant women across human capital and demographic controls. We have discussed other dimensions of unemployment such as discrimination and cultural activities and shown that these are the main factors behind the relatively higher unemployment rate for Non-English-Speaking migrant women.

**Keywords** Non-English-Speaking migrant women · Australian born women · Unemployment · New general probit model · Australia

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## Introduction

This study provides an empirical investigation of the unemployment situation for Non-English-Speaking migrant women (NESMW) and compares this with that of Australian born women (ABW). NESMW are identified by their country of birth or where English is not their main language, as reported in the 2016 census. Unemployment is defined in the 2016 census as persons aged 15 years and over who: (i) were not employed during the reference week; (ii) had actively looked for full-time or part-time work at any time in the four weeks up to the end of the reference week, and (iii) were available for work in the reference week.

This study extends previous works which found that NESMW are over represented amongst the unemployed. There is a *prima facie* case that NESMW are grossly disadvantaged in the Australian labour market (LM). Australian governments are increasingly concerned with unequal opportunities for NESMW, which is the subject of extensive academic and public interest. Many authors such as Markovic and Manderson (2000), Evans and Kelly (2001), Reserve Bank of Australia (2007), Ryan (2009) and many others have studied unemployment for NESMW. They found that lower levels of educational attainment, poor English proficiency, and non-recognition of overseas qualifications and work experience were more likely to associate with greater probabilities of unemployment for NESMW. More importantly, some authors such as Scarth (2013), and Natasha (2013) pointed out that the real unemployment rate among NESMW is much higher than the official rate.

These authors mainly found determinants and trends for the NESMW's unemployment rate, using regression, probit, logit and other methods, which are reviewed in the next section. However, none of these studies estimated and tested the imbalance for unemployment rates between NESMW and ABW attributable to various determinants, which this study provides. The main contribution of this study is to estimate and test the imbalance of unemployment rates between NESMW and ABW, using a fully integrated probit model based on a pooled data set obtained from the two groups. It estimates the probability of unemployment for both women groups combined, as well as probabilities of unemployment for each of the groups separately, which has not been shown before. This study sheds light as to why unemployment is unequal, what improvement has been achieved and what policy measures might be undertaken to further reduce the unemployment differential between these two groups. Hence, this study will advance the current literature by providing more evidence on unemployment of NESMW relative to ABW.

The rest of this study is organised as follows. The determinants of LM unemployment for NESMW are provided in Sect. 2. Data used for the study are given in Sect. 3. Section 4 is concerned with methodology. Empirical illustrations are presented in Sect. 5. Some important discussions on employer's discrimination and employee's cultural activities are provided in Sect. 6. Some conclusions and limitations of the study are given in the final section.

## Determinants of Unemployment Status

The explanatory variables used in our model are based on previous studies, which are summarised together with expected a priori signs as follows.

### English Proficiency

Many authors including Evans (1984), Inglis and Stromback (1986), Toscano (2016), Wanberg (2012), O’Loughlin and Watson (1997), and Jones and McAllister (1991) used English proficiency in their analyses to investigate the effect on unemployment. These authors showed that the lack of English language proficiency is one of the main factors affecting a person’s unemployment and indicated that English proficiency is negatively associated with unemployment status for NESMW.

We expect this could be an important determinant of the probability of unemployment for NESMW. We use categories of English proficiency used in the census for NESMW and construct a dummy variable for each group, which are English spoken: (i) very well (ENGVW); (ii) well (ENGW); (iii) not well (ENGNW); and (iv) other (EXCELLENT), a reference group when compared with the other groups. The a priori signs of the coefficients of ENGVW, ENGW and ENGNW are expected to be positive, positive large and positive very large respectively.

### Educational Attainment

Miller (1986), Flatau and Hennings (1991), VandenHeuvel and Wooden (1996), O’Loughlin and Watson (1997), Kler (2006), Wagner and Childs (2006), and many others used education as one of the independent variables in their models to examine the effect of education on unemployment. These authors showed that education is a human capital endowment and individuals might reduce their probability of unemployment by supplying more education to the LM and vice versa. NESMW obtained less benefit from their education than ABW. We used levels of education as an explanatory variable and use four educational dummies: a degree (DEGREE), a diploma (DIPLOMA), skilled vocational qualification (SKILL); and basic vocational qualification (BAV) as a reference group. The a priori signs of the coefficients of DEGREE, DIPLOMA and SKILL seem to be negative very large, negative large and negative small.

