

Looking Inside the Unemployment Spell

Alfred Michael Dockery

(Curtin Business School, Curtin University of Technology)

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Address for correspondence
Dr A. M. Dockery, Curtin Business School
GPO Box U1987, Perth WA 6845
dockerym@cbs.curtin.edu.au

Abstract

There is a vast empirical literature investigating the incidence, frequency and duration of unemployment spells and the transitions between labour market states conditional on macro-economic, individual and policy variables. These typically treat unemployed persons or unemployment spells as discrete, homogenous units of analysis. Few datasets in Australia have allowed researchers to look inside the unemployment spell. This paper analyses the experience of unemployed Australians with respect to their perceived barriers to employment, the job search methods used to overcome these barriers, social support and financial circumstances and other measures of their “wellbeing”. Differences in unemployment experience and major parameters of the job search model according to duration of the spell are presented. The paper also investigates the role of social support and “social network capital” in shaping the unemployment experience by drawing on the neighbourhood and household based variables available in HILDA. While the unemployed are clearly worse off than other Australians on a range of measures, no pronounced deterioration in their circumstances with time in unemployment is observed. A decline in job search intensity is identified as a potential contributor to negative duration dependence in unemployment.

1. Introduction and background

If a government committee were to present a labour economist with a brief to document the nature of unemployment in Australia, the economist could readily compile a voluminous set of statistical tables describing the incidence and duration of unemployment conditional upon individual, geographical, socioeconomic and other dimensions. Upon considering the report, the committee would be pleased to find that we know a great deal about unemployment. But were the committee then to press the economist as to what policies are implied by the statistics, more than likely it would then find the available evidence to be sadly wanting. While we have a comprehensive descriptive picture of unemployment, we have a far more limited understanding of the inner workings and processes that generate that picture.

Many characteristics are associated with a higher incidence of unemployment in Australia, as demonstrated recently by Le and Miller (1999), and thus these characteristics are often assumed by association to contribute to unemployment. There is evidence that the state of unemployment displays negative duration dependence (Stromback and Dockery 2000). There are several intuitively appealing explanations for this, including declining motivation or job search intensity, depreciation of work skills and human capital on the part of the jobseeker, and the use of unemployment duration as a screening tool on the part of employers. However, there is very little empirical evidence as to the actual causes of duration dependence and their relative importance. Further, the experience with major policy innovations such as *Working Nation* and the Job Network have thus far failed to garner clear evidence on what measures do and do not work for the unemployed and the conditions under which different policy remedies should be applied (see Dockery and Webster 2002, Martin 1998).

Search theory has held centre stage in neo-classical economic theory when it comes to scrutinising the processes that generate the incidence and nature of unemployment spells. Typically, however, the parameters of search theory are imputed from the outcomes in terms of incidence and duration — instances in which the theory is validated by successful prediction of outcomes from empirical measurement of the parameters seem rare. Largely this is because many of the parameters of the job search model are inherently difficult to observe and measure. It seems, to me at least, that the analysis of job search and the matching process still holds much promise for improving our understanding of unemployment and for improving policies to address unemployment at the micro level.

Towards this end, this paper uses data recently made available through the first wave of the Household Income and Labour Dynamics in Australia Survey (HILDA) to more fully explore the unemployment experience and how this relates to parameters of the search model, particularly with regard to the methods of job search used and how behaviour changes over the duration of an unemployment spell. The analysis is largely exploratory at this stage and highlights a number of promising research avenues to pursue in more detail and with more rigorous methodologies as longitudinal data becomes available. One important limitation must be borne in mind. As the data is currently cross-sectional, the distribution of variables conditional on the individuals' duration of unemployment is used to suggest that those characteristics change over time. In each case, it may be that the variable remains constant over time

for each individual, for example, the intensity of job search, but that those with lower intensities simply have longer average durations. It will not be possible to distinguish between the two explanations until observations are available for the same individuals at different durations.

The next section provides a very basic outline of the neo-classical job search model. A snapshot of the sample of unemployed persons identified by HILDA is given in Section 3, along with comparisons between the unemployed and those in the different labour market states on a range of measures including wellbeing, financial stress and access to social support. Section 4 concentrates on differences within the sample of unemployed with respect to measures that the economic search literature and the psychological literature suggest may be important in shaping the unemployment experience or that may contribute to duration dependence. The paper concludes with some tentative conclusions (and some interesting non-conclusions!), policy implications and potential avenues for further research.

2. The basic Job Search model – a review

What happens to people when they become unemployed? There are many dimensions to such a question. From a labour market economist's perspective, we think in terms of what actions they may take in order to improve their labour market circumstances and the incentives they face in choosing between alternative courses of action. Psychologists will wonder how the event of becoming unemployed and the time in unemployment impacts upon the individual's state of mind and the relationships within their family and social circles. Welfare organisations concern themselves with the incidence of poverty among families touched by unemployment and its implication for social equality. All these things will be closely intertwined.

The basic formulation of the search model assumes that the jobseeker aims to maximise the current value of expected lifetime earnings. At a given time there is a stock of unfilled vacancies which carry a wage-offer distribution of $F(w)$ which is usually assumed to be known to the jobseeker. Offers arrive at a given rate, drawn independently from the wage-offer distribution. The jobseeker receives a stream of unearned income from each period of job search, and this is often comprised wholly or mainly from unemployment benefits. There may also be a cost of search in each period, as well as non-monetary utility attached to non-work time. A worker will accept any given wage-offer w_0 if the future wage stream of w_0 over the remainder of their working life exceeds the expected value of continued job search. The expected value of continued job search can be seen to comprise of the sum of the expected values of two possible outcomes, weighted by their probability:

1. the expected value of the stream of unearned income and utility from not working should they not receive an acceptable job offer, plus
2. the expected value of the stream of future earnings should they receive an acceptable job offer.

In this sense the jobseeker is seen to sequentially evaluate each new wage offer as it arrives. Equivalently, the jobseeker's strategy can be seen as one in which she sets in her mind an offer-wage at which the future stream of earnings exactly equates to the

expected returns from further search. The worker will then accept any wage offers above this “reservation wage” and reject any wage offers below her reservation wage in preference for continued search.

Though a number of simplifying and unrealistic assumptions underlie the model, what is important is whether or not the model is useful in analysing and explaining behaviour (Kiefer and Neumann 1989: 4). The simple model generates predictions that fit well with the most important empirical realities, notably that the probability of a person receiving an offer above their reservation wage and thus exiting unemployment is increasing in frequency of offers; decreasing in the “replacement rate” — the ratio of unearned income (benefits) to wages — and decreasing in the value of leisure or non-working time. The model can and has been extended in many ways to relax the simplifying assumptions, and there is an extensive literature building upon on the basic search model that also boasts many useful empirical applications.

However, it is also true that much of the non-random nature of unemployment duration remains unexplained. Below we investigate potential avenues to exploit the data available through HILDA to bridge some of that gap in our knowledge through the relaxation or even departure from some of the assumptions. While the search model assumes a constant offer arrival rate it says very little about the actual search strategy adopted by jobseekers. What steps are taken to find work and what factors impact upon the choice between alternative search strategies? In turn, do these strategies affect the chance of finding work after controlling for other characteristics? To assess the search strategies adopted by the unemployed, I also move away from the idea of the utility maximising individual with perfect knowledge of the offer-arrival rate and the associated wage distribution. How the unemployed behave, including with respect to their job search behaviour, will be affected by their emotional state, a range of factors relating to their socio-economic environment and their perceptions of that environment and their place within it. The literature on the psychological impacts of unemployment provides a useful background to this investigation.

