EMPLOYMENT RATES OF
YOUNG MĀORI WOMEN[1]

Dale Warburton

Ministry of Women's Affairs

Abstract

While the employment rate of women has risen steadily in New Zealand over the last two decades, employment is still highly variable by ethnicity and age. One of the groups least engaged in paid employment are young Māori women (15-24 years). Their employment rates are much lower than their Pākehā counterparts (42% and 64% respectively) and this is not offset by their greater involvement in education. In fact, at 33% Māori actually have much lower education participation rates than Pākehā (46%). On the other hand, young Maori women are much more likely to be in one of the unpaid work categories identified by Statistics New Zealand. Is it this greater incidence of unpaid work by Maori explain their lower participation in employment and education? Although there is a general awareness of these differences, there has been no systematic enquiry into the possible reasons for the relatively low engagement of young Māori women in the formal economy. Using a full set of 178,776 unit records pertaining to all young Māori and Pākehā women from the 2001 Census of Population and Dwellings, I develop a number of novel measures of household composition as indicators of domestic responsibilities. These become arguments in a multivariate statistical model in which young women are modelled as choosing to work in the formal paid and/or participate in education. The results show that young Māori women's choice of paid work is no more sensitive to her domestic responsibilities than those of young Pākehā women, but they do encounter these responsibilities far more often.

Introduction

That domestic responsibilities compete with women's participation in the formal economy is well known and remains the dominant factor differentiating men and women's engagement in the labour market (for example see Alexander & Genç, 2005; Brooks, 1991; Chiao & Walker, 1992; Harris, 1992; Harris & Raney, 1991; Russell T. Ross, 1987; Shirley et al., 2001; Winkelmann & Winkelmann, 1997). Such differences not only separate men and women but increasingly differentiate women from one another. Within the female population employment is highly variable by ethnicity and age and young Māori women are among the least engaged in paid work.

The question I pose in this research is whether young Māori women are embedded in household structures that more heavily constrain their participation in the labour market than is the case for young Pākehā women? There are at least two possibilities. The first is that young Māori women could be far more exposed to the conditions which constrain women to the domestic realm such as child care, and caring for the sick and elderly. A second reason could be that Māori women's response to these domestic pressures is more marked, resulting in a greater compliance due to cultural differences in the strength of social obligations.

In order to assess the relative importance of these two possible reasons a multivariate statistical approach is adopted. Using the full set of 178,776 unit records from the 2001 Census of Population and Dwellings, I develop measures of household dependency as indicators of domestic responsibilities. These include the number of young women's own children, *other* household member's children, elderly household members, and ill, sick or disabled household members.

The results yield quantitative estimates which show that young Māori women are no more responsive to domestic responsibilities, as measured by household composition, than young Pākehā women. Rather their much lower participation rates simply reflect the fact that they encounter these constraints far more often. As such, the results serve to shift much of the responsibility for their low levels of participation in paid work and formal education from young women *per se* to the nature of the Māori household and the dependency structures implied therein. In this sense the low participation of young Māori women might be most usefully viewed as an integral part of a much wider question about the role of history and social structure in an employment constrained economy.

Outline

Six sections follow. Section 2 compares the differential employment and education rates of young Māori and Pākehā women. Section 3 provides a brief summary of prior New Zealand literature. Section 4 outlines the unit records made available from the 2001 New Zealand Census of Population and Dwellings. Section 5

introduces the multinomial logit model used to estimate propensity of young women to choose different activity states. The findings are discussed in section 6 along with implications for future research. Tables of results are placed at the end of the paper.

Differential Employment Rates

Despite increases in women's labour market engagement over the last decade, Figure 1 shows that there still exists substantial difference between Māori and Pākehā labour force participation and employment rates.[2]

The differences between Māori and Pākehā women's engagement in paid work are even more noticeable when broken down by age group. Pākehā women have consistency higher employment rates than Māori women in all but one age category (65 plus) as shown in Figure 2. The differences are most marked at younger ages exposing young Māori women as one of the least formally engaged demographic groups in the country. That young women will have lower employment rates in general is to be expected given that many are still in school. Therefore one possible reason for the lower rates we see in the case of young Māori women could be their greater involvement in education. However this is not the case; not only is Māori women's employment fourteen percentage points lower than those of Pākehā women, but

the education rates for those not employed are twenty-three percentage points lower than Pākehā rates. In other words a much larger proportion of young Māori women are not participating in either the formal employment economy or in further education.

In this research I use unit record data from the 2001 Census of Population and Dwellings to construct four different education and employment choices; employment only, studying only, both studying and employment, and neither studying or employed, identified here as inactivity.[3]

Figure 3 shows how young women switch between various activities as age increases. The percent of young women employed only rises with each passing age while the percent only studying declines rather sharply. While the trends apply to both groups, the turning points and rates are quite different. The percent of Pākehā women in both education and employment is far higher particularly between the ages of 15 and 20, suggesting that many more Pākehā students hold down part-time jobs to support themselves through tertiary and secondary education than is the case for young Māori women. Māori inactivity rates are between fifteen and seventeen percentage points higher throughout the age range. Addressing this difference is one of the primary motivations for this study.

Figure 1. Labour force participation rates and employment rates of Māori and Pākehā women, 1996-2007.
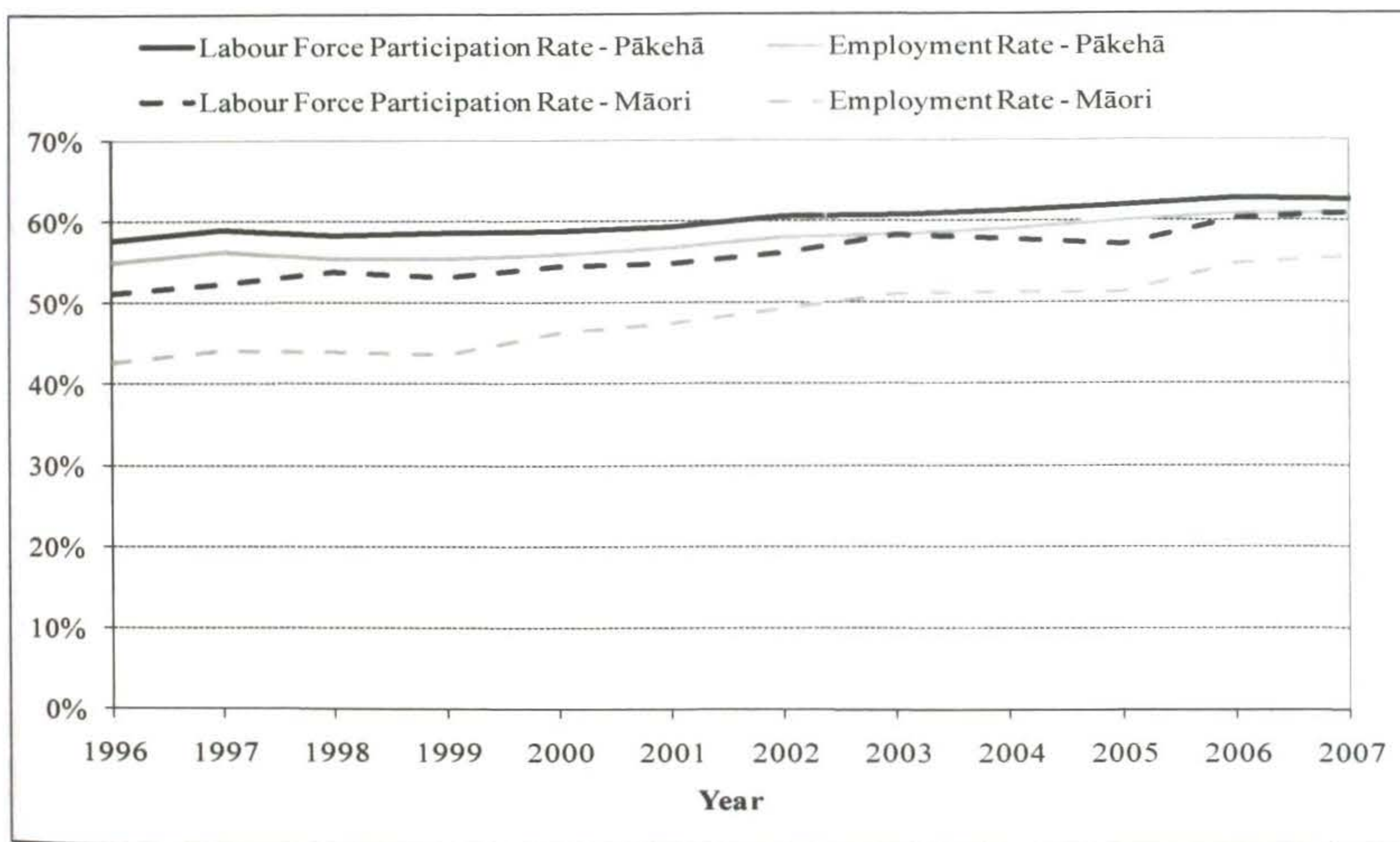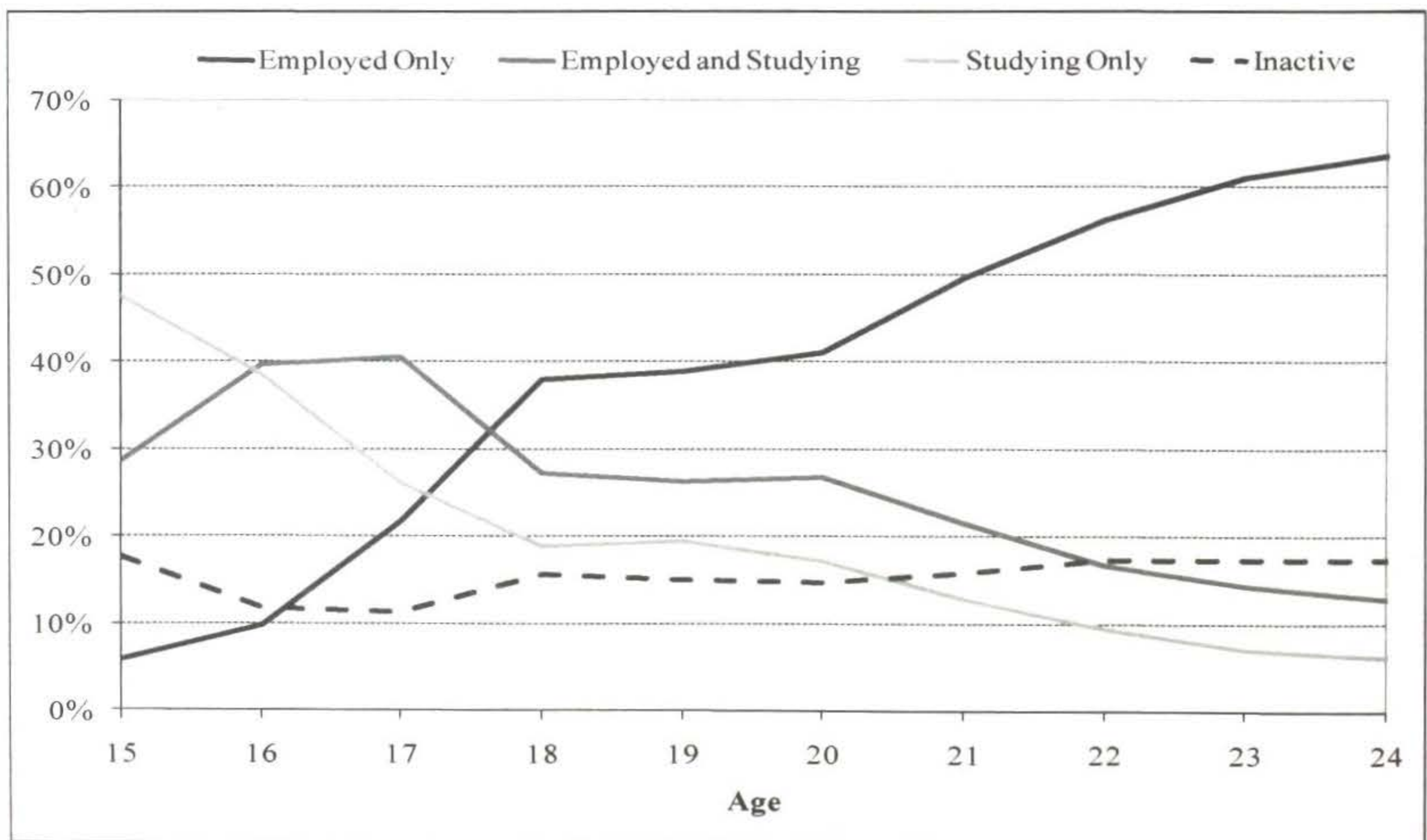