### Age

Evans (1984), McAllister (1986), Jones (1992), VandenHeuvel and Wooden (1996), Baum and Mitchell (2008), and many others used an age variable for their unemployment studies. These authors argued that age is an important characteristic and is likely to influence the probability of unemployment of individuals, as age corresponds with the ability to work at one’s full potential. In general, they concluded that age was negatively associated with unemployment. Women’s broad age group is more relevant than age in years for unemployment. Accordingly, we use three

dummies: **YOUNG** < 30 years old (taken as a reference group); **MIDDLE**  $\geq$  30 and < 50 years, **MATURE**  $\geq$  50 and < 70 years. The a priori signs of the coefficients are not certain. However, for **MIDDLE** the coefficient may perhaps be negative, while for **MATURE** the coefficient may perhaps be positive.

### Labour Market Experience

McAllister (1986), Beggs and Chapman (1987), Flatau and Hemmings (1991), Jones (1992), Mohanty (2000), Boyce et al. (2010) and Karren and Sherman (2012) used LM experience as one of the explanatory variables in their unemployment studies. These authors argued that a person who has more LM experience is less likely to become involuntarily unemployed than a person who has less experience. However, it should be noted that non-recognition of overseas work experience is a problem for NESMW. We define an individual's LM experience as: **EXPERIENCE** = 2011 (Census year) minus the mid-value of the year of the highest qualification completed. The a priori sign of this coefficient is expected to be negative.

### Length of Residence in Australia

Evans (1984), Inglis and Stromback (1986), Wooden (1990), Jones and McAllister (1991), Australian Bureau of Statistics (2010), Uysal and Pohlmeier (2011), and Wanberg (2012) used length of residence as one of the independent variables in their analysis of unemployment of NESMW. These authors argued that with the passage of time, migrants usually gain local skills, acquire new knowledge more suited to Australian employers' requirements and gain more information about job opportunities, which helps them in obtaining employment. Hence their probability of unemployment fell as the period of residence in Australia increased. We use length of residence (**LRA**) in years in Australia: **LRA** = 2011 (census year) minus the mid-value of the year of arrival in Australia. The expected a priori sign of the coefficient is negative.

### Marital Status

Evans (1984), Brooks and Volker (1986), Jones and McAllister (1991), Jones (1992), VandenHeuvel and Wooden (1996), Australian Bureau of Statistics (2010), and Bingley and Walker (2001) used marital status as one of the independent variables for their analyses. These authors argued that marital status is important. It is associated with lower LM attachment amongst married women. They also found that married women have high unemployment rates compared to those never married. One dummy variable for marital status: **MARRIED** (married versus unmarried) is used. The expected a priori sign of the coefficient is uncertain, but may be negative.

## Presence of Children

Evans (1984), De la Rica (2007), Brooks and Volker (1986), VandenHeuvel and Wooden (1996) and Li (2017) used number of children to analyse women's unemployment. These authors argued that women with children are more likely to be unemployed. One single dummy variable: 'CHILD' (Number of children ever born: yes/no), is used. The a priori sign of the coefficient is positive.

## Place of Residence

Apergis and Georgellis (2018) and Wamuthenya (2010) used place of residence as one of the variables for their unemployment studies. They found that having a residence in rural and small urban areas increased the probability of unemployment for both NESMW and ABW compared with those living in metropolitan areas. One place of residence dummy variable: MET (Living in a metropolitan versus nonmetropolitan area), is used. The expected a priori sign of the coefficient is negative.

## Data

This study uses 758 NESMW and 2457 ABW from the 1% sample of the 2016 Australian Census (Australian Bureau of Statistics 2016a). It restricted the sample to women in the age range of 15–70 years, who participated in the LM. Females outside this age range can participate and work but are not considered here because their numbers are relatively small. It is seen from these data that the unemployment rate for NESMW (7.2%) is significantly higher than for ABW (5.1%) in 2016. This may happen due to lack of English language, local education, and knowledge of the local job market together with other factors. A higher percentage (10.5%) of NESMW are degree holders compared to ABW (8.5%), but they are still more unemployed than ABW, probably because of non-recognition of overseas qualifications and experiences. Also, a higher percentage of unemployed NESMW were married (72%) and had at least one child (68.5%) compared to 55.2% and 50.5% respectively for ABW, which might partly explain their higher unemployment rate, because many Australian employers don't want to hire married NESMW who have children. They might not have access to child-care and hence many of them stay home for family reasons rather than working in the LM and therefore become unemployed. Also, many of them are not LM participants, as they are not actively looking for work.

## Methodology

We have used an integrated general probit model to compare the impacts of variables on the probability of unemployment between the two groups.<sup>1</sup> The estimated parameters of the general probit model cannot be compared directly. However, ‘marginal effects’ based on the estimated coefficients of the general model can be compared between the two groups. The magnitude of the differences of various variables between two groups can also then be easily interpreted once marginal effects are estimated.

