# Local Underemployment and the Discouraged Worker Effect

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**Summary.** The effect of poor local labour market opportunities on occupational achievement is an important aspect of the spatial mismatch hypothesis. Much of the research has concentrated on the direct link between geographical access to jobs and employment outcomes. In contrast, little attention has been given to the discouraging effect of poor chances on job search activities. The discouraged worker effect is defined as the decision to refrain from job search as a result of poor chances on the labour market. Discouragement effects can arise from a lack of individual qualifications, from discrimination in the labour market or from a high local level of underemployment. The empirical findings of this paper, based on the Netherlands Labour Force Surveys 1994–97, show that discouragement can enter the job search process both at the stage of deciding to enter the labour force and at the stage of deciding to engage actively in a job search. Gender differentials in discouragement are revealed in the process of self-selection into the labour force. Poor labour market chances lead to less activity in both off-the-job and on-the-job search, indicating a role of discouragement in the spatial mismatch. Individual qualifications and ascribed characteristics turn out to be more decisive than the local level of underemployment.

## 1. Introduction

Even though Kain's 'spatial mismatch hypothesis' (Kain, 1968) was

> originally coined to describe a broad set of geographical barriers to employment for African-American inner city residents (Preston and McLafferty, 1999, p. 388)

it has also stimulated more general research on the effect of poor job access on occupational achievement. This research helps to understand the variety of mechanisms that underlie the original hypothesis. Research in the 1990s has shown major advancement in three areas. The first is uncovering selection bias in studies aimed at estimating the commuting tolerance of the unemployed (Cooke and Ross, 1998). The second is the widening of the issue to encompass not only race but also gender (Preston and McLafferty, 1999). The third is the detailed measurement of geographical access to appropriate jobs using GIS, linking this access to the level of occupational achievement (Hanson *et al.*, 1997; Ong and Blumenberg, 1998; van Ham *et al.*, 2001).

Several empirical studies have focused on the influence of spatial restrictions on employment rates (for example, Ong and Blu-

menberg, 1998; Immergluck, 1998) and gender differences in labour participation (for example, Hanson and Pratt, 1988, 1990, 1991). However, no direct empirical evidence has been found of a relationship between spatial restrictions and job search. Yet this relation is crucial, as job search is a prerequisite for labour market participation and career advancement. The jobless search to escape unemployment and those already in a job search to find a better one (Mortensen, 1986). The relationship between poor chances in the labour market and the intensity of job search has been expressed in the discouraged worker hypothesis (Fisher and Nijkamp, 1987). The hypothesis states that people with poor labour market expectations become discouraged in their job search and leave or fail to enter the labour force, because the probability of finding a suitable job after a certain period of time is low.

Poor labour market chances can result from individual characteristics, from discrimination in the labour market, and from a high level of local underemployment, which indicates a mismatch between demand and supply on the local labour market (Simpson, 1992). Evidence from studies using US data (Parsons, 1991; Keith and McWilliams, 1999) and British data (van Ophem, 1991) indicates that women are less likely than men to be engaged in job search. Women are more spatially restricted than men (Hanson and Pratt, 1988), so gender differences in search behaviour may be explained in part by gender differences in the discouraged worker effect. In general, discouragement can be regarded as an extra mechanism that hampers the occupational achievement of groups with poor chances on the labour market, like Kain's inner-city African-American residents, and research on discouragement might therefore contribute to a more general understanding of spatial mismatches.

The aim of this paper is to find empirical evidence for the discouraged worker hypothesis by looking at direct evidence of job search activity. The main issue is the extent to which poor labour market chances have a discouraging effect on the probability of being engaged in job search. Individual characteristics (either real or ascribed) and the local level of underemployment are both considered potential sources of discouragement. We show that discouragement can enter the job search process at two different stages. The first stage concerns the decision to participate in the labour market. At this stage, people select themselves into or out of the active labour force. This selection clearly has an effect on their chances of employment, as the potentially less successful will refrain from participation more often. The second stage is the decision to engage actively in job search, either on or off the job, once one is in the active labour force. In this second stage, selection effects are expected, as the discouraged worker hypothesis stipulates that low chances of being unemployed will have a negative effect on the search intensity.