Source: Statistics New Zealand (2003; 2007)

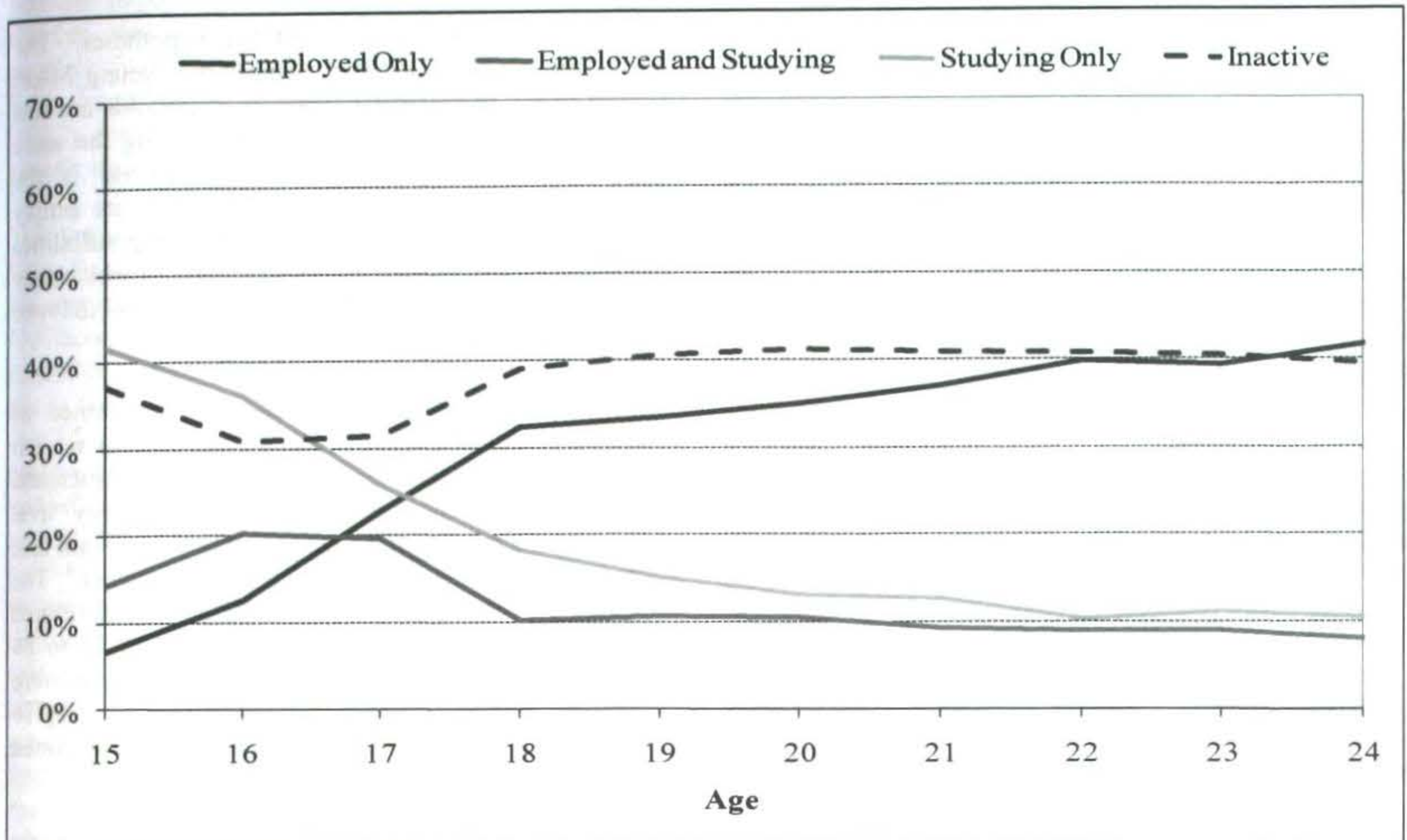**Figure 2. Employment rate of Māori and Pākehā women by age group, 2006.**