One empirical reality which does not fit with the basic job search model (although it can be readily incorporated through a variety of mechanisms) is that of negative duration dependence. Though it is a difficult to prove empirically, the weight of evidence does support the presence of negative duration dependency in unemployment (for an Australian example, see Stromback and Dockery 2000). For negative duration dependency to be incorporated into the search model, at least one parameter determining the exit rate must be duration dependent. Indeed it may be the job seeker’s search strategy that changes in response to the psychological impacts of time in unemployment or the resources available to the job-seeker to finance various search activities. Other candidates include the offer rate, either because employers use unemployment duration as a screening signal or because human capital (and productivity) genuinely declines during spells of unemployment. Their reservation wage may not be revised downwards adequately to compensate for this due to imperfect information, or may be constrained in doing so due to increasing replacement rates or minimum wages and so on.

3. HILDA and Unemployment – a descriptive overview

This exploration leads me to inspect the distributions and joint distributions of a range of variables for the sample of unemployed persons that are available through HILDA, and how these vary with the duration of the spell. To provide a background context to the situation faced by unemployed Australians, it seems useful to first present comparisons of these variables between the unemployed and persons in the other major labour market states (employed and not-in-the-labour force). HILDA collected information relating to each household in the sample and from each individual within those households aged 15 years and over through a personal interview and self-completion questionnaire. The confidentialised unit record file from the first wave of HILDA contained data for 7,682 respondent households and 13,969 individuals aged over 15. Details on the survey and sampling frame can be found in the HILDA Discussion Paper and HILDA Technical Paper series published jointly by the Melbourne Institute and the Department of Family and Community Services.

Table 1 summarises the labour force status of the individuals. In total, 65 percent of individuals were participating in the labour force at the time of the interviews, leaving 35 percent who were not in the labour force (NILF). Of those participating, 6.7 percent were unemployed. The fieldwork for the HILDA survey was carried between August of 2001 and January of 2002. The trend estimates from the Australian Bureau of Statistic's Labour Force Survey over this period show an average participation rate of 63.7 percent (72.4 percent for males and 55.3 percent for females) and an average unemployment rate of 6.8 percent (7.0 percent for males and 6.5 percent for females)¹. Hence, even without applying the weights provided in HILDA, there is a strong concordance with the official statistics.

Table 1: labour force status by gender, percent.

	Female	Male	Persons
Employed FT	27.4	57.2	41.5
Employed PT	<u>26.9</u>	<u>11.4</u>	<u>19.5</u>
Employed Total	54.2	68.6	61.0
Unemployed LFFT	1.8	4.3	3.0
Unemployed LFPT	<u>1.7</u>	<u>1.0</u>	<u>1.4</u>
Unemployed Total	3.5	5.3	4.4
NILF - marginally attached	10.3	5.1	7.8
NILF - not marginally attached	<u>32.0</u>	<u>21.0</u>	<u>26.8</u>
NILF Total	42.2	26.1	34.6
Total	100.0	100.0	100.0
Unemployment Rate	6.1	7.2	6.7
Participation Rate	57.8	73.9	65.4
N (individuals)	7347	6622	13969

¹ Based upon simple averages of the August 2001 - January 2002 monthly trend estimates from the ABS Catalogue 6202.0.

A total of 609 persons are recorded as being unemployed at the time of their interview. While this is not a particularly large number of observations when it comes to undertaking multivariate empirical work, it should be remembered that the state of unemployment is quite a fluid one. The proportion of persons unemployed at any one time may not be so great, but the cumulative number observed to be in unemployment at some time will grow rapidly as further waves of data become available. Of those unemployed at the time of the first-wave survey, 11.5 percent had never been in paid work. Table 2 shows the distribution of the elapsed time spent in unemployment for the current spells. Almost one-quarter had been unemployed for a year or more – the standard definition of long-term unemployment - and 15 percent had been unemployed for two years or longer.

Table 2: Duration of unemployment for those currently unemployed

	Frequency	Percent	Cumulative percent
Less than 4 weeks	107	18.3	18.3
4 weeks but less than 13 weeks	157	26.8	45.1
13 weeks but less than 52 weeks	179	30.5	75.6
1 year but less than 2 years	56	9.6	85.2
2 years or more	87	14.8	100.0
Total	586	100.0	

Notes: missing=23 (non-response or could not be ascertained with certainty)

Table 3 presents the barriers most commonly nominated by the unemployed as the “main difficulty” they had in getting a job. Twelve percent indicated that they would have no difficulty. No one barrier is prominent, with even the most commonly cited difficulty — not having the required education, training or skills — being nominated by only 12.5 percent of the unemployed. Amalgamating the options into broader categories, 37.3 percent of individuals cited barriers relating to how their own “human capital” attributes impact upon their employability, such as a lack of education, skills or experience, their age or being overqualified. Factors relating to external labour market demand and supply conditions — no jobs at all, no jobs in line of work or too many applicants — were nominated by 29.6 percent of respondents. Just under 20 percent cited personal circumstances such as transport problems, childcare or other family responsibilities. I have also included “own ill health or disability” here (6.4 percent), which could arguably be placed instead into the human capital category.

Table 3: Main difficulty in getting a job – unemployed persons

Description	Percent
Did not have required education, training or skills	12.5
No difficulty	12.0
Employers thought you were too old/young	11.3
There were just no jobs at all	11.3
Not have enough work experience	10.5
Too many applicants for the available jobs	9.9
No jobs in line of work	8.4
Had transport problems/it was too far to travel	7.2
Own ill health or disability	6.4
Others	10.5

A common concern is that many of the most disadvantaged jobseekers and entrenched unemployed simply give up looking for work and, because they no longer meet the criteria of having actively sought work, are no longer counted among unemployed. These persons also drop off the radar of those researchers and policy makers working with the conventional definition of unemployment. Within the group of persons who are not in the labour force, I further distinguish those who I will term “discouraged jobseekers”. Discouraged jobseekers as people who are not in the labour force but who indicated that they wanted to work² and one of the following was given as being their main reason for not looking for work in the previous four weeks:

- Too young/too old;
- Lacks necessary experience, training or qualifications;
- Difficulties with language, ethnic background, reading or writing;
- No jobs available (at all, in line of work, locality, etc).

There are 126 such discouraged jobseekers in the sample.

Mental and physical health and wellbeing

Previous studies have shown time in unemployment to be associated with deteriorating mental and physical health, and that this may in turn reduce the chance of obtaining a job. See Stewart (2001) and Waters and Moore (2002) for recent contributions. Flatau, Galea and Petridis (2000) use Australian data from the 1995 National Health Survey and the 1997 National Survey of Mental Health and Wellbeing of Adults to find that the unemployed do experience worse mental health and wellbeing than those in full-time employment, and this includes an increased prevalence of certain mental disorders. HILDA provides a range of variables relating to mental and physical “wellbeing”, including questions common to the instruments used in the 1997 National Health Survey. The HILDA person questionnaire asked individuals to indicate how satisfied they are with a range of aspects of their life using a scale ranging from 0 (totally dissatisfied) to 10 (totally satisfied). The mean responses by labour force status are presented in Table 4, and the results are much as one might expect. On average unemployed persons indicated lower levels of satisfaction when compared to employed persons on all aspects listed with the exception of “the amount of free time you have”. Dissatisfaction amongst the unemployed is most evident with respect to their employment opportunities and financial situation. The means for the unemployed are also lower than for those not participating in the labour force on all aspects with the exception of “your health”. Discouraged workers are similarly dissatisfied with employment opportunities and their financial situations, but actually rank quite highly, along with others not in the labour force, with respect to the home in which they live, the neighbourhood in which they live and the amount of free time they have. Note that discouraged workers, as defined here, are mutually exclusive of those not in the labour force, rather than a subset.

When it comes to overall satisfaction with one’s life, the employed, discouraged workers and those not-in-the-labour force all have similar mean ratings of 7.9 or 8.0.

² This includes those who indicated in the survey that they wanted to work or “maybe” wanted to work.