Marginal effects for both groups can be estimated by forming one fully integrated probit model as in Eq. (1) below for both NESMW and ABW, where ‘NESMW’ is a dummy variable which equals 1 for NESMW, and 0 otherwise. This model is flexible as the effects of all variables are allowed to differ for both groups with ‘NESMW’ capturing the difference between NESMW and ABW. The magnitude of the differences of various variables between the two groups can then be easily interpreted once marginal effects are estimated. All main and some interaction variables, including some interaction terms with the ‘NESMW’ dummy variable, are used in this model.

$$\begin{aligned}
 UNE_i^* = & \alpha + \lambda NESMW_i + \beta_1 ENG VW + \beta_2 ENG + \beta_3 ENGNW + \delta_1 LRA \\
 & + \beta_4 DEGREE_i + \gamma_4 DEGREE_i \times NESMW_i \\
 & + \beta_5 DIPLOMA_i + \gamma_5 DIPLOMA_i \times NESMW_i \\
 & + \beta_6 SKILL_i + \gamma_6 SKILL_i \times NESMW_i \\
 & + \beta_7 EXPERIENCE_i + \gamma_7 EXPERIENCE_i \times NESMW_i \\
 & + \beta_8 MIDDLE_i + \gamma_8 MIDDLE_i \times NESMW_i \\
 & + \beta_9 MATURE_i + \gamma_9 MATURE_i \times NESMW_i \\
 & + \beta_{10} MARRIED_i + \gamma_{10} MARRIED_i \times NESMW_i \\
 & + \beta_{11} CHILD_i + \gamma_{11} CHILD_i \times NESMW_i \\
 & + \beta_{12} MET_i + \gamma_{12} MET_i \times NESMW_i \\
 & + \beta_{13} MATURE_i * MARRIED_i + \gamma_{13} MATURE_i * MARRIED_i \times NESMW_i \\
 & + \beta_{14} MATURE_i * CHILD_i + \gamma_{14} MATURE_i * CHILD_i \times NESMW_i \\
 & + \beta_{15} MIDDLE_i * MARRIED_i + \gamma_{15} MIDDLE_i * CHILD_i \times NESMW_i \\
 & + \beta_{16} MIDDLE_i * CHILD_i + \gamma_{16} MIDDLE_i * CHILD_i \times NESMW_i \\
 & + \beta_{17} MIDDLE_i * MARRIED_i * CHILD_i + \gamma_{17} MIDDLE_i * MARRIED_i * CHILD_i \times NESMW_i \\
 & + \beta_{18} MARRIED_i * CHILD_i + \gamma_{18} MARRIED_i * CHILD_i \times NESMW_i + \varepsilon_i
 \end{aligned} \tag{1}$$

<sup>1</sup> It is not possible to compare the difference in probability of unemployment between the two groups, using two separate models, because (i) usually two samples drawn from two different error distributions are not NID ( $\mu$ ,  $\sigma$ ); (ii) the magnitude of coefficients can't be compared due to different positive scalars; (iii) focusing on the significance of the results without considering magnitude is not reasonable, because of the vast difference in sample sizes; (iv) under *ceteris paribus conditions* precision of the estimation and significance levels would be expected to differ; (v) the coefficients of the probit model cannot be interpreted easily.

**Table 1** Probit Models for NESMW and ABW's Labour Market Unemployment\*

Variables	General model		Parsimonious model		Marginal effects at mean values
	Parameter estimates		Parameter estimates		
		(0.000)		(0.000)	
Constant	0.245	(0.000)	0.225	(0.000)	0.011 (0.000)
NESMW	0.108	(0.000)	0.015	(0.000)	0.080 (0.000)
ENGWV	0.160	(0.035)	0.125	(0.000)	0.015 (0.000)
ENGW	0.288	(0.000)	0.221	(0.000)	0.225 (0.000)
ENGNW	0.820	(0.000)	0.602	(0.000)	-0.155 (0.008)
DEGREE	-0.218	(0.000)	-0.180	(0.000)	0.125 (0.015)
DEGREE*NESMW	0.182	(0.044)	0.222	(0.045)	
DIPLOMA	-0.148	(0.280)			
SKILL	-0.061	(0.008)	-0.055	(0.021)	-0.058 (0.100)
SKILL*NESMW	0.091	(0.030)	0.068	(0.058)	0.045 (0.050)
MATURE	-0.121	(0.000)	1.120	(0.000)	0.083 (0.000)
MATURE*NESMW	0.262	(0.043)	0.250	(0.001)	0.105 (0.038)
MIDDLE	0.088	(0.048)	0.158	(0.050)	-0.025 (0.009)
MIDDLE*NESMW	0.195	(0.034)	-0.230	(0.028)	0.042 (0.036)
EXPERIENCE	-0.110	(0.035)	-0.221	(0.020)	-0.028 (0.035)
EXPERIENCE*NESMW	0.190	(0.028)	0.112	(0.044)	-0.019 (0.025)
LRA	-0.125	(0.160)			
MARRIED	0.551	(0.029)	0.335	(0.035)	0.055 (0.030)
MARRIED*NESMW	0.188	(0.045)	0.118	(0.030)	0.022 (0.035)
CHILD	0.401	(0.018)	1.005	(0.012)	0.051 (0.000)
CHILD*NESMW	0.2 05	(0.042)	0.158	(0.050)	0.125 (0.012)
MET	-0.035	(0.255)			