Figure 3. Activity choices made by young Pākehā and Māori women by age group, 2001
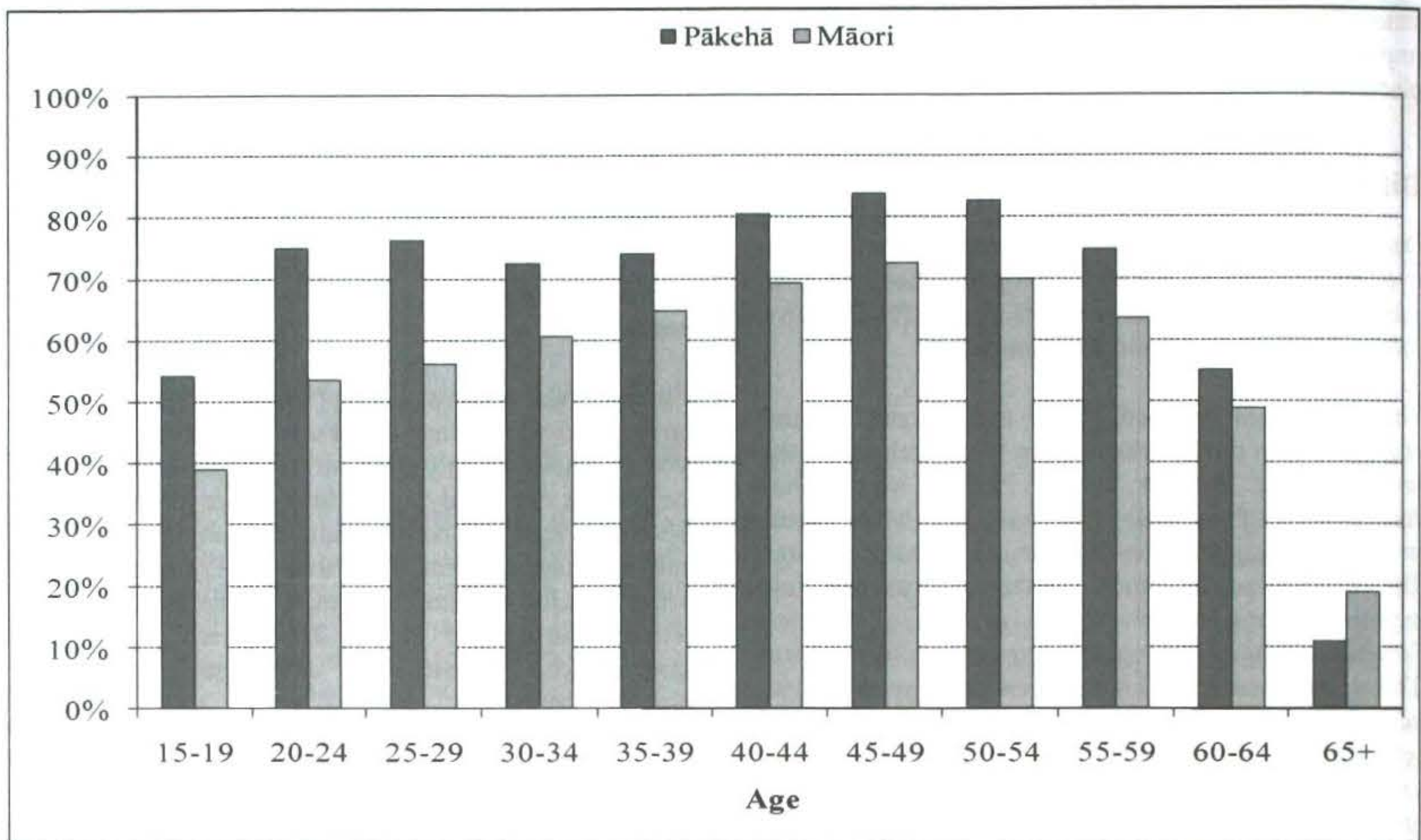
a. Pākehā

b. Māori

Source: New Zealand Census of Population and Dwellings 2001

Literature Review

A common theme running through studies of female labour supply is the role that children play. In one of the earliest papers on married women, Russell Ross observed how the presence of at least one child aged under five years had a very strong negative effect on the likelihood of labour force participation (Ross, 1987). However, his results for children aged over five showed no clear correlation with labour force participation. Ross also suggested that spousal income and family transfer income had a small negative effect on the probability of women being in the labour force. Finally, and somewhat surprising, both school and previous work experience were not correlated with labour force participation.

Nearly two decades later Alexander and Genç (2005) found that educational qualification did positively influenced women's participation. Age, other household income, immigrant status and years since immigration were also important. In terms of domestic responsibilities, Alexander and Genç continued to register a negative effect for the number of children aged under five and also the number of children aged over five, indicating that not only does the presence and age of children matter, but the number of children had also become important.

Drawing on the Christchurch Health and Development Survey, Maani (2000) examined the employment and education choices of young adults in an attempt to understand, among other things, the determinants of labour supply. In terms of identifying the role of household structures Maani also showed that the number

of siblings in the household strongly raises the likelihood of women being employed as opposed to being unemployed or out of the labour force. Whether the individuals' parents own the house the women lived in was also found to have a positive correlation with their chances of employment. There was also evidence of peer effects on employment, as young women who had an affiliation with more deviant peers were less likely to be employed. Similar results were found when examining the probability of studying as opposed to be unemployed or out of the labour force.

While there has been a steady stream of research on women's labour force participation relatively little attention has been paid to ethnic differences and only then to women in all age groups. One of the more comprehensive studies undertaken to investigate potential factors that can explain ethnic differences in labour force participation was conducted by Winkelmann and Winkelmann (1997). In their attempt to understand the level of influence that demographic and socio-economic background factors have, they found that age and education were important. For example, they found that Māori women's participation was more sensitive to the local unemployment rate whereas there were no correlation for non-Māori women. The greater sensitivity of local labour markets indicates Māori have a higher sensitivity to local labour demands and hence to the particular geography of the labour market (Morrison, Papps, & Poot, 2006).

Cunningham et al. (2002) highlighted the high incidence of health and disability difficulties faced by older Māori

noting that two-thirds of single and almost a half of coupled older Māori people required assistance with household chores, or maintenance of their house or care from extended family. A significant proportion of older Māori also rely on other family members to provide transport. Additional responsibilities Māori face in caring for elderly relatives may therefore contribute young Māori women's lower engagement in the labour force.

In terms of household responsibilities, Winkelmann and Winkelmann (1997) also found that women who were single parents were much less likely to be in the labour force than women who do not have children. A similar pattern is also found for partnered parents, however the strength of the negative effect is not as great. Domestic responsibilities, including childcare, are clearly much greater for both single mothers, and one would expect these to contribute to a reduced likelihood of being in the labour force. Note however these authors found that the negative effect of single parenthood was slightly greater for non-Māori than for Māori.

As Harris (1992) identified, Pākehā women tended to withdraw from the workforce to a greater degree than Māori women when they had at least one child aged below five years or between five and nine years. A similar study by Harris and Raney (1991) also found that the negative effect of the presence of young children was greater for Pākehā women. If women undertook unpaid voluntary work, then they were also more likely to be in the labour force than women who did not participate in voluntary work and that this positive correlation was almost twice as strong for Pākehā as it was for Māori women (Harris, 1992). Again, however, these results are for all women, not the young women who are the subject of my enquiry.

Other researchers have found additional factors which could explain ethnic differences in employment rates. Two qualitative studies showed that poor general health can play a role. Almost twice as many Māori workers than non-Māori claim to have not been able to work because of illness or disability according to Cunningham, Fitzgerald and Stevenson's (2005). Pouwhare's (1999) study showed how family violence from spouses can seriously inhibit women's ability to search for, perform and retain work in the labour market.

In summary, while there is a body of literature examining female labour supply in New Zealand, only a small portion has focused on ethnic differences and none appears to focus specifically on *young* women. The literature that has specifically addressed ethnic differences however suggests that the effect of age, qualifications, marital status, the presence and age of children and local labour market conditions may all play a role individually and in combination. The question is whether these influences exert their effect disproportionately on young Māori women.

Data and Methodology

This research is designed to test two hypotheses. The first is the 'response' thesis, namely that young Māori women living in particular types of households are less likely to seek paid work than Pākehā facing the same apparent dependency structures. The second is the 'exposure' thesis: that young Māori woman are simply more likely to be exposed to domestic responsibilities inferred from the household compositions in which they live and this more common exposure is sufficient to lower their relative employment and education rates.

Identifying the presence and relative importance of domestic responsibilities for the activity choices women make requires access data on both individual women and the structure of the households in which they live. Following a formal application access to the relevant unit records from the 2001 census records was granted.[4] The analysis has been able to draw on the individual records of all young Māori and Pākehā women aged 15 to 24 (inclusive) living in a private dwelling and who were home on census night. This amounts to 178,776 individuals of whom almost a quarter (24%) defined themselves as being of Māori ethnicity.

In addition to the records for young women, records for all usual residents in households containing a young woman were included in order to construct a measure of household structure. In this way I have been able to ascertain whether a young woman lived with elderly persons, people with an illness, injury or disability, her children as well as other people's children.

Table 1 summarises the control and dependent variables accessed from the 2001 census. The variable name is followed by the description. Columns in the table refer to the proportion of Pākehā and Māori women for the particular categorical variable, and the means and standard deviations for the continuous variables.

Identifying Alternative Activity States

The dependent variable, *actstat*, represents the four different combinations of employment and education that a young woman reported at the time of the census; *employed only, employed and studying, studying only,* and *neither employed nor studying*. For example, the last two columns of Table 1 show that young Pākehā as a whole are nearly nine percentage points more likely to have been employed in March 2001, less than one percentage point more likely to be just studying, but more than thirteen percentage points more likely than Māori to combine both employment and education. Māori, on the other hand, are almost 23 percentage points more likely than Pākehā to be engaged in neither the labour nor education markets. It is these differences that I wish to model as a function of the young women's domestic responsibilities as inferred from the structure of her household.

I measure domestic responsibility in two ways; first, by the inclusion of six variables on unpaid work activities

and secondly by identifying the presence and number of potential dependents: elderly people aged over 65, own children under five, own children aged 5-16, other people's children age under 5, other people's children age 5-16, household members on accident compensation (ACC), domestic purposes benefit (DPB), unemployment benefit, and an invalids or sickness benefit.

The 'exposure' hypothesis argues that a young woman living in a household containing individuals with any of the characteristics listed above, will experience decreased likelihood of participation in formal work and/or education as a result of the additional caring and support she is being expected to offer at home. Table 1 shows that Māori are more likely to have children in all four categories, as well as having more elderly people present, and relatively more household members who are ill and on each of the four benefits.

In summary, access to unit record data from the 2001 census has allowed the representation of both the composition and structure of the young woman's household at the level of detail necessary to more comprehensively differentiate the domestic responsibilities, which I am suggesting might account for the differences in the combination of employment and education activities they undertake.