The unemployed, however, display markedly lower levels of satisfaction, with a mean rating of 7.3.³ For the unemployed it is also evident that it is the levels of satisfaction with their employment opportunities and financial situations that deteriorate most markedly with duration of unemployment.

Table 4: Level of satisfaction with various life aspects: means by labour force status (0=totally dissatisfied, 10=totally satisfied).

	Employed	Unemployed	Discouraged Jobseekers	Not In Labour Force
The home in which you live	7.9	7.5	8.3	8.4
Your employment opportunities	7.3	4.2	3.0	5.2
Your financial situation	6.3	3.8	5.0	6.1
How safe you feel	8.0	7.7	7.8	7.8
Feeling part of your local community	6.7	6.0	6.7	6.8
Your health	7.7	7.5	7.5	6.8
The neighbourhood in which you live	8.0	7.4	8.2	8.1
The amount of free time you have	6.0	7.1	8.1	7.7
How satisfied are you with your life	7.9	7.3	7.9	8.1

Notes: Number of observations varies from 8331-8525 for employed; 602-609 unemployed, 100-126 discouraged jobseekers and 2280-4702 for those otherwise not in the labour force according to frequency of non-applicable/non-response.

A range of other indicators of wellbeing is available. For simplicity, each indicator discussed here is recoded to ensure a higher number represents a more favourable situation. On a five-point scale ranging from poor current health to excellent current health, the mean response for unemployed persons was 3.63 – somewhere between good and very good. This is slightly lower than the mean for employed persons (3.77), but the difference is highly significant in statistical terms. Discouraged jobseekers (3.45) and other persons not in the labour force (3.13) reported lower current health status.⁴ Close on 40 percent of discouraged jobseekers and others NILF reported having a long-term health condition or disability, compared to 22 percent and 14 percent for unemployed and employed persons, respectively.

In a range of questions designed to indicate aspects of mental health, individuals were asked to indicate how often they felt a certain way in the past four weeks, such as “down in the dumps”, using a scale ranging from 1 (all of the time) to 6 (none of the time). Again, for ease of interpretation, the scales have been recoded where necessary to ensure a higher number indicates a more favourable status. The means by labour force status are reported in Table 5. Relative to employed persons, the means imply that the unemployed fare worse on all measures with the exception that those in work more often report feeling tired. The differences in the responses between the employed and unemployed are statistically significant for each measure with the exception of those relating to having a lot of energy and feeling worn out. It seems those in work may get weary, but are otherwise emotionally happier than the unemployed.

³ All differences between the means for the employed and unemployed are highly significant according to the standard t-tests.

⁴ For the overall measure of health status we concentrate on that derived from the person questionnaire rather than the self-completion questionnaire due to the lower incidence of missing data. Just over 900 self-completion questionnaires were either not returned or could not be matched to the individual.

Interestingly, those NILF return the lowest means for the four measures relating to vitality: feeling full of life, having a lot of energy, feeling worn out and feeling tired. This may well be related to the proportion engaged in child-care. Discouraged workers, on the other hand, appear to fare better on most measures than the unemployed, though the only differences which are statistically significant are with respect to how often individuals reported feeling “down in the dumps”, “calm and peaceful” and feeling “down”.

Table 5: Indicators of wellbeing/mental health by labour force status; four weeks prior to the survey: means responses from scales of 1 to 6^a.

Variable	Employed	Unemployed	Discouraged Jobseekers	Not In Labour Force
Do you feel full of life?	4.21	4.07	4.11	3.79
Have you been a nervous person?	5.00	4.64	4.74	4.79
Have you felt so down in the dumps that nothing could cheer you up?	5.37	4.89	5.32	5.13
Have you felt calm and peaceful?	4.03	3.82	4.09	3.97
Did you have a lot of energy	4.03	3.98	3.94	3.55
Have you felt down?	4.85	4.42	4.66	4.68
Did you feel worn out?	4.30	4.35	4.44	4.24
Have you been a happy person?	4.51	4.34	4.39	4.43
Did you feel tired?	3.94	4.04	4.04	3.84

Notes: a. Original scales range from 1 (all of the time), 2 (most of the time), 3 (a good bit of the time), 4 (some of the time), 5 (a little of the time) to 6 (none of the time). Each has been recoded such that a higher number is a more positive response. Number of observations varies from 7928-7948 for employed; 542-550 unemployed, 117-120 discouraged jobseekers and 4255-4300 NILF.

Financial Stress

As would be expected, unemployed persons reported living in less prosperous families and greater incidences of personal financial difficulties. We know that persons from lower socio-economic backgrounds are already more likely to experience unemployment, but it is also likely that unemployment will compound or entrench poverty. In respect to their family’s current needs and financial responsibilities, 70 percent of employed persons indicated that their family was reasonably comfortable, very comfortable or prosperous. This compares to 44 percent for the unemployed. The greater financial stress experienced by the unemployed is starkly apparent in Table 6, which shows the percentage of individuals who reported certain events occurring due to a shortage of money between January 2001 and the interview. The greater financial difficulty faced by the unemployed relative to each other labour force group holds across all seven measures. Particularly alarming is that 17.1 percent of unemployed persons responding to the self-completion questionnaire reported going without meals at some time due to a shortage of money.

Table 5: Proportion reporting incidences of financial stress by labour force status.

Variable	Employed	Unemployed	Discouraged Jobseekers	Not In Labour Force
Could not pay bills on time	18.3%	37.3%	19.5%	18.5%
Could not pay mortgage/rent on time	8.9%	16.5%	14.8%	8.2%
Pawned or sold something	5.4%	20.1%	8.5%	7.1%
Went without meals	3.7%	17.1%	3.4%	5.0%
Was unable to heat home	2.6%	10.7%	8.5%	5.0%
Asked for financial help from friends or family	16.2%	37.9%	14.4%	15.2%
Asked for help from welfare/community organisations	3.4%	22.4%	6.7%	6.8%

Social interaction and support

A series of questions in the SCQ relate to the individual’s level of social interaction and the degree of social support available to them from friends and family. Thirty-five percent of the unemployed persons reported being active members of a sporting, hobby or community-based club or association. Given the extra time available to unemployed persons, one might expect this to be higher than for employed workers. In fact 40 percent of employed workers were active members of such clubs. Having greater free time does seem to increase club or association involvement for discouraged workers (48 percent), while those not in the labour force have a similar rate of involvement as employed persons (39 percent). However, unemployed persons do appear to get together more often with friends or relatives (other than those they live with) – 46 percent of the unemployed reported doing so several times a week or more, compared to 30 percent for employed persons and around 35 percent of discouraged workers and others NILF.

Table 7 reveals that the unemployed generally feel that they have a lower level of social support available to them. On the other hand, the unemployed may be in greater need of social support and the results indicative of a perceived deficiency in social support relative to their needs, as opposed to an actual lower level of support. On each measure in the table, respondents were asked the degree to which they agree or disagree with the statement on a 7 point scale. Again, each has been coded such that a higher number indicates a more positive outcome. On nine of the ten measures the unemployed fare worse than the employed, particularly those relating to the availability of people to turn to when help is required and on feeling lonely.⁵ While unemployed persons were more likely than people in jobs to agree with the statement “I seem to have a lot of friends”, the difference is not statistically significant. The unemployed also fare significantly worse than those NILF on most measures.

⁵ In each case the difference in the means between employed and unemployed persons is statistically significant at the 1% or 5% level, with the exception of “When something’s on my mind, just talking ...”, for which the difference is only weakly significant according to standard t-tests.