Table 1 (continued)

Variables	General model		Parsimonious model		Marginal effects at mean values
	Parameter estimates		Parameter estimates		
MATURE*MARRIED	0.235	(0.035)	0.215	(0.000)	0.125 (0.010)
MATURE*MARRIED*NESMW	0.225	(0.008)	0.202	(0.015)	0.092 (0.045)
MATURE*CHILD	0.221	(0.030)	1.010	(0.027)	0.111 (0.000)
MATURE*CHILD*NESMW	0.156	(0.005)	0.120	(0.034)	0.052 (0.000)
MIDDLE*MARRIED	0.178	(0.140)			
MIDDLE*MARRIED*NESMW	0.325	(0.025)	0.255	(0.045)	0.022 (0.035)
MIDDLE*CHILD	0.580	(0.028)	0.218	(0.044)	0.061 (0.000)
MIDDLE*CHILD*NESMW	0.335	(0.048)	0.158	(0.032)	0.085 (0.048)
MARRIED*CHILD	0.44	(0.048)	0.275	(0.037)	0.111 (0.028)
MARRIED*CHILD*NESMW	0.358	(0.042)	0.228	(0.046)	0.080 (0.033)
MIDDLE*MARRIED*CHILD	–	(0.044)	–	(0.038)	0.080 (0.009)
MIDDLE*MARRIED*CHILD*NESMW	0.194	(0.000)	0.125	(0.037)	0.101 (0.045)
Log-L	–5933.5		–5454.8		
Restricted-Log L	–6400.4		–6380.5		
Chi-Squared	1,225.5	0.000	1,355.1	0.000	
Correct Prediction	98.5%		92.80%		
R <sup>2</sup>	0.125		0.148		

\*P-values are presented in parentheses ()



In this model (1), the dependent variable  $UNE_i^*$  is a latent variable such that  $UNE_i^* = 1$  if  $UNE_i^* > 0$  and 0 otherwise.  $\varepsilon_i$  is the error term and is supposed to be normally distributed, and all main explanatory variables are defined in Sect. 2. We estimate this model (1), using a pooled data set of 3215 observations obtained by combining 758 NESMW and 2457 ABW. The parameter estimates and their p-values are presented in Table 1, which indicates that all the coefficients are significant and have the expected signs, except for DIPLOMA, MET, LRA and MIDDLE\*MARRIED. These insignificant variables were then removed, and a more parsimonious model was estimated, whose estimated parameters; ‘marginal effects,’ and corresponding p-values were calculated at the mean values of the various independent variables and these are provided in Table 1. It is seen from this table that all the coefficients and marginal effects for all explanatory variables have the expected signs and all of them are significant. A likelihood ratio test was used to test the null hypothesis ( $H_0$ ) that all the coefficients and ‘marginal effects’ for the estimated parsimonious model were jointly equal to zero, and it was rejected. The data fits the model of this type well on the basis of the coefficient of determination,  $R^2 = 0.148$ . The percentage of correct predictions of the model was 92.80%, which is a significantly larger ratio than expected predictions one would get.

## Empirical Illustrations<sup>2</sup>

This section mainly interprets the ‘marginal effects’<sup>3</sup> of various explanatory variables in the *parsimonious* model for both NESMW and ABW groups as presented in Table 1, because it can provide the probability of LM unemployment for both groups, as well as the probability of unemployment for NESMW compared to ABW. This latter result enables us to see if there is any significant imbalance in LM unemployment between NESMW and ABW due to specific factors.

Table 1 shows that the marginal effect (ME) of NESMW is positive and significant, indicating that overall, after controlling for human capital and other variables NESMW were 1.1% more likely to be unemployed than ABW. The ME of ENGVW (0.080) compared to ‘Excellent English’ was positive and significant. Similarly, the MEs of ENGW (0.150) and ENGNW (0.225) compared to ‘Excellent English’ were both positive and significant, suggesting that those NESMW with lower English proficiency were more likely to be unemployed. This suggests that acquiring better English skills might help NESMW to avoid unemployment.

The ME of DEGREE compared to BAV is -0.155 which is negative and significant, indicating that possession of a degree makes both women groups 15.5% less likely to be unemployed. However, the ME of DEGREE\*NESMW is positive and

<sup>2</sup> A similar approach was applied to a logit model, and the results were very close to this general probit model.