Model

I estimate two separate models of activity choice. Model (1) estimates a young woman's probability of being in one of the four activity states as a function of her ethnicity, age and a range of other characteristics as listed in Table 1 including household composition, socioeconomic status, unpaid work activities and geography.

More formally young women make a choice of activity from states, j=1, …J. Generalising from the binary choice logit model, I can write:

(1) $$Pr(y_i = j) = \frac{e^{X_i \beta_j}}{1 + \sum_j^J e^{X_i \beta_j}}$$

and

(2) $$Pr(y_i = 0) = \frac{1}{1 + \sum_j^J e^{X_i \beta_j}}$$

where, for the ith respondent, y_i is the observed response and X_i is the vector of explanatory variables. The unknown parameters β_j are typically estimated by maximum likelihood (Borooah, 2001).

When the above two equations are estimated for the sample I realise the respective logits, which when exponentiated to produce the 'relative risk ratios' (e^β) are equivalent to the odds ratios in the binary case. These in turn can be substituted in to (1) and (2) above to generate expected probabilities of the respective events relative to

the base. It is these estimated probabilities which are of particular interest.

The paper builds interpretations of the results around the *rate* at which these *estimated* probabilities change with unit changes in specific arguments of interest (marginal effects), while holding the others at their means. In other words, the interpretations are based around the rate of change in the probability for each step change (0 to 1) in the relevant discrete variables.

(3) $$\delta(Pr(y_i = j)/ \delta x$$

The first model on 'exposure' asks whether Māori are just as likely as Pākehā women to participate in paid work and/or education after controlling for demographic as well as household structure and geographic location. The second thesis on 'response' asks whether the domestic responsibilities variables play a quantitatively more important role in choice of activity if the young woman is Māori. In doing so I explore a number of interactions including Age*Māori, Individual Characteristics*Māori, Household Composition*Māori, Socioeconomic Status*Māori, Unpaid Work Activities*Māori, and Geography*Māori.

Results

Domestic Responsibilities

With respect to the exposure hypothesis Table 2 reports the marginal effects each household composition variable has on the likelihood of a young women (regardless of ethnicity), selecting one of the four activity status when all other factors are controlled for. For example, the first row under household composition shows that when a young woman has one child aged under 5 years, she is 13.9 percentage points less likely to be employed, 17.7 percentage points less likely to combine employment and education, and 32.7 percentage points more likely to be inactive. There is no statistical effect that alters the probability she will study or not.

We also learn that for each additional child aged under five years that a young women has after her first child, there is a further 3.7 percentage point drop in the likelihood that she will be employed only. There is also a 4.7 percentage point increase in her likelihood of being inactive for every additional child aged under five.

A similar pattern is found if a woman has children of school age. The first school age children increases the probability she will not be engaged in either paid employment or in study, however the magnitude of this effect is considerably less than for the pre-school aged children. This is not particular surprising given that primary school is where the state begins to make a substantial investment in the development of the child through compulsory education, therefore allowing more time to be allocated to other activities such as paid employment.

Each of these results are consistent with previous New Zealand research including Hillcoat-Nallétamby and Dharmalingam (2002) and Ross (1987) although Alexander and Genç (2005), Ross (1987), Harris and Raney (1991), and Chiao and Walker (1992) showed a decline in women's labour force participation to be less when their children were of school age than when they are pre-school aged children.

What is new in this research is that the presence and number of *other people's* children also seems to be influential in a women's choice of activity state. I find that young women who live with one child aged under five years that does not belong to them are six percentage point more likely to be inactive than young women who do not have that child. Furthermore, for every additional *other* child aged under five in the household the probability of being inactive rises a further two percentage points. Thus, not only are young women's employment participation lowered by her need to care for her *own* children, but it also seems that it is further reduced by the presence of *other* people children in the same household.

These particular marginal effects hold for *both* Māori and Pākehā. However, the results for Māori are greater simply because young Māori women are more likely to have children in each of the four categories described above. In other words, the difference in their market inactivity rates is due to the greater *exposure* Māori women have to children.

Similar results apply to young women living with an elderly person where one person aged over 65 increases by four percentage points the likelihood of her not engaging either in paid work and/or education. Every additional member of the household on an invalid or sickness benefit increases the chance of a woman being inactive by an additional three percentage points. Again, I interpret this as reflecting the likelihood that young women are called upon to assist and care household member with health conditions although it possible that such conditions are also picking up unobserved attributes of households not directly associated with caring *per se* which may reduce the opportunity or willingness to undertake paid work or further education.

What these results show in short is that young Māori women are more likely to live in households which contain children, elderly or people with poor health, and it is the women's greater exposure to these conditions which is responsible for their lower rates of both employment and education participation regardless of ethnicity.

With these results in mind I turn to whether the effects of this exposure are greater for Māori than Pākehā women. That is, whether Māori respond differently in participation terms to living in particular types of household. This is the 'response' model.

Responses to Domestic Responsibilities

The second model involves interacting the Māori indicator variable with household specific attributes in order to identify whether young Māori women are more (or less) likely to respond differently to young Pākehā women faced with the same conditions.

Suffice it to note that the results of the interactions provide little evidence to suggest that domestic responsibilities do in fact affect the employment and education choices of Māori more than Pākehā. The results show that if a young Pākehā woman has one child aged under five years then her probability of being only employed decreases by 16.5 percentage points, and for every additional child aged under five this decreases by a further four percentage points. There is no statistically significant difference between Pākehā and Māori in this respect. Given the full set of controls from Table 1 in the model, Pākehā and Māori women can equally expect the first child aged under five to decrease their chances of being employed by 16.5 percentage points and every additional child under five to decrease the same probability by a further four percentage points. Māori are no more likely to decline work or further study as a result of having young children than are Pākehā.

When it comes to the way domestic responsibilities affect the likelihood of being inactive and the likelihood of combining employment and education there are noticeable ethnic differences. Young Pākehā women with one of their own child aged under five are much more likely to be inactive (by 39 percentage points). By contrast Māori are 8.7 percentage points less likely than Pākehā to be out of paid work and study when they have one child under five, a result that has already featured in the literature reviewed above. As a result young Māori women are 30.3 percentage points more likely to be market inactive. Similarly when it comes to combining employment and education, the presence of one child aged under five reduces young Pākehā women probability by 19.4 percentage points, while for young Māori women, the corresponding figure is much lower at 10.6. I also observe how Māori seem to be *less* sensitive to the presence of other person's children in the household. In contrast, young Pākehā women living in a household that has one other person's child aged under 5 are seven percentage points *more* likely to be inactive compared to only four percentage points in the case of Māori.

This last result might apply because young Māori women are more likely to live in extended family households where care of her children is shared among various extend family members, thereby freeing up some time for her to remain or enter employment and/education. Further evidence pertaining to young Māori women's participation being *less* sensitive than Pākehā to domestic responsibilities is highlighted by the presence of a household member receiving an invalid or sickness benefit. While such household types do increase Māori inactivity by 2.7 percentage points, the corresponding figure for Pākehā is slightly higher at 4.7 percentage

points. The vast majority of other Māori household type interaction results failed to reach statistical significance.

In summary, there is little evidence from the response model to suggest that domestic responsibilities *per se* have a significantly greater effect on the employment and education choices of Māori than they do on young Pākehā women. In fact if anything, the negative effect of domestic duties on participation is *less* severe for Māori than Pākehā. The primary reason for Māori reporting lower labour and education participation rates is their much greater likelihood of living in households in which inhibiting conditions are more prevalent

We know that the domestic conditions prevailing at a young age have important influences on the nature and level of subsequent development of young people. That young Māori women appear to be far more exposed to these conditions may not be new per se, but in quantifying their relative influence on the probability of different kinds of activity choices they are making, I have highlighted the consequential importance of such conditions.

Care has to be taken in making judgements from cross sectional evidence of course because there are degrees of exposure over time which the census does not collect and there are dynamics of their subsequent effects which snap shots do not provide. These methodological issues notwithstanding I believe that the quite different domestic conditions in which young Māori and Pākehā women are being exposed has an influence on activity choice, on the propensity to gain early experience in paid work and perhaps most importantly to continue their education.

Future Research

There are also other pointers that arise from this work. The fact that young Māori women are more likely than Pākehā to take paid work when their children are very young needs further investigation, particular the extent to which this is actually driven by the availability of in-house child care. Such results together with other findings from this quantitative analysis warrant closer follow up closely attention in the field using carefully constructed research designs of otherwise matching Māori and Pākehā households. Only then when the directed field work matches the broad pictures I have painted here can we have the confidence to address the policy implications which are clearly present in these data. This research could also be replicated using the 2006 Census of Population and Dwellings.

Conclusion

The research I report here has been prompted by the continuing gap in the labour force participation rates of young Māori women. While previous researchers have identified the individual or her family nucleus as the influential entity in determining labour supply, the research suggests this scope may be too narrow when studying young woman. In particular, with a significant proportion of households now containing multiple (related) family nuclei I suggest that the *household*, rather than the family per se, may actually be the dominant labour constraint.