Table 7: Indicators of social support by labour force status^a

Variable	Employed	Unemployed	Discouraged Jobseekers	Not In Labour Force
People don't visit me as often as I would like.	4.49	4.25	4.43	4.46
I often need help from other people but can't get it.	5.69	5.08	5.49	5.47
I seem to have a lot of friends.	4.64	4.67	4.46	4.61
I don't have anyone that I can confide in.	5.64	5.12	5.27	5.38
I have no one to lean on in times of trouble.	5.76	5.24	5.32	5.44
There is someone who can always cheer me up when I'm down.	5.21	5.01	5.20	5.15
I often feel lonely.	5.31	4.77	5.02	5.08
I enjoy the time I spend with the people who are important to me	6.34	6.18	6.13	6.29
When something's on my mind, just talking with people I know can make me feel better.	5.59	5.47	5.74	5.67
When I need someone to help me out, I can usually find someone.	5.60	5.23	5.22	5.60

Notes: a. Original scales range from 1 (strongly disagree) to 7 (strongly agree). Each has been recoded such that a higher number is a more positive response. Number of observations varies from 7921-7966 for employed; 541-548 unemployed, 114-118 discouraged jobseekers and 4205-4302 NILF.

4. The Experience during the Unemployment Spell

This section focuses on the experiences among the unemployed rather than in relation to other labour market states. A major objective is to identify factors that may contribute to negative duration dependence, and to do so we look at variables or instruments that may be correlated directly or indirectly with parameters of the job search model. It is important to recall the qualification that looking at the value of variables conditional on duration at a point in time is not the same as following a cohort over time. We cannot conclude that duration causes the change in the variable, or even that duration would be associated with that variable were we to monitor the cohort over time.

As inconvenient as it may be, we can be thankful that the behaviour of human beings is influenced by non-economic variables. These include personality traits, idiosyncratic perceptions and expectations, emotional and psychological states. The decisions that one individual makes based on a set a economic variables are likely to differ from those of another person given identical values for that vector of variables. Decisions are even likely to be different if the same person was to face the same economic conditions but at different points in time. The simplifying assumption that individuals act to maximise future expected earnings may well be robust enough to adequately explain the behaviour of the unemployed, without need to refer further to non-economic variables. However, there are reasons to expect that non-economic variables have the potential to add significantly to the explanatory power of the model:

1. An individual's decisions are based on their *perceptions*, rather than the *actual* values and distributions of variables. For the most part, the actual values may provide a good approximation of perceptions. However, emotional or psychological states and personality traits may lead to systemic deviations

- between an individual's perceptions and reality, such as perceptions of the wage-offer distribution or of their chance of gaining a job offer in the next period.
2. There will be psychological or emotional risks (and hence costs) associated with job search activities that are not included among the economic variables in the model, and these may become very large for individuals in certain states of mind – eg. the impact of further rejections on self-confidence and feelings of self-worth, or of accepting jobs considerably inferior to previous occupations or expectations, or jobs incompatible with one's perceptions of the "self".
 3. Extreme psychological states may lead to systematic "irrationality" in which individuals no longer make optimising decisions from an economic standpoint, such as if they experience despair, learned helplessness or dependence.

If time in unemployment does impact upon an individual's emotional state such that their perceptions and behaviour with respect to job search activities also change, then the hazard rate out of unemployment may also change with duration even if the values of other economic variables remain constant.⁶ To develop these observations into useful constructs we need, firstly, to identify measures of the individual's psychological state and establish that these are affected by time in unemployment. We can then examine whether they impact upon parameters within the job search model.

There is an extensive literature relating to the psychological effects of unemployment. For the investigation at hand, I draw principally on the review by Feather (1990). A number of studies attempt to identify psychological stages that a person passes through upon becoming unemployed, such as an initial shock, followed by periods of optimism, pessimism and fatalism. Other studies seek to identify the particular characteristics of the unemployment experience that impact upon an individual's psychological wellbeing. For example, Jahoda's Functional Approach posits that participation in paid employment generates a range of functions in addition to income that are important for psychological wellbeing, such as a time-structure to the day, social interaction, self-identity and purpose (Jahoda 1982). An important observation to be drawn from the literature is that the effect of unemployment is very different for different individuals.

Some of the potential mediating or compounding factors include the availability of financial resources and the ability to legitimise unemployment, such as by those close to retirement age or who take on child-minding activities (Harrison 1976); the level of social support available and the individual's attitudes towards work (work ethic) and their role as a "breadwinner". Warr (1987) notes that the impact of unemployment on middle aged men is much worse than for youth because older men have greater financial responsibilities and a sense of their role as provider, and because work plays a far more important part in their concept of self. The ability to legitimise unemployment may explain why many of the results for discouraged workers reported above are not as severe as for unemployed workers. Many discouraged workers may have ceased looking because have alternative activities or roles. From these studies, too, there are grounds to expect that involvement in mutual obligation activities may also act as a mediating factor.

⁶ Of course, it is not necessarily the case that such effects would be to reduce the chance of leaving unemployment. Some may increase the chance of leaving unemployment over certain intervals.

Also of value is Feather's discussion the wider theoretical frameworks that enable a conceptualisation of how people respond to unemployment. Three in particular stand out as having potential application in the analysis of unemployment based on HILDA data (Feather 1990: Chapter 4):

- *Attribution theory* predicts that life events will have different impacts upon a person depending upon what they perceive to be the cause of the event (their attributions). For example, a person will experience feelings of pride and greater self-esteem following a successful outcome if they can attribute that outcome to their own qualities or efforts, rather than if they perceived the outcome to have come about by chance. Similarly, a person may feel differently about becoming unemployed in times of a recession when many others are unemployed and their situation can be attributed to external factors beyond their control. These people may feel anger or frustration, while someone who attributed their unemployment to their own personal characteristics or efforts may feel a loss of self-esteem. Attribution of failure at job interview to a permanent factor is more likely to lead to lowered expectations than if it is attributed to a variable factor, such as chance or the choice of "sales pitch".
- *Helplessness theory* is similar to attribution theory. Helplessness occurs when an individual perceives outcomes to be unrelated to responses. Personal helplessness occurs when the perception is that outcomes cannot be effected by anything the individual does, while others do have the ability to influence outcomes. Universal or global helplessness occurs when the expectation is that outcomes cannot be changed no matter what anybody does. Personal helplessness is thought to lead to a loss of self-esteem, while stable and global helplessness may lead to a generalisation of the feeling of helplessness across situations.
- *Self-efficacy theory* makes an important distinction between self-efficacy and outcome expectations. If I believe strongly that a set of actions, *X*, will be adequate to bring about a desired result, *Y*, I have a strong outcome expectation. However, if I am doubtful of my ability to execute that set of necessary actions, I have low self-efficacy. The influence of self-efficacy on the individual is seen to depend upon whether the individual perceives the outcome environment to be rewarding. In the context of unemployment, a person who has high confidence in their ability to find a job and believes doing so would provide large benefits will persist in job search, although repeated failures may lead to a revision of their perception of their self-efficacy. On the other hand, a person who has a low perception of self-efficacy while believing a job would offer high benefits may experience self-devaluation. Apathy and resignation occurs when there is a combination of perceived low self-efficacy and perceived low rewards (see Bandura 1982).

These and other theories suggest that the impact of unemployment on psychological wellbeing is influenced by the unemployed person's perceptions of the reason they became unemployed, the main causes of their ongoing unemployment and their likelihood of finding a job in the near future. It does seem that the unemployed revise their perceptions of their main difficulty in finding work as the duration of their spell progresses. The large proportion of the unemployed perceiving themselves to face no difficulty at all or their main difficulty to relate to external labour market conditions gives way to the perception that their own skills and experience are the main barrier

(see table 8). Note, however, that the same pattern can also be explained if those who perceive their human capital attributes to be the main difficulty are the ones who have the lowest escape rate from unemployment. Most obviously the decline in the proportion of those who perceive themselves to have no difficulties at all with duration is likely to be because these people do indeed exit after only short spells. Again, only with further waves of HILDA will we be able to distinguish between these influences.