The remainder of this paper is organised in four parts. Section 2 describes a theoretical framework within which (gender-related) discouragement effects in the various stages of the search process can be understood. Section 3 introduces the data and methodology. The method consists of a series of three logistic regression models which are used to estimate: the chances of being in the active labour force; the chances of being unemployed, given the fact that people are participating on the labour market; the chances of being in search of a job dependent on whether one is employed. Section 4 reports the results of the empirical validation of the models. Selection effects are measured, using the two-step Heckman procedure, and also given a substantive interpretation in terms of discouragement. The final section comprises a summary and a discussion of the implications.

## 2. Job Search: Theory and Background

To explain job search and the influence of local underemployment on job search, we use insights from various theoretical points of view. We commence with job search theory and human capital theory. Individual and household restrictions are considered, paying

special attention to racial and gender differences. Finally, job search is placed in a spatial context and the discouraged worker effect is worked out in more detail.

## 2.1 Job Search Theory

Since the seminal papers of Stigler (1961, 1962), job search theory has conclusively become one of the main theoretical and empirical tools for understanding the working of the labour market. In the past four decades, labour economists have produced an extensive body of research related to job search theory (Lippman and McCall, 1976; Kiefer and Neumann, 1989; Devine and Kiefer, 1991). In the basic sequential job search model, individuals choose a reservation wage; this is the lowest wage level at which they would be willing to accept a job. A job offer would only be accepted if the wage offer were at least as high as the reservation wage. The arrival rate of job offers depends on an individual's search intensity; this in turn depends on the potential gains of the search (see Mortensen, 1986). By varying search intensity, individuals can influence the search outcome. If an offer is accepted, a worker may continue to search on-the-job until a better job is found. Job search theory is based on the idea that individuals maximise lifetime utility by moving through different states; the theory is explicitly dynamic. Over their lifetime, people adjust their reservation wage. They increase their job search intensity when they are underemployed–that is, when their present income falls under their reservation wage.

## 2.2 Human Capital and Underemployment

According to the human capital theory (Becker, 1962), people invest in productivity-enhancing skills and strive to maximise the utility of this accumulated capital. Human capital accumulates over a lifetime in the form of (formal) education and working experience. When, given past investments in human capital, the labour market position of an individual is sub-optimal this leads to job search; people search in order to avoid underemployment. For unemployed people, there are no returns on previous investments in human capital. The higher the level to which an unemployed person has been educated, the greater is the loss of income, so the more intensive is the job search. For the employed, the effect of human capital on job search cannot be seen independently from the level of their present job. The human capital of an employed person is best utilised when that person's job level and education level are in keeping. Workers therefore search more intensively when the educational requirements of their job are lower than their level of education (see Simpson, 1992). On the basis of the foregoing, it can be hypothesised that the probability of being engaged in an off-the-job search increases with educational level. It is further expected that, for a given level of education, the probability of being engaged in on-the-job search decreases with the level of the job.

In addition to job level, other job characteristics can also indicate that a worker's present job is sub-optimal, given past investments in human capital. According to Blau (1991), the number of hours worked per week is an important determinant of on-the-job search, because the returns on investments in human capital are maximised when a worker is employed full-time. The returns on previous investments in human capital are best assured in a secure job, so job security also plays an important part in job search (van Ophem, 1991). Jobs with a permanent employment contract and regular working hours offer this security. It is therefore to be expected that the probability of being engaged in job search increases when a person is employed part-time, works irregular hours or does not have an employment contract.

Most job mobility occurs in the first decade of work experience (Topel and Ward, 1992). Job shopping enables individuals to try out several jobs to determine their comparative advantage (Johnson, 1978); find higher-quality job matches (Jovanovic, 1979); and achieve better pay (Parsons, 1973; Burdett, 1978). People accumulate hu-

man capital with age through their work experience; their human capital becomes more specific. The costs of a job change are considerable when a worker with accumulated specific human capital moves to a job where these specific skills cannot be utilised. Furthermore, the pay-off period for search and job change costs becomes shorter as age increases. The probability of being engaged in job search is therefore expected to decrease with age.