Two hypotheses were advanced and tested on the 178,776 unit records of young women from the New Zealand 2001 Census of Population and Dwellings. The first argued that households with higher than average domestic responsibilities might have been more widely experienced by young Māori woman, and that this would account for the fewer hours they could devote outside the home. This is the 'exposure' hypothesis. As the second thesis suggested that these responsibilities might have a stronger negative effect on young Māori women's labour market and educational participation relative to those of Pākehā.

What the results suggest is that there does *not* exist a disproportionate response by Māori to domestic responsibilities that could account for their reduced labour supply, but rather the greater presence of those factors in their households. In other words it is 'exposure' rather than 'response' which accounts for the ethnic differences. It is not that Pākehā and Māori differ noticeably in the nature of response to domestic demand for young women's labour, but simply that factors like young children (their own and others), and sick and elderly are encountered more often by young Māori women.

Although novel in a number of respects, the cross sectional study still leaves a number of issues unaddressed: the extent to which the domestic responsibilities are actually endogenous to the model for example. That is the degree to which the domestic responsibilities were themselves instrumental in generating lower levels of participation rather than the other way around and whether what I have viewed as constraints on participation were simply reactions to a reduced ability to secure paid employment and/or a lack of any wish to do so. Disintangling such subtle questions of causation normally require access to longitudinal or panel data and such options are still limited in New Zealand.

There are two broad policy implications. Firstly establishing that a range of household responsibilities are associated with a reduced chance of young women participating in education and employment offers one avenue through which we might begin to think about raising labour participation and education of all young women. However since, young Māori women are much more exposed to such conditions there are particular issues here pertinent to Māori development.

There are also implications for research. I have also shown how responsive young women are to domestic responsibilities, Māori and Pākehā alike, with little difference between the two. Among the research implications is the need to ensure that measures like this and their refined versions find their way into future models of labour force (and educational) participation.

Acknowledgements

Disclaimer

Notes

1. This paper is based on my master research thesis entitled "Participation in Employment and Education of Young Maori Women: The Effects of Domestic Constraints and Settlement Patterns". A copy of the full thesis is available through the Victoria University of Wellington's Library.

2. Labour force participation rates divide both the employed and unemployed by the total working age population, where as employment rates divide only the employed omitting the unemployed.

3. The terms 'inactivity' and 'inactive' has been used in the past, rightly or wrongly, to identify individual who are not in education or employment. However, many so called inactive individuals devote time to equally important and productive activities, such as child and elderly care. I use the term "inactivity" primarily to provide consistency with prior research, primarily in labour economics.

4. Under an arrangement with Motu Economic and Public Policy Research I was granted access to the unit record data provided by Statistics New Zealand in a secure environment designed to give effect to the confidentiality provisions of the Statistics Act 1975. All results using census data have been subject to base three random rounding in accordance with Statistics New Zealand's release policy for census data. (The 2006 data had yet to be released at the time the research project was conceived).

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Author

Dale Warburton
Assistant Policy Analyst
Ministry of Women's Affairs
P.O. Box 10049
Wellington
Dale.Warburton@mwa.govt.nz

Table 1. Variables used in modelling young women participation in employment and education

	Variable Name	Definition	Pākehā	Māori
Dependent Variables				
	actstat	1 If young women is employed and does not study	37.8%	29.1%
		2 If young women is studying and does not work	21.0%	20.4%
		3 If young women is employed and also studies	25.8%	12.4%
		4 If young women is not employed and not studying	15.4%	38.1%
Independent Variables				
Ethnicity				
	māori	If young women identified themselves as Māori	0.0%	100.0%
Age				
	age15	If young women is aged 15	11.2%	11.9%
	age16	If young women is aged 16	10.7%	11.2%
	age17	If young women is aged 17	10.2%	10.3%
	age18	If young women is aged 18	9.1%	9.4%
	age19	If young women is aged 19	9.9%	9.7%
	age20	If young women is aged 20	10.2%	9.8%
	age21	If young women is aged 21	9.9%	9.7%
	age22	If young women is aged 22	9.7%	9.6%
	age23	If young women is aged 23	9.6%	9.3%
	age24	If young women is aged 24	9.6%	9.1%
Individual characteristics				
	school_edu	If young woman has at least year 11 school qualification	79.8%	59.1%
	immigrant	If young women was born overseas	9.6%	2.8%
	iwi	If young women identifies as having an iwi affiliation	2.7%	81.7%
	mancestry	If young women identifies as being a descendent of a Māori	5.7%	94.1%
Household composition				
	kidu5own	If there is at least one child aged under 5 belonging to a young women	8.0%	22.2%
	ownkidu5	Number of children aged under 5 belonging to a young women if kidu5own=1	$X = 1.24$ $\sigma = 0.28$	$X = 1.37$ $\sigma = 0.37$
	kid516own	If there is at least one child aged between 5 and 16 belonging to a young women	1.3%	5.4%
	ownkid5_16	Number of children aged between 5 and 16 belonging to a young women if kid51own=1	$X = 1.13$ $\sigma = 0.15$	$X = 1.21$ $\sigma = 0.28$
	elderly	If there is at least one person aged over 60 living in the same household as a young women	3.6%	6.3%
	numelderly	Number of people aged over 60 living in the same household as a young women	$X = 0.04$ $\sigma = 0.23$	$X = 0.07$ $\sigma = 0.31$
	dacc	If there is at least one person living in the same household as a young women (excluding young women themselves) receiving Accident Compensation as a source of income	3.3%	3.6%
	nacc	Number of people living in the same household as a young women (excluding young women themselves) receiving Accident Compensation as a source of income if dacc=1	$X = 1.04$ $\sigma = 0.05$	$X = 1.06$ $\sigma = 0.08$
	ddpb	If there is at least one person living in the same household as a young women (excluding young women themselves) receiving domestic purposes benefit as a source of income	5.0%	17.2%
	ndpb	Number of people living in the same household as a young women (excluding young women themselves) receiving domestic purposes benefit as a source of income	$X = 1.03$ $\sigma = 0.03$	$X = 1.08$ $\sigma = 0.08$
	dinvsick	If there is at least one person living in the same household as a young women (excluding young women themselves) receiving invalids or sickness benefit as a source of income	4.2%	9.1%
	ninvsick	Number of people living in the same household as a young women (excluding young women themselves) receiving invalids or sickness benefit as a source of income if dinvsick=1	$X = 1.21$ $\sigma = 0.26$	$X = 1.24$ $\sigma = 0.25$
	dunemp	If there is at least one person living in the same household as a young women (excluding young women themselves) receiving an unemployment benefit as a source of income	15.0%	22.2%
	nunemp	Number of people living in the same household as a young women (excluding young women themselves) receiving an unemployment benefit as a source of income if dunemp=1	$X = 1.24$ $\sigma = 0.28$	$X = 1.29$ $\sigma = 0.34$
	kidu5oth	If there is at least one child aged under 5 living in the same household as a young woman, but who is not the child of that young woman	3.9%	16.4%
	othkidu5	Number of children aged under 5 living in the same household as a young woman, but who is not the child of that young woman if kidu5oth	$X = 1.21$ $\sigma = 0.24$	$X = 1.37$ $\sigma = 0.50$
	kid516oth	If there is at least one child aged between 5 and 16 living in the same household as a young woman, but who is not the child of that young woman	36.8%	52.9%

othkid5_16	Number of children aged between 5 and 16 living in the same household as a young woman, but who is not the child of that young woman if kid516oth=1	X = 1.74 σ = 0.84	X = 2.01 σ = 1.40
bth_prnt	If young women lives with both her parents but without her spouse	42.3%	32.3%
no_spse_no_prnt	If young women does not live with either parent or a spouse	25.5%	25.8%
spse_only	If young women lives with her spouse but not either of her parents	17.1%	14.4%
one_prnt	If young women lives with one of her parents but without a spouse	13.1%	23.0%
oneprnt_spse	If young women lives with one of her parents and her spouse	0.9%	2.3%
two_prnt_spse	If young women lives with both of her parents and her spouse	1.2%	2.3%
nperson	Number of people living in a young women's household	X = 3.64 σ = 1.39	X = 4.29 σ = 2.02

Socioeconomic Status

own_house	If young women's dwelling is owned by a member of that household	54.0%	37.5%
hhincome	Equivalised Household income (total households income divided by the square root of the number of household members)	X = 29,544 σ = 18,568	X = 20,493 σ = 15,641
investment	If young women receives interest, dividends, rent or other investment as a source of income	9.7%	2.1%
oth_govt_benefit	If young women receives other government benefits or income support excluding ACC, superannuation, unemployment benefit, sickness benefit, DPB, invalids benefit or student allowance	2.9%	5.3%
oth_source	If young women receives other sources of income, including support payment from non-household members, but excluding wages, salary, investments and government benefits and income support	4.3%	2.7%