Table 8: Nominated main difficulty in finding work by duration; percentage of unemployed

	Own human capital attributes	Labour market conditions	Other personal circumstances	No difficulties at all
Less than 4 weeks	18.7%	33.6%	19.6%	26.2%
4 weeks but less than 13 weeks	33.8%	30.6%	17.2%	15.9%
13 weeks but less than 52 weeks	40.8%	30.7%	17.3%	8.9%
1 year but less than 2 years	39.3%	25.0%	25.0%	5.4%
2 years or more	54.0%	24.1%	19.5%	1.1%
All unemployed	37.3%	29.6%	18.9%	12.0%

We saw from Table 5 that the unemployed rank worse than those in employment on a range of nine survey measures of mental wellbeing and vitality. A factor analysis of these nine variables for the full sample reveals two distinct factors as expected.⁷ The first loads heavily on measures of vitality, notably “having a lot of energy” and “feeling full of life”. The second factor loads heavily on what appear to be indicators of happiness (or, inversely, of a depressed state of mind) – “feeling so down in the dumps that nothing could cheer you up”, “feeling down” and “being a nervous person”. These questions were also among those used as instruments in the National Health Survey, as analysed by Flatau *et al* 2000. The two factors identified explain around two-thirds of variation in the nine indicators. The factor scores confirm that the unemployed fare markedly worse on the happiness or mental wellbeing factor, with a mean of -0.33 (factor scores have a zero mean and variance of 1).

Table 9 shows the happiness and vitality factor scores by duration of unemployment. There are no significant differences by duration for the measure of vitality, and only weak evidence that mental wellbeing declines with time in unemployment. The mean for those unemployed between 13 weeks and one year is significantly lower than the newly unemployed – indicating their responses showed greater signs of a depressive state. Flatau *et al* likewise do not identify a clear linear trend with duration using these measures of mental wellbeing, but rather an oscillation between “poor and poorer outcomes” relative to the employed (2000: 177).

⁷ The principal factor method with promax rotation was used.

Table 9: Vitality and mental wellbeing factor scores: means by duration of unemployment

	Vitality	Happiness
Less than 4 weeks	0.028	-0.267
4 weeks but less than 13 weeks	-0.030	-0.330
13 weeks but less than 52 weeks	0.013	-0.413*
1 year but less than 2 years	-0.146	-0.345
2 years or more	0.070	-0.300
All unemployed	0.006	-0.329

Notes: * significantly different from the figure for 0-4 weeks at the 5 percent level.

To develop further constructs in investigating the unemployment experience, factor analyses are also carried out on the set of measures of social support and financial stress. Again two factors are identified for social support. The first loads on the questionnaire statements relating to feeling lonely and having no one to turn to in time of need. The second relates to enjoying or utilising the available social support – feeling better from just talking to people, enjoying the time spent with people, having people there and to cheer you up when needed. Being married is an important factor in social support – married persons score significantly higher means for both factors, but the difference is most pronounced for the factor relating to close social support (or, inversely, loneliness). For financial stress only one factor contributes much to explaining the variance and relates to missing payments for bills, mortgages etc. However, I include a second factor which loads heavily on indicators which one would relate to more dire financial emergencies of going without meals or heating, pawning goods or needing help from welfare organisations. A clear trend of increasing financial stress seems apparent, however, for each of these factor scores except the enjoyment/utilisation of social support for persons unemployed for 2 years or more, standard t-tests reject the null hypotheses of a significant difference in the means when compared to those recently unemployed.

Table 10: Social support and financial stress factor scores: means by duration of unemployment

	Close social support	Enjoy/utilises social support	Difficulty meeting expenses	Financial emergencies
Less than 4 weeks	-0.262	-0.073	0.401	0.632
4 weeks but less than 13 weeks	-0.218	-0.143	0.424	0.415
13 weeks but less than 52 weeks	-0.311	-0.027	0.578	0.944
1 year but less than 2 years	-0.131	-0.123	0.636	1.009
2 years or more	-0.484	-0.462*	0.619	1.062
All unemployed	-0.291	-0.146	0.534	0.801

Notes: * significantly different from the figure for 0-4 weeks at the 5 percent level.

Basic linear regressions models are estimated to attempt to isolate factors that impact on unemployed individuals' levels of happiness and vitality in unemployment, and a sample of results presented in Table 11. We find that males are happier, but persons aged 20-24 less happy. Of the factor scores discussed above, the social support factor indicating the presence of close friends to offer support has the largest impact. When this is included, being married is actually associated with less happiness – or a greater

tendency toward depression. One explanation for this would be that unemployed persons get a greater awareness of inadequacy if they have a family to support. However, when I interact gender and marital status, it is married females who are most depressed, and married men who are the happiest among the unemployed! Thus, a more feasible interpretation is that being married but having a partner at home mitigates the depressing effect of unemployment. The factor relating to the occurrence of financial emergencies is associated with lower levels of happiness. Attitudes also matter – the more strongly one indicated in the SCQ that “It is important to have a paying job in order to be happy” the more depressed they were in unemployment.

Table 11: Factors affecting constructed happiness and vitality factors for unemployed persons: OLS estimates

Variable	Happiness factor		Happiness Factor		Vitality factor	
	Coefficient	Pr > t	Coefficient	Pr > t	Coefficient	Pr > t
Intercept	0.3395 *	0.07	0.5020 **	0.02	0.1863	0.20
Male					0.2630 ***	0.00
Married male	0.3811 ***	0.01	0.2999 *	0.06		
Single male	0.3655 ***	0.00	0.2895 **	0.05		
Married woman	-0.3309 **	0.02	-0.4232 **	0.01		
Single woman	—		—		—	
Aged 15_19	-0.2485	0.10	-0.3681 **	0.05	0.2541 *	0.06
Aged 20_24	-0.3510 **	0.02	-0.4166 **	0.02	0.2748 *	0.06
Aged 25_34	-0.1802	0.20	-0.2330	0.14	0.0113	0.93
Aged 35-44						
Aged 45_54	0.1382	0.35	0.1299	0.44	-0.1821	0.19
Aged 55 plus	0.1007	0.59	0.1180	0.57	-0.0523	0.77
In intensive assist.	-0.2536 **	0.02	-0.3549 ***	0.01	0.0227	0.83
Decile of socio-economic disadvantage of cd.					-0.0364 **	0.02
Constructed factors						
- has close soc support	0.3893 ***	0.00	0.4092 ***	0.00	0.2382 ***	0.00
- enjoys support	0.0669	0.15	0.0597	0.27	0.2671 ***	0.00
- financial emergencies	-0.1119 ***	0.00	-0.1175 ***	0.00	-0.1084 ***	0.00
Main diff finding work: – personal circumstances					-0.2033 *	0.07
It is important to have job ^a	-0.0834 ***	0.00	-0.0692 **	0.01		
Wage in last job			-0.0079 *	0.08		
Observations	477		360		481	
Degrees of freedom	13		14		12	
R-squared	0.3224		0.3308		0.2881	
Adjusted R-sq.	0.3035		0.3038		0.2699	
F statistic	16.99		12.22		15.82	
p(>f)	<.0001		<.0001		<.0001	

Notes: ***, ** and * denote significance at the 1%, 5%, 10% levels respectively. a. Full statement was “It is important to have a paying job in order to be happy”, with responses ranging from 1 (strongly disagree) to 7 (strongly agree).