<sup>3</sup> The marginal effect of a binary independent variable exhibits how the probability changes when the variable changes from 0 to 1, keeping all other variables constant. The marginal effect of a continuous variable measures the rate of change for one unit change of an independent variable *ceteris paribus*.

significant, showing that NESMW are 12.5% more likely to be unemployed than ABW if they hold a degree. The effective MEs for NESMW and ABW can be calculated respectively by the formulae in Eqs. (2) and (3) given below.

$$ME_{NESMW} = [ME_{ABW} \pm ME_{NESMW*(variable\ concerned)}], \quad (2)$$

and

$$ME_{ALL} = [2,457 * ME_{ABW} + 758(ME_{ABW} \pm ME_{NESMW*(variable\ concerned)})]/3,215 \quad (3)$$

These show that NESMW and ABW have a reduction of 5.9% and 18.4% respectively in the probability of unemployment when they have a degree rather than BAV. The ME of SKILL shows that both groups have a 5.8% reduction in the probability of unemployment when they have a SKILL rather than BAV. The ME of SKILL\*NESMW shows that NESMW are 4.5% more likely to be unemployed than ABW when they have SKILL rather than BAV. The effective ME for NESMW (-0.023) and ABW (-0.068), indicate that for ABW the probability of unemployment reduces at a much higher rate than NESMW when they have a SKILL rather than a BAV. The coefficient for DIPLOMA in the general model is negative, but insignificant, meaning that having a DIPLOMA has no impact on the probability of unemployment for women in Australia. Our results provide some support for the hypothesis that possessing a degree, or a vocational skill make both women groups less likely to be unemployed. Additionally, the probability of unemployment for NESMW falls at a higher rate when they have a degree rather than a vocational skill. Our results are consistent with Evans (1984), McAllister (1986), and Williams et al. (1997).

The ME of MATURE is 0.083 which is positive and significant, suggesting that mature women of both groups are more likely to be unemployed compared to young women. However, the ME of MATURE\*NESMW is positive and significant, showing mature NESMW are 10.5% more likely to be unemployed than ABW. The effective ME suggests that 16.3% and 5.8% of mature NESMW and ABW were respectively more likely to be unemployed compared to equivalent non-mature women. The impact is higher for NESMW probably because Australian employers don't want to hire them because of their age and lack of knowledge of technology. The ME of MIDDLE shows that both groups of middle-aged women are 2.5% less likely to be unemployed compared to young women. But, the ME of MIDDLE\*NESMW indicates that middle aged NESMW are 4.2% more likely to be unemployed than ABW. This might happen because many middle aged NESMW cannot find jobs after arrival due to non-recognition of overseas qualifications and experiences, and lack of knowledge of local culture and job opportunities.

The ME of EXPERIENCE is negative and significant, suggesting that possession of an additional year's experience reduces the probability of unemployment for both groups by 2.8%. The ME of EXPERIENCE\*NESMW shows that NESMW are 1.9% less likely to be unemployed than ABW for an additional year's work experience. The effective ME is -0.043 for NESBMW and -0.023 for ABW, showing that the impact is higher for NESMW than ABW. The coefficient for length of residence in

Australia (LRA, not relevant for ABW) in the general model is negative and insignificant, suggesting that the probability of NESMW being unemployed does not significantly change due to an additional year's living in Australia. This is possible because NESMW may not get any chance to gain local skills and knowledge even if they spend an additional year in Australia.

The ME of MARRIED indicates that married women of both groups are 5.5% more likely to be unemployed. The ME of MARRIED\*NESMW shows that married NESMW are 2.2% more likely to be unemployed than ABW. The effective MEs show that NESMW and ABW are 7.2% and 4.9% more likely to be unemployed respectively, when they are married compared to their non-married counterparts. This may happen, because Australian employers may not like to hire married NESMW or many of them prefer to work from home due to family responsibilities.

The ME of CHILD is significantly positive and suggests that women of both groups are 5.1% more likely to be unemployed when they have a child. The ME of CHILD\*NESMW shows that married NESMW who have a child are 12.5% more likely to be unemployed than their married ABW counterparts who have a child. The effective MEs show that NESMW and ABW increased their probability of unemployment by 14.7% and 2.2% respectively when they had a child. The impact is much higher for NESMW, probably because they either cannot afford or cannot get access to childcare facilities, or because they don't want to use childcare because of their culture (see Chapman and Miller 1985). As a result, they stay at home for family responsibilities and cannot work and become unemployed.

The coefficient of MET in the general model is negative and insignificant, showing that both groups of women who live in metropolitan areas are less likely to be unemployed and the impact is the same for both groups, because of greater job prospects. The ME of MATURE\*MARRIED suggests that mature women from both groups who are married are 12.5% more likely to be unemployed. However, the ME of MATURE\*MARRIED\*NESMW shows that mature married NESMW are 9.2% more likely to be unemployed than ABW. The effective MEs for NESMW (19.5%) and ABW (10.3%) show that both groups are more likely to be unemployed when they are mature and married. The impact is much higher for NESMW.