Geography

main_urban	If young women lives in a main urban area	76.8%	69.9%
satellite_urban	If young women lives in a satellite urban community	2.6%	3.7%
independ_urban	If young women lives in an independent urban community	9.6%	15.2%
rural_high_influ	If young women lives in a rural area with high urban influence	2.5%	1.6%
rural_mod_influ	If young women lives in a rural area with moderate urban influence	2.7%	2.2%
rural_low_influ	If young women lives in a rural area with low urban influence	4.9%	6.2%
high_high	If young women lives in a highly rural or remote area	1.0%	1.2%
loc_ns	If young women's location is not stated	0.0%	0.1%
fem_une58	Female unemployment rate in young women's local labour market area	X = 7.71 σ = 1.72	X = 8.72 σ = 2.11
male_une58	Male unemployment rate in young women's local labour market area	X = 6.86 σ = 1.52	X = 7.62 σ = 2.08
Māoripct	Percent of young women's area unit population that identify as being Māori	X = 11.14 σ = 9.12	X = 23.49 σ = 17.15
depone	If young women lives in a deprivation one area	11.4%	2.6%
deptwo	If young women lives in a deprivation two area	11.2%	3.7%
depthree	If young women lives in a deprivation three area	11.2%	4.5%
depfour	If young women lives in a deprivation four area	10.7%	5.4%
depfive	If young women lives in a deprivation five area	10.6%	6.8%
depsix	If young women lives in a deprivation six area	10.5%	8.9%
depseven	If young women lives in a deprivation seven area	10.1%	10.6%
depeight	If young women lives in a deprivation eight area	10.1%	13.6%
depnine	If young women lives in a deprivation nine area	9.4%	18.7%
depten	If young women lives in a deprivation ten area	4.9%	25.1%

Unpaid Work Activities

housework	If young women undertakes unpaid household work, cooking, repairs, gardening etc in her household	82.9%	81.1%
volunteer	If young women does other help or volunteer work for or through an organisation, group or Marae for no pay	9.3%	14.0%
chldcare_mem	If young women looks after a child who also lives in the same household as the young women	21.5%	44.4%
chldcare_nonmem	If young women looks after a child who does not live in the same household as the young women	18.9%	28.7%
sick_mem	If young women looks after someone who is ill or has a disability, and also lives in the same household as the young women	4.3%	9.4%
sick_nonmem	If young women helps someone who is ill or has a disability and who does not live in the same household as the young women	4.8%	7.5%

Table 2. Estimated multinomial logit regression on likelihood of activity status outcome

			Employment Only	Employment and Studying	Studying Only	Inactive
Ethnicity						
	maori	M	-0.003 (0.009)	-0.056 (0.009)**	-0.000 (0.007)	0.059 (0.008)**
Age						
	age15	M	Base	Base	Base	Base
	age16	M	0.201 (0.011)**	-0.084 (0.006)**	-0.098 (0.006)**	-0.019 (0.005)**
	age17	M	0.435 (0.017)**	-0.151 (0.009)**	-0.202 (0.017)**	-0.082 (0.010)**
	age18	M	0.531 (0.015)**	-0.211 (0.020)**	-0.234 (0.016)**	-0.086 (0.015)**
	age19		0.544 (0.015)**	-0.213 (0.023)**	-0.242 (0.013)**	-0.089 (0.015)**
	age20		0.555 (0.012)**	-0.211 (0.020)**	-0.247 (0.010)**	-0.098 (0.016)**
	age21		0.581 (0.011)**	-0.224 (0.018)**	-0.253 (0.014)**	-0.104 (0.016)**
	age22		0.596 (0.014)**	-0.233 (0.016)**	-0.258 (0.017)**	-0.105 (0.016)**
	age23		0.606 (0.016)**	-0.235 (0.015)**	-0.260 (0.020)**	-0.111 (0.015)**
	age24		0.613 (0.014)**	-0.236 (0.013)**	-0.261 (0.016)**	-0.115 (0.013)**
Individual Characteristics						
	school_edu		-0.049 (0.009)**	0.180 (0.006)**	0.063 (0.007)**	-0.194 (0.005)**
	immigrant		-0.050 (0.009)**	-0.007 (0.005)	0.032 (0.003)**	0.025 (0.004)**
	iwi	M	-0.028 (0.006)**	0.008 (0.007)	0.025 (0.005)**	-0.006 (0.004)
	mancestry	M	0.029 (0.005)**	-0.017 (0.005)**	-0.018 (0.007)**	0.006 (0.005)
Geography						
	depone		-0.027 (0.008)**	0.010 (0.004)*	0.034 (0.010)**	-0.017 (0.006)**
	deptwo		-0.010 (0.008)	0.012 (0.005)*	0.012 (0.005)*	-0.013 (0.005)*
	depthree		0.005 (0.006)	0.003 (0.003)	-0.001 (0.007)	-0.007 (0.005)
	depfour		0.006 (0.004)	0.003 (0.006)	0.002 (0.008)	-0.012 (0.004)**
	depfive		Base	Base	Base	Base
	depsix		-0.007 (0.007)	-0.008 (0.003)*	0.005 (0.007)	0.009 (0.004)*
	depseven	M	-0.015 (0.006)*	-0.007 (0.005)	0.006 (0.006)	0.016 (0.004)**
	depeight	M	-0.027 (0.012)*	-0.005 (0.006)	0.015 (0.013)	0.017 (0.005)**
	depnine	M	-0.047 (0.025)	-0.028 (0.008)**	0.046 (0.025)	0.029 (0.007)**
	depten	M	-0.058 (0.015)**	-0.049 (0.008)**	0.054 (0.014)**	0.052 (0.006)**
	main_urban		Base	Base	Base	Base
	satellite_urban	M	0.071 (0.013)**	-0.046 (0.006)**	-0.041 (0.009)**	0.017 (0.006)**
	independ_urban	M	0.110 (0.013)**	-0.033 (0.008)**	-0.073 (0.011)**	-0.005 (0.007)
	rural_high_influ		0.029 (0.014)*	-0.044 (0.009)**	-0.003 (0.009)	0.019 (0.007)**
	rural_mod_influ		0.048 (0.011)**	-0.056 (0.007)**	-0.015 (0.008)	0.023 (0.008)**
	rural_low_influ	M	0.062 (0.013)**	-0.059 (0.008)**	-0.036 (0.010)**	0.033 (0.007)**

high_rural	M	0.106 (0.024)**	-0.076 (0.013)**	-0.049 (0.022)*	0.018 (0.012)
loc_ns	M	0.141 (0.060)*	-0.101 (0.079)	-0.141 (0.044)**	0.101 (0.012)**
male_une58	M	-0.011 (0.008)	0.009 (0.004)*	0.007 (0.006)	-0.005 (0.003)
fem_une58	M	-0.009 (0.010)	-0.005 (0.004)	0.006 (0.008)	0.008 (0.003)*
maoripct	M	0.003 (0.001)**	-0.002 (0.000)**	-0.002 (0.001)**	0.001 (0.000)*

Household Composition

kidu5own	M	-0.139 (0.018)**	-0.177 (0.009)**	-0.011 (0.015)	0.327 (0.009)**
ownkidu5	M	-0.037 (0.013)**	-0.018 (0.015)	0.009 (0.011)	0.047 (0.007)**
kid516own	M	-0.026 (0.018)	-0.025 (0.012)*	0.036 (0.016)*	0.015 (0.007)*
ownkid5_16	M	0.048 (0.024)*	-0.010 (0.032)	-0.014 (0.015)	-0.024 (0.014)
elderly	M	0.013 (0.013)	-0.040 (0.008)**	-0.015 (0.011)	0.042 (0.007)**
numelderly		0.020 (0.026)	-0.010 (0.021)	-0.037 (0.021)	0.028 (0.019)
dacc	M	0.020 (0.009)*	-0.001 (0.007)	-0.023 (0.009)**	0.004 (0.007)
nacc	M	-0.035 (0.035)	-0.011 (0.021)	0.035 (0.020)	0.011 (0.020)
ddpb	M	0.037 (0.008)**	-0.027 (0.004)**	-0.019 (0.006)**	0.009 (0.003)*
ndpb	M	0.011 (0.026)	-0.040 (0.022)	-0.003 (0.017)	0.032 (0.015)*
dinvsick	M	0.014 (0.008)	-0.036 (0.004)**	-0.019 (0.006)**	0.041 (0.005)**
ninvsick	M	-0.006 (0.013)	-0.023 (0.013)	0.004 (0.011)	0.026 (0.008)**
dunemp	M	-0.019 (0.005)**	-0.026 (0.004)**	0.006 (0.006)	0.039 (0.003)**
nunemp	M	0.006 (0.009)	-0.008 (0.005)	-0.007 (0.007)	0.009 (0.004)*
kidu5oth	M	0.062 (0.014)**	-0.066 (0.008)**	-0.057 (0.012)**	0.061 (0.005)**
othkidu5	M	0.024 (0.014)	-0.008 (0.011)	-0.034 (0.012)**	0.018 (0.006)**
kid516oth	M	0.042 (0.008)**	0.008 (0.003)**	-0.049 (0.010)**	-0.001 (0.005)
othkid5_16	M	0.059 (0.009)**	-0.008 (0.003)**	-0.046 (0.009)**	-0.005 (0.003)
bth_prnt		Base	Base	Base	Base
no_spse_no_prnt	M	0.027 (0.015)	-0.022 (0.008)**	0.047 (0.016)**	-0.052 (0.009)**
spse_only		0.169 (0.011)**	-0.036 (0.006)**	-0.092 (0.013)**	-0.041 (0.007)**
one_prnt	M	0.020 (0.008)*	-0.019 (0.003)**	0.001 (0.009)	-0.003 (0.004)
oneprnt_spse	M	0.162 (0.015)**	-0.077 (0.015)**	-0.095 (0.013)**	0.010 (0.010)
two_prnt_spse	M	0.151 (0.012)**	-0.096 (0.020)**	-0.106 (0.023)**	0.052 (0.015)**
nperson	M	-0.035 (0.007)**	0.010 (0.003)**	0.029 (0.008)**	-0.004 (0.003)