## 2.3 Household Situation and Gender

The labour force participation of women is much lower than that of men. Women are also less often engaged in job search than men (Keith and McWilliams, 1999). Men traditionally have a full-time job and only a small proportion of the male labour force would voluntarily step out of the labour market. In contrast, many women seem to have other priorities than paid work. For a woman to stay outside the active labour force and become a full-time housewife is an acceptable alternative, especially when there are young children in the household. Making such a choice is inconsistent with the assumption that *all* individuals maximise the utility of their accumulated human capital. The new home economics theory (Becker, 1976, 1991) offers a theoretical framework that resolves this inconsistency. According to this theory, the labour participation decision of a mother is purely financial and depends on her earning capacity. If a mother's earning capacity is low, she will decide to become a full-time housewife. Mothers who have a high earning capacity may decide to participate in the labour market and contract-out part of the domestic workload.

According to Hanson and Pratt (1990; Pratt and Hanson, 1991) neo-classical theory pays insufficient attention to the part played by constraints in the explanation of female labour participation. Although female labour participation has risen spectacularly in the past few decades, many households are still traditional in the sense that women undertake most of the household and childcare respon-

sibilities. Many women are placed outside the labour market as a result, because of their domestic responsibilities and restricted access to childcare facilities (Bowlby, 1990). Restrictions also cause women to prefer part-time jobs, because these enable them to combine domestic work with paid employment.

We deduce from the above that, even when women decide to participate in the labour market, the domestic workload in combination with the presence of young children may restrict the opportunities of searching for a suitable job. We expect women to participate less in the labour market than men, and for women who do participate to be less frequently engaged in job search than men. We further expect the probability of women being engaged in job search to decrease if young children are present in the household and the effect on job search of working part-time to be less strong for women than for men.

## 2.4 Spatial Restrictions and Discouragement

Labour economists traditionally look at spatial restrictions in terms of the monetary costs of migration and commuting. Commuting costs lead, for example, to adjustment of the reservation wage–the minimum wage a worker is willing to accept for a job at a certain location, given his or her location of residence. Therefore job search intensity rises significantly with rising commuting time (van Ommeren, 1996).

Spatial restrictions are, however, more than just the costs of covering distance. For the majority of the workforce, the set of job opportunities that is actually available or seriously considered is highly constrained spatially (Hanson and Pratt, 1992). Spatial restrictions influence the arrival rate of suitable job opportunities. The quantity and quality of jobs within one's job search area depend on both its location and its size (see also Simpson, 1992). For most people, the location of their job search area is fixed in the space around their current residence. During their lifetime, people build up location-specific capital at their current residence

(DaVanzo, 1981)—for example, contacts with family and friends upon which they rely for social support. A residential move may engender considerable costs, because of the loss of location-specific capital (Hey and McKenna, 1979; see also Sjaastad, 1962). In addition, in households where both partners are engaged in paid work, a residential move may lead to job loss and thereby to loss of income for one of them (Mincer, 1978). As a consequence, most people only search for jobs in the vicinity that would not necessitate a residential move. The size of the job search area is therefore determined for most people by their commuting tolerance—the time they are willing to spend on commuting.

Apart from the coupling constraints described above, authority constraints can also impose restrictions on job search (see Hägerstrand, 1970). For the migrant population, racial discrimination in the labour market may severely hamper access to labour opportunities. As a result, people become more dependent on ethnic networks that provide more localised forms of employment. We therefore expect that migrants and their offspring have lower chances of finding employment.

Spatial restrictions may lead people to become discouraged in their search for jobs. According to the discouraged worker hypothesis, people with a small chance of finding a suitable job may become discouraged in their job search and leave or fail to enter the labour force because the probability of finding a suitable job after a reasonable period of time is too low (Fisher and Nijkamp, 1987). In other words: if, given the expected returns of search, the costs of job search are too high people may give up searching. Poor chances in the labour market may result from a high level of underemployment in one's job search area, which would indicate a local mismatch between demand and supply (Simpson, 1992). Poor labour market chances may also result from individual characteristics, either real or ascribed. For example, a 52-year-old man with a low level of education and little work experience may become discouraged in his job search, be-

cause past attempts to find a job were fruitless. This effect might be exacerbated if the person stems from the migrant population. Discouragement may be intensified when other men with the same characteristics are also seen to be unemployed.