The ME of the interaction variable MATURE\*CHILD (0.111) suggests that women of both groups who are 'mature' and who have children are 11.1% more likely to be unemployed. However, the ME of MATURE\*CHILD\*NESMW (0.052) is positive and significant, showing that being mature and having a child makes NESMW 5.2% more likely to be unemployed than similar ABW. The effective ME for NESMW still shows that they are 15.1% more likely to be unemployed compared to 9.9% for ABW. The impact is much higher for NESMW than ABW, possibly because many Australian employers don't want to employ NESMW when they are mature and have children, because the employers may believe that they are dedicated to family responsibilities rather than work and may be out of touch with modern technology. Also, they cannot afford or don't get access to childcare. As a result, they stay home for domestic duties.

The coefficient of MIDDLE\*MARRIED in the general model is positive and insignificant, showing that women from both groups who are middle aged and married are more likely to be unemployed, but the impact is the same for both groups.

The ME of MIDDLE\*CHILD shows that for both groups of women being ‘middle’ aged and having children increases the likelihood of unemployment by 6.1%. The ME of the interaction variable MIDDLE\*CHILD\*NESMW suggests that middle aged NESMW with children are 8.5% more likely to be unemployed than similar ABW. The effective ME for middle aged NESMW indicates that their probability of unemployment increases by 12.6% when they have a child compared to 4.1% for ABW, which is higher for NESMW. This might happen because NESMW who are middle aged and have children may look after children and maintain family responsibilities. This is because many of these women do not have easy access to childcare like ABW, and many of them don’t want to use childcare, because of their culture (Chapman and Miller 1985). Thus, many NESMW don’t work and become unemployed.

The ME for MIDDLE\*MARRIED\*CHILD shows that being middle aged, married and having children causes the probability of unemployment to increase by 8% for both groups of women. The ME for MIDDLE\*MARRIED\*CHILD\*NESMW then suggests that being middle aged, married and having children makes NESMW 10.1% more likely to be unemployed than ABW. The effective MEs are 15.7% and 5.6% for NESMW and ABW respectively. The impact is higher for NESMW possibly because most ABW use childcare in order to work, while NESMW don’t have easy access to childcare and don’t want to leave their children in childcare due to cultural sensitivities. In this situation, they cannot look for a full-time job, while part-time jobs may be difficult to find. Thus, a high percentage of NESMW may work at home and become unemployed.

The ME of MARRIED\*CHILD indicates that being married and having a child increases by 11.1% the probability of unemployment for both groups. The ME of MARRIED\*CHILD\*NESMW shows that being married and having a child makes NESMW 8% more likely to be unemployed than ABW. The effective ME of NESMW shows that they are 17.2% more likely to be unemployed compared to 9.2% for ABW, possibly because Australian employers don’t want to hire NESMW when they are married and have children. Also, NESMW may not have easy access to childcare compared to ABW, and don’t want to keep children in childcare, because of their culture. As a result, some of them stay home and look after their children rather than seek full-time employment. Some look for part-time work, but these jobs are harder to find. As a result, more NESMW become unemployed.

## Discussion

This study shows that in 2016 there was a 7.2% unemployment rate for NESMW, which is significantly higher than 5.1% unemployment for ABW. More importantly it shows that NESMW have a higher probability of unemployment due to most individual explanatory factors. In particular, NESMW are 12.5%, 12.5%, 10.5% and 10.1% more likely to be unemployed than ABW respectively when they have degrees, have children, are older, and are married with children and middle aged. Also, some previous studies such as Reserve Bank of Australia (2007), Haque and Haque (2008), Ryan (2009) and many others showed that

unemployment rates are significantly higher for various determinants for NESMW compared to ABW. All these clearly show that various skills and demographic factors were more likely to associate with greater probability of unemployment for NESMW than for ABW, and show that NESMW may be disadvantaged across human capital and demographic controls.

These studies did not consider other dimensions of unemployment such as employers' discrimination based on employees' identities and culture that may affect the unemployment rate for NESMW. This is discussed below through reference to various existing studies.

There are now many studies such as Syed and Murry (2009), Pio, (2005), Mighty (1997), Misztal (1991), Syed and Pio (2010), Syed (2007, 2008), Pierre and Guillaume (2013) and many others demonstrate that unemployment for NESMW depends not only on their human capital skills and demographic characteristics, but also on how employers discriminate against NESMW based on their race, ethnicity, religion, country of birth, personal behaviour and cultural activities. Systemic race-based discrimination in the workplace occurs through avoidable and unfair differences in recruitment, selection and interviewing, job allocation, seniority, role ambiguity, performance evaluation, training, promotion, remuneration, dismissal, resignations and retirement among staff of various racial, ethnic, cultural and religious backgrounds. Australian migrants from Asian, Middle Eastern and African backgrounds appear to be particularly vulnerable to race-based discrimination and may experience high unemployment at a time of low overall unemployment (Kryger, Parliamentary Library, Research Note 2005). This trend is mirrored in various overseas countries (Weichselbaumer 2020; Adida et al. (2010), Pierre' Guillaume 2013).