Unpaid Work Activities

housework		0.042 (0.004)**	0.057 (0.004)**	0.004 (0.004)	-0.103 (0.003)**
volunteer	M	-0.108 (0.005)**	0.087 (0.005)**	0.069 (0.004)**	-0.047 (0.005)**
chldcare_mem	M	-0.066	0.003	0.040	0.024

			(0.006)**	(0.003)	(0.003)**	(0.004)**
chldcare_nonmem	M	-0.005	-0.003	0.002	0.006
		(0.004)	(0.002)	(0.004)	(0.003)*
sick_mem	M	-0.019	0.008	0.017	-0.006
		(0.009)*	(0.005)	(0.005)**	(0.004)
sick_nonmem	M	-0.034	0.054	0.002	-0.022
		(0.006)**	(0.004)**	(0.005)	(0.005)**

Socioeconomic Status

own_house		-0.002	0.028	0.001	-0.027
		(0.005)	(0.004)**	(0.004)	(0.003)**
hhincome		0.061	0.005	-0.030	-0.035
		(0.003)**	(0.001)**	(0.004)**	(0.002)**
investment		-0.033	0.114	0.021	-0.101
		(0.008)**	(0.006)**	(0.011)	(0.009)**
oth_govt_benefit	M	-0.073	-0.038	0.054	0.057
		(0.007)**	(0.008)**	(0.005)**	(0.005)**
oth_source		-0.157	0.068	0.138	-0.049
		(0.009)**	(0.005)**	(0.008)**	(0.007)**
Observations		178776	178776	178776	178776

Robust standard errors in parentheses

* significant at 5%

** significant at 1%

Table 3. Estimated multinomial logit regression with Maori interactions on likelihood of activity status outcome

		1)Employment Only		2) Employment And Studying		3) Studying Only		4) Inactive	
		Standard	Maori Interaction	Standard	Maori Interaction	Standard	Maori Interaction	Standard	Maori Interaction
Age									
	age15	Base	Base	Base	Base	Base	Base	Base	Base
	age16	0.203	-0.016	-0.092	0.033	-0.105	0.017	-0.007	-0.034
		(0.012)**	(0.019)	(0.007)**	(0.013)*	(0.006)**	(0.010)	(0.005)	(0.008)**
	age17	0.454	-0.094	-0.160	0.030	-0.209	0.079	-0.086	-0.015
		(0.016)**	(0.023)**	(0.009)**	(0.011)**	(0.015)**	(0.017)**	(0.012)**	(0.012)
	age18	0.550	-0.131	-0.216	-0.009	-0.241	0.154	-0.092	-0.014
		(0.013)**	(0.017)**	(0.020)**	(0.015)	(0.014)**	(0.017)**	(0.016)**	(0.012)
	age19	0.563	-0.129	-0.218	0.009	-0.248	0.122	-0.097	-0.002
		(0.014)**	(0.021)**	(0.024)**	(0.012)	(0.010)**	(0.015)**	(0.017)**	(0.010)
	age20	0.575	-0.125	-0.216	-0.002	-0.252	0.113	-0.107	0.013
		(0.012)**	(0.022)**	(0.022)**	(0.017)	(0.008)**	(0.015)**	(0.017)**	(0.012)
	age21	0.599	-0.153	-0.228	0.014	-0.259	0.154	-0.111	-0.015
		(0.009)**	(0.024)**	(0.018)**	(0.019)	(0.012)**	(0.019)**	(0.017)**	(0.011)
	age22	0.610	-0.161	-0.238	0.064	-0.263	0.140	-0.109	-0.044
		(0.013)**	(0.019)**	(0.016)**	(0.013)**	(0.013)**	(0.017)**	(0.017)**	(0.015)**
	age23	0.622	-0.190	-0.240	0.061	-0.266	0.180	-0.116	-0.051
		(0.013)**	(0.019)**	(0.014)**	(0.015)**	(0.015)**	(0.019)**	(0.015)**	(0.011)**
	age24	0.628	-0.183	-0.240	0.045	-0.267	0.186	-0.121	-0.047
		(0.013)**	(0.023)**	(0.013)**	(0.019)*	(0.012)**	(0.015)**	(0.013)**	(0.013)**
Individual Characteristics									
	school_edu	-0.053	0.034	0.187	-0.036	0.078	-0.044	-0.212	0.046
		(0.010)**	(0.008)**	(0.007)**	(0.009)**	(0.007)**	(0.007)**	(0.004)**	(0.005)**
	immigrant	-0.055	0.062	-0.008	-0.008	0.031	-0.024	0.032	-0.030
		(0.009)**	(0.014)**	(0.004)	(0.013)	(0.003)**	(0.013)	(0.004)**	(0.011)**
	iwi	0.001	-0.036	0.001	0.014	0.003	0.026	-0.005	-0.004
		(0.007)	(0.013)**	(0.009)	(0.012)	(0.010)	(0.014)	(0.008)	(0.009)
	mancestry	0.028	-0.085	-0.028	0.083	-0.026	0.068	0.027	-0.065
		(0.006)**	(0.016)**	(0.008)**	(0.019)**	(0.008)**	(0.015)**	(0.006)**	(0.011)**
Geography									
	depone	-0.023	0.001	0.007	0.039	0.024	-0.009	-0.008	-0.031
		(0.007)**	(0.019)	(0.006)	(0.019)*	(0.010)*	(0.014)	(0.007)	(0.013)*

deptwo	-0.010 (0.009)	0.014 (0.020)	0.008 (0.006)	0.035 (0.021)	0.005 (0.006)	-0.008 (0.018)	-0.004 (0.006)	-0.041 (0.012)**
depthree	0.004 (0.006)	0.020 (0.012)	0.003 (0.003)	0.003 (0.015)	-0.003 (0.008)	-0.014 (0.015)	-0.003 (0.006)	-0.010 (0.014)
depfour	0.004 (0.004)	0.015 (0.014)	0.001 (0.008)	0.018 (0.023)	0.003 (0.009)	-0.018 (0.014)	-0.007 (0.005)	-0.015 (0.012)
depfive	Base	Base	Base	Base	Base	Base	Base	Base
depsix	-0.012 (0.009)	0.024 (0.014)	-0.008 (0.004)*	0.001 (0.015)	0.011 (0.007)	-0.021 (0.012)	0.009 (0.005)	-0.004 (0.012)
depseven	-0.024 (0.007)**	0.037 (0.017)*	-0.006 (0.006)	-0.006 (0.018)	0.015 (0.006)*	-0.025 (0.012)*	0.016 (0.005)**	-0.007 (0.013)
depeight	-0.033 (0.015)*	0.029 (0.019)	-0.002 (0.005)	-0.013 (0.015)	0.023 (0.015)	-0.023 (0.018)	0.012 (0.006)*	0.007 (0.012)
depnine	-0.063 (0.029)*	0.070 (0.026)**	-0.020 (0.008)*	-0.036 (0.014)**	0.060 (0.027)*	-0.041 (0.022)	0.023 (0.006)**	0.006 (0.008)
depten	-0.076 (0.015)**	0.077 (0.018)**	-0.037 (0.008)**	-0.034 (0.015)*	0.066 (0.013)**	-0.044 (0.012)**	0.047 (0.006)**	0.001 (0.010)
main_urban	Base	Base	Base	Base	Base	Base	Base	Base
satellite_urban	0.075 (0.013)**	-0.024 (0.025)	-0.049 (0.006)**	0.015 (0.015)	-0.043 (0.008)**	0.016 (0.018)	0.017 (0.007)*	-0.007 (0.009)
independ_urban	0.116 (0.015)**	-0.031 (0.015)*	-0.041 (0.009)**	0.035 (0.012)**	-0.081 (0.011)**	0.023 (0.012)	0.005 (0.008)	-0.027 (0.008)**
rural_high_influ	0.036 (0.013)**	-0.042 (0.036)	-0.047 (0.009)**	0.025 (0.027)	-0.008 (0.010)	0.022 (0.031)	0.019 (0.007)**	-0.005 (0.014)
rural_mod_influ	0.051 (0.012)**	0.008 (0.025)	-0.054 (0.008)**	-0.022 (0.021)	-0.019 (0.008)*	0.008 (0.018)	0.022 (0.008)**	0.005 (0.014)
rural_low_influ	0.064 (0.015)**	-0.007 (0.017)	-0.063 (0.010)**	0.023 (0.016)	-0.038 (0.012)**	-0.002 (0.015)	0.037 (0.009)**	-0.014 (0.011)
high_rural	0.125 (0.027)**	-0.049 (0.034)	-0.079 (0.012)**	-0.003 (0.032)	-0.069 (0.025)**	0.068 (0.026)**	0.024 (0.013)	-0.016 (0.023)
loc_ns	-0.103 (0.109)	-0.372 (0.166)*	0.000 (0.064)	-0.230 (0.212)	-0.215 (0.034)**	0.786 (0.000)	0.317 (0.036)**	-0.184 (0.039)**
male_une58	-0.010 (0.009)	0.001 (0.007)	0.008 (0.005)	-0.000 (0.005)	0.005 (0.007)	0.001 (0.006)	-0.003 (0.004)	-0.003 (0.004)
fem_une58	-0.011 (0.010)	0.003 (0.005)	-0.004 (0.004)	-0.001 (0.005)	0.010 (0.010)	-0.006 (0.007)	0.005 (0.004)	0.004 (0.004)
maoripct	0.005 (0.001)**	-0.004 (0.001)**	-0.002 (0.000)**	0.000 (0.000)	-0.004 (0.001)**	0.004 (0.001)**	0.001 (0.000)*	-0.000 (0.000)