Discouragement is most obvious when a person states that he or she wants to work, but does not employ any job search activities. However, discouragement might also occur in the decision to participate in the labour market. When people state that they do not want to work, the underlying reason can still be discouragement. Consider, for example, a woman with a child who is looking for a part-time job. If she cannot find a suitable job close to her home, she may decide not to enter the labour market and to become a full-time housewife instead. This phenomenon can be understood with the social-psychological theory of cognitive dissonance (Festinger, 1957; for a geographical application of the theory, see Adams, 1973). The woman in our example has committed herself to being active in the labour market. When faced with information that is discordant with that commitment (she does not succeed in getting the job she wants because of the high local level of underemployment), she can reduce the dissonance by changing her commitment. Becoming a full-time housewife leads to a greater cognitive consistency.

Research shows that men and women differ in their commuting tolerance, so their job search areas differ in size: men will tolerate longer commuting times than women (Madden, 1981; Gordon et al., 1989; Johnston-Anumonwo, 1992). Women with children have been shown to be particularly averse to long commuting times (Rouwendal, 1999). Compared with men, women are more likely to have to cope with severe day-to-day space and time constraints dictated by their domestic workload (Hanson and Pratt, 1991). We therefore expect a high local level of underemployment to discourage women in particular. We further hypothesise that women in regions with a high local level of underemployment, state that they do not want to work

more often than women in more favourable labour markets.

The rationale of discouragement can be summarised in three statements. First, discouragement can arise from two sources: a lack of individual qualifications or ascribed negative characteristics at the micro level, and a lack of job offers at the local or regional level. We expect an extra effect of discouragement among the migrant population due to their extra-poor chances in the labour market and their residential location in areas with a high level of underemployment. Secondly, discouragement can enter the job search process at two different stages: the stage of deciding to enter the labour force (avoid underemployment by choosing not to work), and the stage of deciding to engage actively in job search (become resigned to underemployment and stop searching). Thirdly, the choice of strategy not to enter the labour force or to acquiesce in underemployment can be expected to be gender-related. If the chances of employment are low, women choose more often than men not to enter the labour force. To some extent, this option is triggered by the earning capacity of the partner. If this were the only factor, one might expect that people whose partners had high earning capacity would participate less, irrespective of gender. However, since it is less socially acceptable for men not to work, gender differentials are bound to occur.

## 3. Data and Methodology

### 3.1 Method

In a methodological sense, the second statement above—that discouragement can enter the job search process at two stages—is far-reaching. If indeed some categories of people refrain from entering the labour force altogether as a result of discouragement, the outcomes of an analysis of whether people search or not will be biased. The substantive argument is that the category of people not in employment consists of two sub-groups: those who are unemployed and will therefore search hard; those who have decided not to work and will therefore not search at all. In statistical analysis, this leads to selection bias. People who decide not to work select themselves out of the population at risk of job search.

To deal with these effects, we decided to split the analyses into three steps (Figure 1). The first is an analysis of participation in the labour market among the potential labour force. In this analysis, we examined the extent to which the local level of underemployment influences participation. Should it be influenced, we would have an indication of discouragement in the participation decision (that is, in wanting a job apart from deciding to search). The dependent variable indicates whether (1) or not (0) a respondent is in the active labour force. Respondents in the active labour force either have a job of more than 12 hours a week (the employed labour force), or state they would like to have such a job (the unemployed labour force).

In the second analysis, the probability of being in the unemployed labour force was estimated for those in the active labour force. The dependent variable indicates whether (1) or not (0) a respondent is unemployed. The function of this analysis was to produce a variable predicting the probability of being unemployed from the independent variables, including ethnic origin, in the model. This variable was used in the search analyses to test whether having a poor chance of finding a job leads to discouragement in searching for one.