Surprisingly, the data confirms the finding above of no real evidence that an individual’s level of happiness declines with time in unemployment. The broad categories relating to the perceived main barrier to finding work (see discussion of

Table 3) were tested and not found to be significant. Current involvement in a mutual obligation activity does not appear to have any significant effect on mental wellbeing, while being in intensive assistance is actually associated with lower levels of happiness. This latter finding holds irrespective of the inclusion of variables capturing duration but may still be a result of other factors associated with those who find themselves in long term unemployment and intensive assistance and which are not adequately controlled for. Including data on the (hourly) wage received in the last job leads to the exclusion of a large number of observations, thus results for the model including this variable are reported separately in the middle column. As would be expected from Jahoda's Functional Approach, we see that unemployed persons are less happy the higher their previous wage level.

The important initial findings with respect to the effect of unemployment on mental wellbeing are that having close social support and marital status matter, while time in unemployment does not appear to have a strong depressive effect. This latter and unexpected result requires more attention. The literature suggests that a factor such as social support may impact upon the state of wellbeing directly, but also on the relationship between time in unemployment and mental wellbeing. To investigate this, a series of correlation coefficients are calculated between the constructed happiness factor and unemployment duration in weeks. This is close to zero and insignificant for the full sample, and an extensive range of subsets of the sample tested, included subsets defined by age, gender, marital status and scores on the social support and financial stress factors, returned the same result. Only for some deciles of the relative socio-economic disadvantage index of the individual's collection district were significant and negative correlation coefficients returned — the ninth decile and the fourth. So even here the pattern cannot be said to be consistent.

Analysis of variables associated with the vitality factor reveals a number of robust relationships. Younger unemployed persons display higher vitality scores, as do males. There appears no systematic variation according to marital status. Those with higher scores on the two social support factors – having close friends for support and enjoying time with friends — report higher levels of vitality, although causality may run in the reverse direction. Persons who perceive their main barrier to finding work as being personal circumstances display lower vitality factor scores than those who perceived inadequate human capital or labour market conditions to be their main difficulty, or those who perceived themselves to have no barriers. Personal circumstances included those relating to illness or disability, childminding and other family responsibilities, among others. A measure of the socio-economic disadvantage of the collection district is significant for the vitality score, but not for the happiness score. The estimated coefficient indicates that unemployed persons from areas of relative socio-economic disadvantage have lower vitality scores. Again there is no evidence of a duration effect of time in unemployment on individuals' sense of vitality, and prior earnings is insignificant.

Job Search Experience

By definition those classed as unemployed must have actively looked for work in the previous four weeks. Table 12 shows the steps taken by those persons to look for work in the past four weeks, ordered by their reported incidence. Three quarters of

the unemployed indicated that they had contacted an employer in person for work, and this was the most common method used. The proportion in this sample who indicated that they contacted friends or relatives seems low compared to that observed by Dockery and Strathdee (2002) using data from the Longitudinal Surveys of Australian Youth. This may be in part because that sample was restricted to young school-leavers, and also in part because this option did not appear on the HILDA survey show-card but was rather listed as a “prompt” for the interviewer to canvas if anything else had been done to find a job. Typically, jobseekers reported using 3 of these methods of job search in the past four weeks. Only around 10 percent reported using 6 or more different methods.

Table 12: Methods of job search used: percent of unemployed persons

Had done the following in the last 4 weeks:	%
Written, phoned or applied in person to an employer	75.0
Answered an advertisement for a job	51.9
Been registered with Centrelink as a jobseeker	50.4
Checked or registered with an employment agency	45.5
Checked factory noticeboards or used the touchscreens at Centrelink offices	41.5
Looked in newspapers, but did not actually answer an advertisement for a job	28.6
Contacted friends/relatives	20.2
Other	7.9

Individuals who were either looking for work or wanting to work were asked what they saw their chances were of finding a suitable job in the coming 12 months, expressed as a percent. Almost half of the “discouraged jobseekers” sample described above rated themselves as having no chance of finding a job. The unemployed are far more optimistic, with almost half giving themselves an even chance. On average (taking the mean of the responses) the unemployed rated themselves as having a 60 percent chance of finding work in the coming year, while discouraged jobseekers gave themselves a chance of only 20 percent. The long-term unemployed are also more pessimistic. The means for those who had been unemployed between 1 and 2 years was 46 percent, dropping to 39 percent for those who had been out of work for 2 years or longer (Table 13).

Table 13: Mean offer rate and perceived chance of finding suitable work; unemployed persons by duration

	Job offer rate (per year in unemployment)	Chance of finding suitable work in next 12 months (%)
Less than 4 weeks	14.3	65.5
4 weeks but less than 13 weeks	3.9*	69.9
13 weeks but less than 52 weeks	1.1*	63.4
1 year but less than 2 years	0.5*	45.8*
2 years or more	0.2*	38.7*
All unemployed	4.5	59.8

Notes: * significantly different from the figure for 0-4 weeks at the 5 percent level.

Contrary to a literal interpretation of the job search model, the unemployed report receiving very few job offers. Almost three-quarters of those unemployed at the time

of the survey reported they had received no job offers in their current spell of unemployment. Seven percent report having received three or more offers. Many will have ignored job vacancies that they were not interested in because these were not in their vocational field or because the offered wage was too low. Of course it is pointless to apply for a job one is not going to accept. In the sense that the unemployed may have been offered (but rejected) such jobs had they applied, the arrival rate and rejection rate in the spirit of the job search model will be much higher than the reported number of offers in HILDA. Also, accepted job offers are not observed due to the fact that we are working with a sample of current spells of unemployment and not completed spells. With these qualifications, an “implied” offer arrival rate based upon the reported number of offers and duration of unemployment can be calculated and is also reported in Table 13. The figure has a mean of 4.5 offers per year in unemployment for the sample overall, and it can be seen that this also declines with duration of unemployment.

In a recent paper Dockery and Strathdee (2002) investigated the factors that influenced the methods of job search used by young jobseekers. An initial objective of that analysis was to identify the role of “social network capital” — networks of friends and family and regional neighbourhood effects — following work by Granovetter (1995) and Rosenbaum (2001). However, the poor constructs available for these factors in the data contributed to inconclusive results. We did find evidence that use of the CES was associated with “inferior” labour market characteristics and in turn tended to lead to poorer employment outcomes. Contacting friends or relatives was found to be a highly successful means of finding work, as Heath (1999) found using data from the Australian Youth Survey, but that it often lead to part-time and otherwise lower quality jobs.

HILDA offers potentially robust measures of social network capital, including the indices of “socio-economic economic disadvantage”, “economic resources” and “education and occupation” for each individual’s collection district. Table 14 presents the results of simple logit models of the probability that an unemployed person used selected job search methods in the past four weeks. The methods modelled are writing, phoning or applying in person to an employer; answering an advertisement for a job; being registered with Centrelink; and contacting friends or relatives. Table 15 reports the results of an ordered probit estimation of the number of different methods persons reported using in the past four weeks, other than being registered with Centrelink. As we are interested in the effect of being registered with Centrelink on job search activity, Centrelink registration is tested among the explanatory variables in explaining utilisation of the other three job search methods, and excluded in the summation to generate the dependent variable for the probit model. Including Centrelink registration in the summation would, by construction, generate a positive relationship between registration and the number of job search methods used. On a note of caution, these are less than perfect measures of job search intensity, since a person may have searched exhaustively but have used only one particular method.