Dreher and Simmons (2006) indicated that attitudes of prejudice and hatred often focus on visible signs of ethnicity, culture or religion., which can be seen from the comments of some NESMW as follows, which are quoted from Syed and Murry (2009)

“I applied for my jobs .... they gave me a reply like no, no, for five or six months ... because of my name. It sounds foreign so they “don't call me” (Afghan engineer, 23)”

“She was a good worker, but because of her language .... she was fired (Pakistani banker, 24).”

Many studies such as Bouma et al. (2003), Ho (2006, 2007), Syed (2006, 2007, 2008), Syed and Ali (2005), Kamenou and Fearfull (2006), and Winter (2006) clearly show that Asian migrant women are discriminated against based on their colour, religion, dress code, behaviour and social practices, which could be attributed to pure discrimination or structural barriers such as employers' lack of willingness to adequately recognise qualifications and experiences gained in Asia (Syed and Pio 2010; Junankar et al. 2004; Parr and Guo 2005). They suffer greater job loss and higher increases in unemployment than ABW. NESMW face stagnation in the workplace and lack of opportunities such as not being considered for promotions, not having the same access to training and coaching as

ABW, and some NESMW even mentioned that they were paid less than ABW for doing similar jobs (Syed 2007; Watson 1996).

Syed (2007) also indicated that the experiences of NESMW in the public sector are not much different from those in the private sector. A public employment report of New South Wales showed that NESMW were found to be paying a 'heavy double load' in the workplace.

On the whole, NESMW from culturally and linguistically diverse background face discrimination on the basis of their race, colour, religion, country of birth and many others, which can be direct or indirect. Exploitation, low pay, sexual harassment, and discrimination were often faced by NESMW in the workplace (Braddock and McPartland 1987, Evans and Kelly, 1986, 1991 Foroutan, 2008).

Australian HREOC (2004), Fair Work Act 2009-Legislation (2009), and some state and territory laws protect people from discrimination on the basis of personal characteristics, covering race, harassment, bullying and many others. However, diversity management in Australia has generally focused on ABW, with inadequate focus on NESMW (Syed 2007). As a result of discrimination, and cultural background, NESMW remain disadvantaged within the Australian labour market relative to ABW. This is amply reflected in NESMW's concentration in precarious and low-grade jobs, and their under-representation in decision making positions (Miszta 1991; Junankar et al. 2004). This implies that the Government and businesses remain incapable of managing NESMW labour force diversity. Syed and Pio (2010) suggested that issues of exclusion and ethnic discrimination are still an everyday reality in Australia. Furthermore, a recent survey has shown that almost 60% of coloured women respondents experienced discrimination in the workplace (Women of Colour in Australia 2021). Until today, there is no study to know to what extent employers' discrimination against NESMW affect their unemployment.

Besides employer's discrimination against NESMW their cultural and behavioural activities may also be responsible for their high unemployment in Australia. This is because they like to maintain their cultural, religious and social values. Hence, they are disadvantaged due to their personal and social activities (Kame-nou and Fearfull 2006; and Winter 2006), which can be seen from their comments such as "I want to work ... special hours, that's why I could not go on to the higher level ..., because of my responsibilities at home (Pakistani, Education 38; Syed and Murry (2009))".

There is a lot of literature regarding NESMW, particularly Muslim women, who are attached to the concepts of motherhood, domesticity and traditional caretaker roles at home, where traditional expectations of women as homemakers remain common practice (Jamali et al. 2005; Kazemi 2000; Moghadam 1998; Walter 1981; Ali 2015; Bradley et al. 2005). Also, NESMW's unemployment depends on the accessibility and affordability of childcare (Haque and Haque 2020). NESMW are more likely than ABW to cite family responsibilities (68.5% for NESMW as against 50.5% for ABW had at least one child in 2016 in Australia) as a reason for staying outside the labour market. Similar experiences were also observed for British NESMW (Dyke and James 2009, p. 6; Akhtar 2014).

To date it is still not known to what extent cultural differences affect unemployment. However, Brugger et al. (2009) studies the role of culture in shaping



unemployment outcomes based on local comparisons across a language barrier in Switzerland and found that the differences in culture explain differences in unemployment in the order of 20%.

From the above discussions, it is seen that employer's discrimination, and cultural activities may be important factors behind the high unemployment rate for NESMW compared to ABW. On the whole, NESMW's unemployment rate may be affected by discrimination. The effect of the difference in culture on unemployment can be considered to be in the order of 20% (as per Brugger et al. 2009). NESMW may have been disadvantaged at least to some extent due to discrimination and culture. Thus, it can be concluded that discrimination and culture are the causes behind the high unemployment rate for NESMW compared to ABW.