The third analysis is the analysis of job search. The dependent variable indicates whether (1) or not (0) the respondents had searched for work in the four weeks preceding the interview among those in the employed and unemployed labour force—those who are either working or state that they would like to work. In this analysis, we excluded those people who did not want to work at all (and so by definition were not engaged in job search). So this analysis is of discouragement in searching among those who have decided to participate on the labour market. We wish to include the job characteristics of the employed labour population,
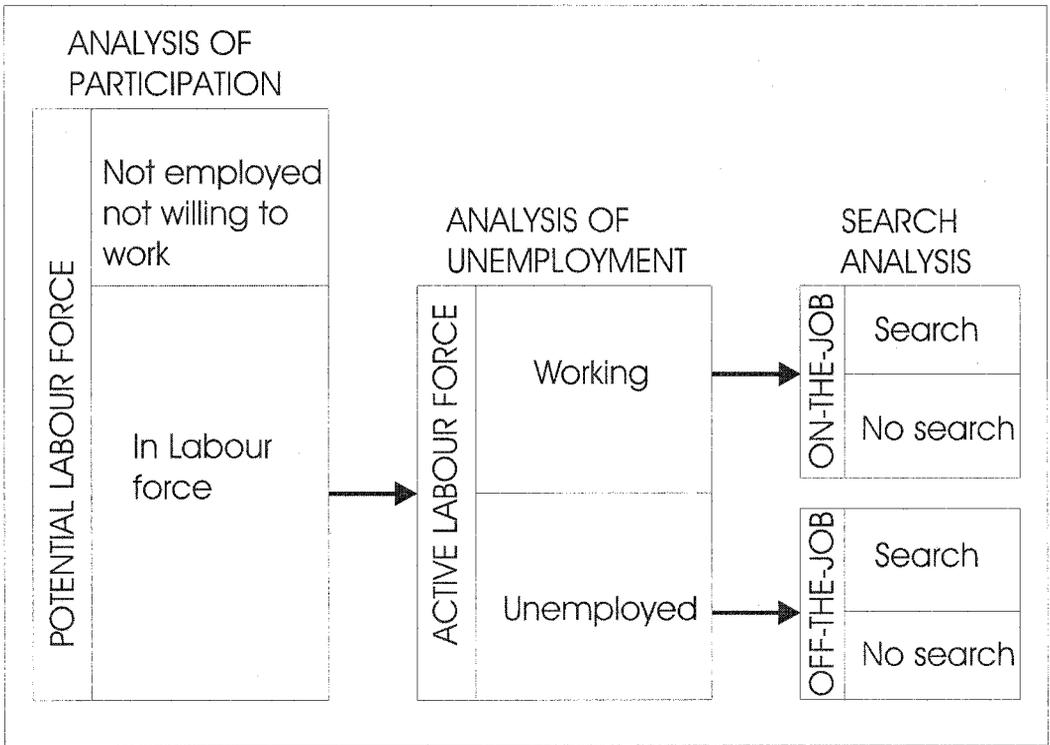
**Figure 1.** The three analyses.

so the analyses for on-the-job and off-the-job search have been separated.

In all three analyses, the dependent variable is binary. We have therefore used logistic regression models.

If discouragement enters the decision to participate, then the active labour force becomes a selective category. Those with a low chance of employment, as a result of personal characteristics or a lack of job offers, will be underrepresented. To correct for this selectivity, we have used Heckman's two-step procedure (Heckman, 1979), by including a correction factor Lambda-1 in the analysis of unemployment. In its transformed form, Lambda-1 represents the predicted values of participation from the first model and ranges from 0 to infinity. The higher the predicted probability of participation, the lower is Lambda-1. Two conclusions can be inferred from the coefficient of Lambda-1 in the unemployment model. If the coefficient is significant, then it is evident that

(self)selection exists. If the coefficient is positive, then it is clear that people with a small predicted probability of participating have a high chance of being unemployed. In other words, a category of people might have been indicated which has chosen not to participate, because their chances of unemployment are high: they have been discouraged.

The predicted values of the second model represent the chances of unemployment on the basis of the personal characteristics included in the model. These values enter the analyses of the search in step three in their transformed form Lambda-2. Lambda-2 does not just serve as a correction factor; it also measures an individual's chances in the labour market. Lambda-2 can also range from 0 to infinity; the higher the predicted probability of being unemployed in model 2, the lower lambda-2 will be. In the search analyses, we expect respondents with poor chances in the labour market to be discouraged in job search. The coefficient for

Lambda-2 is therefore expected to be posi-
tive: respondents with a low predicted proba-
bility of being unemployed are expected to
be more likely to search than respondents
with a high probability of being unemployed.

An important condition for the application
of the two-stage Heckman procedure is that
the model is sufficiently identified in order to
avoid multicolinearity and unstable par-
ameter estimates. The first, second and third
analyses therefore have slightly different sets
of independent variables. The ethnicity vari-
able has been included in the second step, the
analysis of unemployment, as its effect was
most marked in this step.