Although the analysis must be considered exploratory rather than definitive at this stage, some important results emerge. In terms of the public employment services offered to the unemployed, registration with Centrelink does appear to be associated with a higher job search efforts. Persons reporting that they had been a registered

jobseeker during the past four weeks were more likely to have made an application to an employer and to have answered an advertisement. Registration also has a very large impact on the number of different job search methods reported. There is also a positive effect on the number of job search methods tried from being in intensive assistance under the Job Network, which should be an additional effect to initial registration with Centrelink. However, being in Intensive Assistance was not found to have a significant impact on the utilisation of the individual methods selected. Currently undertaking a mutual obligation activity was also tested and was insignificant in all models. This is not necessarily a negative result, since one potential drawback of mutual obligation activities is that participation reduces the individual's capacity for search activities.⁸

As in previous research, it is clear that Centrelink is a job search strategy utilised mainly by those who are disadvantaged in the labour market. Centrelink utilisation among the unemployed is greater for those with low qualifications, with longer current duration of unemployment, who live in neighbourhoods of greater socio-economic disadvantage; who score high on the principal factor relating to the occurrence of financial emergencies and who lost their job through being retrenched or dismissed. Registration at Centrelink is more common among those who see their main barrier to employment as relating to their own human capital or the external labour market situation, rather than those whose barrier is related to personal circumstances or who perceive themselves to face no difficulties.

There is strong evidence of a negative duration effect on job search efforts. Each of the other three individual job search methods display declining utilisation with duration of unemployment. For the probit model of the number of methods used a drop is identified for the long term unemployed (unemployed 1 year or more). With the possible exception of this duration effect, there is no evidence that job search intensity acts as a mechanism in generating poverty traps. Utilisation of all four of the selected methods and the number of methods used increases with the decile of socio-economic disadvantage. Our summary factor of the occurrence of financial emergencies indicates that financial stress promotes Centrelink registration and a wider variety of search methods. In the model for whether or not the individual had answered an advertisement, the response from a direct question asking the household's level of prosperity proved the better instrument, the result showing persons from less prosperous households were more likely to respond to an advertised vacancy. The search strategies and activities of those with lower economic resources may well be less effective, but it does not seem to be the case that they make less effort.

The constructed factors relating to vitality, health and social support do not have much influence. The estimated coefficients indicate that those unemployed persons with higher reported levels of vitality and happiness are less likely to approach an employer in person for work (the latter just fails to attain significance at the ten percent level). Those with access to strong social support and those who enjoy utilising their social support are more likely to approach an employer in person. These factors were insignificant in all other models.

⁸ 16 percent of the unemployed reported they were currently undertaking mutual obligation activities.

Table 14: Factors affecting use of job search methods of unemployed persons — logit model results.

	Applied in person to an employer	Answered an advertisement	Been registered with Centrelink	Contacted friends or relatives
Intercept	0.683	-1.559 **	-1.935 ***	-1.767 ***
Male	0.547 **	0.205	0.863 ***	0.443 *
Aged 15_19	-0.007	-0.026	-0.417	-0.471
Aged 20_24	-0.583	-0.603 *	0.317	-0.581
Aged 25_34	-0.611 *	0.138	0.309	-0.300
Aged 35-44	—	—	—	—
Aged 45_54	-0.290	0.156	0.101	0.151
Aged 55 plus	0.263	-0.952 **	0.276	-0.102
Married	0.112	0.454 **	0.044	-0.101
Qualifications:				
- did not finish school	—	—	—	—
- low qualifications		0.662 ***	0.528 **	
- medium qualifications		0.471 *	0.157	
- high qualifications		0.564 *	0.567	
Reg. with Centrelink	0.611 **	0.582 ***		
Unemp duration (1-5) ^a	-0.079	-0.205 **	0.258 ***	-0.180 *
Indices for collection district (deciles)				
- socio-econ. disadvtge	0.094 **	0.093 **	0.215 **	0.211 ***
- educ. & occupation			-0.221 ***	
- economic resources			-0.124 *	-0.113 *
Main difficult finding work				
- none	-0.124	-0.400	0.162	-0.796 *
- personal circumstances	—	—	—	—
- human capital	-0.360	0.565 **	1.240 ***	-0.329
- external labour market	0.328	0.321	1.042 ***	-0.337
Constructed Factors				
- vitality	-0.358 **			
- happy	-0.214			
- has close soc support	0.256 **			
- enjoys support	0.235 **			
- Financial emergencies			0.169 ***	
Has a lot of friends				0.126 *
Financial prosperity (1-6) ^b		0.198 *		
Retrenched or dismissed			0.591 **	
Observations	488	530	504	522
Deg. of freedom	17	17	19	14
Model Fit Criteria (χ^2)				
-2 Log Likelihood	41.3 ***	71.9 ***	125.9 ***	25.5 **
Score Statistic	39.4 ***	67.9 ***	113.2 ***	25.0 **
Wald Test Statistic	36.4 ***	60.7 ***	91.6 ***	23.7 *

Notes: ***, ** and * denote significance at the 1%, 5%, 10% levels respectively. a. The variable for unemployment duration is ranges from 1 to 5: < 4 weeks; 4 but < 13 weeks; 13 weeks but < 1 year, 1 year but < 2 years, 2 years or more. b. The variable for financial prosperity is measure on a 6 point scale: 1. prosperous, 2. very comfortable, 3. reasonably comfortable, 4. just getting along, 5. poor, 6. very poor.

Table 15: Ordered probit model of the number of different job search methods used (excluding registration with Centrelink)

Independent Variable	Coefficient
Intercept	-4.665 ***
Male	0.190 *
Aged 15_19	-0.206
Aged 20_24	-0.417 **
Aged 25_34	-0.052
Aged 35-44	—
Aged 45_54	-0.012
Aged 55 plus	-0.548 ***
Married	0.060
Did not finish school	—
Low qualifications	0.357 ***
Medium qualifications	0.106
High qualifications	0.222
Reg. with Centrelink	1.549 ***
In intensive assistance	0.370 ***
Unemployment duration:	
- short-term (0-13 weeks)	—
- medium term (13 – 51 weeks)	0.017
- long term (52 weeks or more)	-0.363 ***
Indices for collection district (deciles)	
- socio-econ. disadvtge	0.072 ***
Main difficult finding work	
- none	-0.805 ***
- personal circumstances	—
- human capital	0.125
- external labour market	0.130
Cons. Factors – Financial emergency	0.067 **
Inter.2 ^a	0.918
Inter.3 ^a	1.754
Inter.4 ^a	2.476
Inter.5 ^a	3.056
Inter.6 ^a	3.772
Inter.7 ^a	4.638
Observations	525

Notes: ***, ** and * denote significance at the 1%, 5%, 10% levels respectively. a. Inter.2 to Inter.7 are parameters generated by the probit estimation for each level of the response variable. When an intercept term is included there are k-2 such parameters, where k represents the number of response levels.

Some other results to note are that males appear to search more intensively than females. Marital status has little influence, although interaction of the gender and marital status variables reveals that the greater search intensity of males applies most of all to married men. Variables on the jobseekers' level of optimism had to be excluded because of potential endogeneity — those who had recently applied to employer in person or answered an advertisement could be expected to be more optimistic about securing a job in the future, unless they had already been notified that such steps had been rejected.

An important category of variables that have not been incorporated here relate to the receipt and amount of social security benefits and replacement rates, and a number of factors that influence the level of benefits that would be received, such as the number of dependents. It is expected that job search efforts would decline, *ceteris paribus*, if a person receives benefits and as the amount of benefits received increases. However, this is problematic since we do not know the marginal tax rates and these are extremely difficult to calculate. There is also an issue of endogeneity, since receipt of benefits is often conditional on some making some effort to find a job, and indeed this is likely to be at least part of the effect we are picking up with respect to registration with Centrelink. Further, welfare payments vary according to personal circumstances such as income and the number of dependents, so it is difficult to disentangle the effect of benefits themselves from the factors that determine the payment levels. It seems best to steer away from analysis of these effects until more progress has been made in addressing these issues. As a very rough proxy, it can be assumed that replacement rates are inversely associated with the expected or potential earnings the jobseeker receives should they get a job. The wage earned in the previous job can be used as a proxy for this unobservable wage outcome. As discussed, the sample size available for estimation reduces considerably due to missing values for this variable, but when it is included the estimated effect of a higher wage is to increase the likelihood that the jobseeker will answer an advertisement and this estimate is highly significant. A positive coefficient in the probit estimation of the number of methods used just fails to attain significance at the 10 percent level. Thus the results are consistent with the interpretation that a higher replacement rate (higher benefit levels) reduces search intensity.