## Conclusion

One of the most significant economic changes in recent years has been the decrease of women's unemployment in Australia. The Labour Market Survey of the Australian Bureau of Statistics (2016b) shows that the unemployment rate for NESMW has decreased over the last 20 years, but this is still significantly higher than for ABW, which is consistent with the findings of this study. This study shows that in 2016 there was a 2.1% (7.2–5.1%) difference in unemployment between NESMW and ABW compared to 5.1% (12.7–7.6%) in 1996 (Haque and Haque 2008), showing that the imbalance in unemployment is narrowing between the two groups over time. This may happen because of many governments' socio-economic, educational, and immigration policies. Moreover, recently many highly educated, skilled and efficient women came to Australia who found jobs easily without became unemployed. However, English remains the main problem for NESMW's unemployment. Moreover, NESMW suffer high unemployment due to many reasons such as non-recognition of their overseas qualifications and experiences, non-affordability and lack of access to childcare facilities together with employer's discrimination and their own cultural activities.

The probability of unemployment for 'mature and middle' aged NESMW with children and who were married was much higher than for their ABW counterparts. This might happen because many Australian employers don't want to hire NESMW when they are married and have children. Moreover, they don't get easy access to childcare probably because their cultural attitudes to childcare, and their lack of English proficiency and knowledge of the local environment. Some NESMW don't like to work when they are married in order to look after children and also because of their culture. This study shows that this can be improved by introducing more English language programs, and by providing more vocational educational programs, and more degree and diploma courses. Also, Australian governments, educational institutions and private employers should judge overseas qualifications and experiences more carefully so that NESMW should not be disadvantaged when looking for jobs in the LM. Easy access to childcare should also be ensured for NESMW who want to keep their children in childcare. More importantly Australian organisations including Australian governments should maintain unbiased workplace diversity

for NESMW to make sure that NESMW should not be discriminated against in the workplace based on their race, colour, religion, country of birth, dress code etc. Also, NESMW should realize the work environment and should be flexible to adopt to the work environment and accept the available facilities such as childcare. All Non-English-Speaking migrant families should also learn how to share household and other works appropriately and provide facilities to their women to work in the market economy.

There are some limitations in our study. First, our study is restricted to the data available in the 2016 Australian Census. Here, individuals provided their own assessment on some variables such as ‘English Language’ which may not be accurate. We also use the ‘child ever born’ variable provided in the census for our CHILD variable, which might affect our results. Also, some variables like ‘age’ and ‘metropolitan areas’ are defined by our own convenience, which may affect our results if defined otherwise. Moreover, there are many other important variables such as partner’s income, assets etc., that are not considered in this study because of unavailability of data in the census. On the whole, the definition of variables, unavailability of data in the census, and model suitability make the study difficult. Most importantly, the use of aggregated NESMW from many countries into one group is a serious problem. This is because there is likely to be great differences amongst various NESMW groups (Abbott and Tyler 1995).

Despite the above problems, this study makes significant contributions by using a new flexible probit model, and several important interaction variables that provide the effects of several explanatory variables as well as the difference between NESMW and ABW groups with respect to variables of interest. More importantly, it provides the actual imbalance and effective marginal unemployment rates for various independent variables for NESMW and ABW separately to understand the exact probability of unemployment differential between these two women groups, which has never been shown before. Thus, it provides a significant contribution to the LM. Moreover, the use of the new general probit model, incorporating intervention variables has improved the estimation of the unemployment rate from previous studies. For example, the combined effects (via interaction variables) of being married and having children appear to be relatively more important than the effects found by ignoring these interactions. Finally, this analysis reconfirmed that having better English skills and education together with adoption of Australian work habits and employer’s non-discrimination are important factors that may decrease the probability of unemployment for NESMW.

A fresh analysis should be undertaken when the future CURF Census data will be available to see the position on NESMW’s unemployment rates for various NESMW groups such as different religious groups and different groups by country and continent, using the methods of Fairlie (2005), and Schwiebert (2014). Also, independent of human capital, demographic and other variables, NESMW were more likely to be unemployed in the LM than ABW, and this could be due to discrimination against NESMW and their cultural behaviour. Despite many problems with the census data, this study reconfirmed the predictions of human capital theory that the opportunity cost of unemployment increased with the level of human capital if employer’s discrimination and their cultural activities could be removed from society. Finally,



this analysis suggests that by acquiring a high level of English for NESMW, and high levels of education for both NESMW and ABW, their likelihood of unemployment in the Australian LM could reduce significantly. However, it is expected that NESMW's unemployment rate would be higher than for ABW because of employer's discrimination and their cultural habits.

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