Household Composition

kidu5own	-0.165 (0.021)**	-0.006 (0.020)	-0.194 (0.009)**	0.088 (0.025)**	-0.031 (0.015)*	0.005 (0.014)	0.390 (0.010)**	-0.087 (0.009)**
ownkidu5	-0.040 (0.016)*	-0.003 (0.022)	-0.029 (0.018)	0.015 (0.029)	0.007 (0.018)	0.009 (0.018)	0.062 (0.010)**	-0.021 (0.011)
kid516own	-0.027 (0.024)	-0.010 (0.022)	-0.059 (0.017)**	0.070 (0.025)**	0.044 (0.024)	-0.029 (0.025)	0.041 (0.011)**	-0.032 (0.015)*
ownkid5_16	0.037 (0.045)	-0.002 (0.048)	0.010 (0.038)	-0.033 (0.044)	-0.023 (0.032)	0.035 (0.040)	-0.024 (0.035)	-0.000 (0.037)
elderly	0.022 (0.015)	-0.022 (0.018)	-0.032 (0.011)**	-0.042 (0.028)	-0.033 (0.012)**	0.070 (0.015)**	0.042 (0.007)**	-0.006 (0.011)
numelderly	0.013 (0.030)	-0.003 (0.056)	-0.015 (0.023)	0.036 (0.054)	-0.024 (0.022)	-0.020 (0.033)	0.026 (0.026)	-0.014 (0.035)
dacc	0.028 (0.011)*	-0.039 (0.019)*	-0.003 (0.007)	0.006 (0.012)	-0.031 (0.009)**	0.039 (0.014)**	0.006 (0.008)	-0.007 (0.013)
nacc	-0.040 (0.041)	0.004 (0.063)	-0.015 (0.027)	0.025 (0.053)	0.021 (0.030)	0.026 (0.047)	0.035 (0.027)	-0.055 (0.047)
ddpb	0.047 (0.009)**	-0.033 (0.015)*	-0.027 (0.006)**	0.005 (0.011)	-0.030 (0.006)**	0.035 (0.010)**	0.009 (0.005)	-0.008 (0.007)
ndpb	0.058 (0.048)	-0.073 (0.054)	-0.057 (0.040)	0.049 (0.050)	-0.042 (0.035)	0.045 (0.041)	0.041 (0.030)	-0.021 (0.031)
dinvsick	0.006 (0.012)	0.007 (0.018)	-0.038 (0.006)**	0.017 (0.015)	-0.016 (0.008)*	-0.004 (0.010)	0.047 (0.005)**	-0.020 (0.007)**
ninvsick	0.007 (0.017)	-0.055 (0.025)*	-0.041 (0.015)**	0.066 (0.021)**	0.004 (0.015)	0.006 (0.019)	0.030 (0.010)**	-0.017 (0.013)
dunemp	-0.018 (0.005)**	-0.010 (0.010)	-0.026 (0.005)**	-0.003 (0.009)	0.000 (0.006)	0.022 (0.006)**	0.043 (0.005)**	-0.009 (0.007)
nunemp	0.007 (0.010)	-0.010 (0.014)	-0.008 (0.006)	0.008 (0.013)	-0.011 (0.008)	0.015 (0.010)	0.012 (0.006)*	-0.013 (0.007)
kidu5oth	0.062 (0.014)**	-0.036 (0.015)*	-0.070 (0.009)**	0.034 (0.013)**	-0.062 (0.013)**	0.033 (0.016)*	0.071 (0.006)**	-0.031 (0.010)**

othkidu5	0.044	-0.049	-0.018	0.037	-0.048	0.032	0.021	-0.020
	(0.022)*	(0.026)	(0.013)	(0.020)	(0.016)**	(0.017)	(0.010)*	(0.013)
kid516oth	0.048	-0.021	0.011	-0.005	-0.052	0.022	-0.006	0.004
	(0.008)**	(0.013)	(0.003)**	(0.011)	(0.008)**	(0.007)**	(0.005)	(0.008)
othkid5_16	0.069	-0.047	-0.009	0.018	-0.050	0.031	-0.009	-0.002
	(0.009)**	(0.007)**	(0.003)**	(0.006)**	(0.008)**	(0.005)**	(0.004)*	(0.004)
bth_prnt	Base	Base	Base	Base	Base	Base	Base	Base
no_spse_no_prnt	0.038	-0.033	-0.026	0.013	0.049	-0.019	-0.062	0.040
	(0.016)*	(0.017)*	(0.008)**	(0.012)	(0.017)**	(0.013)	(0.008)**	(0.009)**
spse_only	0.165	0.018	-0.038	0.024	-0.083	-0.031	-0.043	-0.010
	(0.011)**	(0.012)	(0.006)**	(0.013)	(0.014)**	(0.013)*	(0.008)**	(0.010)
one_prnt	0.025	-0.016	-0.017	-0.003	-0.001	0.007	-0.008	0.012
	(0.009)**	(0.009)	(0.004)**	(0.007)	(0.010)	(0.009)	(0.005)	(0.006)
oneprnt_spse	0.166	-0.019	-0.078	0.010	-0.098	0.010	0.011	-0.002
	(0.016)**	(0.020)	(0.019)**	(0.029)	(0.019)**	(0.035)	(0.010)	(0.018)
two_prnt_spse	0.157	-0.070	-0.105	0.057	-0.116	0.048	0.063	-0.035
	(0.013)**	(0.019)**	(0.015)**	(0.026)*	(0.024)**	(0.038)	(0.018)**	(0.013)**
nperson	-0.038	0.026	0.013	-0.021	0.032	-0.021	-0.008	0.015
	(0.007)**	(0.006)**	(0.002)**	(0.005)**	(0.007)**	(0.004)**	(0.004)*	(0.004)**
Unpaid Work Activities								
housework	0.052	-0.054	0.054	0.029	-0.001	0.018	-0.105	0.007
	(0.005)**	(0.011)**	(0.005)**	(0.011)**	(0.004)	(0.006)**	(0.004)**	(0.006)
volunteer	-0.104	-0.009	0.083	0.005	0.053	0.029	-0.032	-0.025
	(0.005)**	(0.011)	(0.006)**	(0.010)	(0.004)**	(0.008)**	(0.005)**	(0.007)**
chldcare_mem	-0.055	-0.018	0.002	0.004	0.036	0.008	0.017	0.006
	(0.006)**	(0.009)	(0.003)	(0.008)	(0.004)**	(0.010)	(0.006)**	(0.006)
chldcare_nonmem	-0.001	-0.011	-0.003	-0.005	-0.006	0.025	0.010	-0.009
	(0.004)	(0.008)	(0.002)	(0.008)	(0.004)	(0.005)**	(0.003)**	(0.005)
sick_mem	-0.007	-0.031	0.002	0.026	0.008	0.011	-0.002	-0.006
	(0.009)	(0.014)*	(0.006)	(0.010)**	(0.007)	(0.009)	(0.005)	(0.008)
sick_nonmem	-0.030	-0.006	0.052	0.001	-0.004	0.011	-0.018	-0.006
	(0.006)**	(0.011)	(0.005)**	(0.012)	(0.007)	(0.012)	(0.006)**	(0.010)
Socioeconomic Status								
own_house	0.004	-0.023	0.024	0.018	-0.000	0.005	-0.027	-0.000
	(0.006)	(0.010)*	(0.005)**	(0.008)*	(0.005)	(0.007)	(0.004)**	(0.006)
hhincome	0.061	-0.007	0.003	0.009	-0.032	0.008	-0.032	-0.010
	(0.003)**	(0.004)	(0.001)**	(0.003)**	(0.004)**	(0.002)**	(0.002)**	(0.002)**
investment	-0.038	0.046	0.112	0.023	0.022	-0.036	-0.096	-0.033
	(0.007)**	(0.016)**	(0.006)**	(0.012)*	(0.010)*	(0.018)*	(0.009)**	(0.018)
oth_govt_benefit	-0.076	0.012	-0.034	-0.018	0.053	0.008	0.057	-0.003
	(0.007)**	(0.014)	(0.008)**	(0.014)	(0.008)**	(0.013)	(0.006)**	(0.009)
oth_source	-0.165	0.058	0.061	0.023	0.149	-0.056	-0.045	-0.024
	(0.009)**	(0.021)**	(0.006)**	(0.017)	(0.007)**	(0.010)**	(0.008)**	(0.014)
Observations	178776	178776	178776	178776	178776	178776	178776	178776

Robust standard errors in parentheses
* significant at 5%
** significant at 1%