Reservation wages

In the personal interview persons looking for work were asked what the lowest hourly wage that they were willing to work for would be, before any tax is taken out. The final set of results look at the factors impacting upon this reservation wage. The responses had a mean of \$12.50. The standard approach to estimating a wages equation is followed by estimating the log of the reservation wage in a least squares regression. We know that wages earned are strongly influenced by human capital variables, such as level of education, experience and experienced squared, plus occupation and industry specific premiums, and estimated wages equations typically explain around twenty-five percent of variation in wages. In estimating reservation wages, it can be assumed that both observable and unobservable human capital and other individual characteristics which impact upon wages are embodied in the wage earned in the unemployed person's previous job. Indeed, when this variable is included, these standard variables become insignificant. Indeed, wages earned in the person's last job explain 29 percent of the variation in the nominated reservation wage.

The reduced form model reported in Table 16 is arrived at after testing and excluding a range of other variables. Of particular note among the insignificant variables are those reflecting to the household's financial circumstances. Neither the ability to meet expenses, the occurrence of financial emergencies or the rating of relative prosperity impacted significantly upon reservation wages. Others include the main difficulty in finding work – people do not appear to reduce their wage if they perceive

the barriers are related to their own human capital or to labour market conditions; participation in intensive assistance or mutual obligation activities; or any of the indices relating to the socio-economic status of the collection district.

Table 16: Reservation wage equation: dependent variable log of hourly reservation wage

Variable	Estimated coefficient	Pr > t
Intercept	1.8939 ***	0.00
Log of hourly wage in last job	0.1367 ***	0.00
Male	0.0639 **	0.05
Age at last birthday (in years)	0.0113 ***	0.00
Married	-0.0873 ***	0.01
Duration of unemployment (weeks)	-0.0014 ***	0.00
Is registered with Centrelink	-0.0691 **	0.03
Constructed factors:		
- vitality	0.0247	0.11
- enjoys social support	-0.0314 **	0.04
Observations	333	
Degrees of freedom	8	
R-squared	0.4194	
Adjusted R-sq.	0.4052	
F statistic	29.35	
p(>f)	<.0001	

Notes: ***, ** and * denote significance at the 1%, 5%, 10% levels respectively.

It seems the unemployed largely determine their reservation wage on the basis of the wage received in their last job discounted by around 0.14 of a percentage point for each week of unemployment, or by about 7.5 percent after one year of unemployment. The square of duration was not found to be significant. Registration with Centrelink also reduces the reservation wage by around 7 percent. Increased vitality leads to a higher expected wage, but no role for mental health or job search intensity is identified.

5. Conclusions and Discussion

Wave 1 data from the HILDA survey provide ample evidence that the unemployed experience a significantly worse standard of life than those in employment and, on most scores, than those not in the labour force. The unemployed are less satisfied with many aspects of their life, including their affinity with their local community and the neighbourhood in which they live, and particularly with their financial situations. Their responses to standard constructs of mental health display clearly that they experience lower levels of mental or emotional wellbeing, and have (or perceive themselves to have) a lower level of social support available to them in order to cope with these circumstances. A common concern is that the unemployed who become most despairing or disaffected simply give up looking for work, and thus drop out of the formal definition of unemployment. However, I do not find evidence here of a pool of discouraged and depressed workers. The sample defined as discouraged workers display generally better outcomes than the unemployed on the range of measures of mental health, social support and financial stress.

Physical health is perhaps one of the aspects in which the unemployed fare *relatively* well on, though not as well as the employed. Discouraged workers and those not in the labour force report low health status and higher incidences of long-term health conditions or disabilities. This will partly reflect the role of health and disability status in determining their participation status.

Of course, the finding that those who become unemployed experience a lower quality of life comes as no surprise given previous research, theory and simply our own intuition and experience. To me the surprising result from this paper is the lack of evidence of a clear deterioration in their quality of life with duration of unemployment. There are many individual characteristics and initial conditions that have not been controlled for here, and more definitive relationships may be discernible with the benefit of longitudinal data. It is possible, however, that time in unemployment or even the event of becoming unemployed is not that important a determinant of wellbeing or of the standard of living for those persons most at threat of unemployment. As a generalisation, it can be expected that those who are most at risk of entering unemployment tend to have lower levels of education, come from lower socio-economic neighbourhoods and move in and out of “inferior” jobs that offer low pay and poor working conditions, job satisfaction or advancement opportunities. That is to say, for many of those who become unemployed their circumstances may not so much worse than those they faced in employment. The result regarding prior earnings — that those coming from lower paid jobs are not as unhappy in unemployment — is consistent with this interpretation, but also with other interpretations available in the psychological literature.

Several factors were found to have a mediating effect on wellbeing in unemployment as expected from the literature, including the level of social support and availability of financial resources. These are “mediating” in the sense that persons with higher levels of social support and financial resources are less depressed, but not in the sense that they limit the impacts of duration of unemployment, since we find scant evidence of a duration effect at all! Some of the factors were not found to have had the influence on mental wellbeing that may have been expected to from the psychological literature and from other studies include the main difficulty in finding work or the reason a person lost their last job (attribution) and the jobseeker’s level of optimism about finding suitable work.

Turning to parameters of the job search model we find some evidence that job search intensity and the job offer arrival rate falls with duration of unemployment, and that jobseekers revise their reservation wage downwards the longer they are unsuccessful in finding work. Declining job search intensity and job offer arrival rates would contribute to negative duration dependence. Neighbourhood effects do appear to be of some importance, but perhaps not in the way expected. It appears that those in more disadvantage areas make more effort to find work. With the possible exception of the duration effect, there is no evidence that job search intensity acts as a mechanism in generating poverty traps. Utilisation of all four of the selected methods and the number of methods used increases with the decile of socio-economic disadvantage. Our summary factor of the occurrence of financial emergencies indicates that financial stress promotes Centrelink registration and a wider variety of search methods. The long-term unemployed may search less due to disillusionment

or other factors, but a decline in financial resources available to them actually seems to promote job search, although the effectiveness of that search is another matter.

The findings, tentative as they are, provide a mixed report card for the policies and measures in place to assist the unemployed. Being in intensive assistance is estimated to have a depressive effect on the unemployed. However, both Centrelink registration and intensive assistance appear to increase job search intensity. Participation in mutual obligation activities stands out only for the complete absence of any identified effects. Proponents of the approach would argue that mutual obligation activities have a positive impact on the mental wellbeing of the unemployed. Opponents would say it has a demeaning effect and reduces the time available to devote to finding a real job. I find no evidence of any such effects.

All the findings here must be considered tentative, as the analysis is exploratory by nature. There are important potential variables that have not yet been incorporated into the analysis, such as household type, activities of partners, home ownership status and assets, and the specification of the models could be further developed. Much work needs to be done before we can attempt to grapple with the issues of dealing with benefit levels and replacement rates. The distribution of unemployment within households also needs to be considered, rather than treating the sample as random individuals.

The null finding with respect to a clear relationship between time in unemployment and wellbeing needs to be further investigated. Once longitudinal data is available, a promising starting point will be to relate measures of mental health during unemployment to those by the same individuals in different labour market states – such as in their previous jobs. Comparisons between the unemployed and those in employment could be enriched with the current data by distinguish further sub-categories of employment, particularly part-time versus full-time and low-wage versus high-wage different. Finally, declining job search intensity has arisen a likely candidate as a contributor to negative duration dependence in unemployment. The next stage in this line of investigation will be to relate parameters of the job search model to employment outcomes observed in the HILDA Wave 2 data.

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