### 3.2 Data and Variables

The data used in this paper were derived
from Dutch Labour Force Surveys conducted
in 1994, 1995, 1996 and 1997 by Statistics
Netherlands. The Labour Force Survey is
representative of the Netherlands population
aged 15 and above and not living in an
institution. The data-set includes detailed in-
formation concerning individual and house-
hold characteristics such as level of
education, number of children, job character-
istics, partner characteristics and detailed in-
formation on the workplace and location of
residence. Further, the data-set includes a
direct question regarding job search. Respon-
dents were asked, "Have you undertaken any
activity to find a(nother) job in the last four
weeks?". Merely looking at job advertise-
ments in the newspaper could count as search
activity.

The analyses are restricted to respondents
aged between 15 and 54 years excluding
students, the armed services, the self-em-
ployed and the disabled. The potential labour
force in the data-set amounts to 143 930 men
and 156 196 women. The unemployed labour
force consists of 16 366 men and 30 490
women, while the employed labour force
consists of 125 202 men and 79 094 women.

In the analysis of participation, 8 indepen-
dent variables have been included. Level of
education is in 5 categories: primary edu-
cation; lower-level secondary education

(vbo, mavo); upper-level secondary edu-
cation (mbo, havo, vwo); higher vocational
education (hbo); and university. Age is in 4
categories: younger than 25; 25–34 years;
35–44 years; and 45–54 years. A dummy has
been used which indicates whether (1) or not
(0) there is a child younger than 5 years old
present.

Four variables measure the characteristics
of the partner. A dummy indicates whether
(1) or not (0) the respondent has a partner.
Another dummy indicates whether (1) or not
(0) the partner works. For the respondents
without a partner, the average of the respon-
dents with a partner is substituted for this
dummy. Because the model contains a vari-
able indicating whether a partner is present,
this substitution of the means leads to un-
biased coefficients of the 'partner works'
dummy for those with a working partner
(compare Cohen and Cohen, 1975, ch. 7).
The educational level of the partner is mea-
sured in five categories. Substitution of the
means is used to deal with respondents with-
out a partner. The job level of the partner is
allotted to one of the five levels of the Stan-
dard Job Classification (SBC–1992) of
Statistics Netherlands: elementary; low; mid-
dle: high; academic. The substitution of
means method has again been used to deal
with respondents without a partner, or with-
out a working partner.

Local underemployment was calculated as
a percentage of the local potential labour
force, using the 1994–97 Labour Force Sur-
veys. Being underemployed is defined as
having no job at all, having a job of less than
12 hours a week or having a job whose level
is too low with respect to the educational
level of the respondent. With the GIS exten-
sion FLOWMAP (de Jong and Floor, 1993;
van Ham *et al.*, 2001), we have calculated a
measure of underemployment on the local
labour market for every respondent in the
data-set. The starting-point was a very low
spatial level; the almost 4000 4-digit post-
code areas. This is the finest measurement of
residential locations in our data-set. For ev-
ery postcode, we calculated the percentage of
underemployment in an area that could be

reached within 30 minutes by car. Since in the Netherlands 80 per cent of the working population travels less than 30 minutes per single journey to work, this was thought to be a reasonable approach to the local labour markets. The local percentage of underemployment ranges from 41 to 54 per cent of the potential labour force. Two areas stand out in having above-average levels of underemployment: the inner-city neighbourhoods of the two largest cities (Amsterdam and Rotterdam) and the more peripheral rural areas. Below-average underemployment is found in the suburban areas in between the cities.

In the analysis of unemployment, seven independent variables have been included. Level of education and age are measured in the same way as in the first analysis. Type of household is categorised as: single; couple with unemployed partner; couple with working partner; and others. A dummy indicates whether (1) or not (0) a respondent is a migrant, or a descendant from a migrant. A dummy indicates whether (1) or not (0) the respondent left school in the year before the interview. The year of interview is indicated in four categories: 1994; 1995; 1996; 1997. Lambda-1 is a continuous variable ranging from 0 to infinity.

In the off-the-job search analyses, six independent variables are included. Level of education, age and local underemployment are measured in the same way as before. Working experience is measured in a two-category variable, indicating whether (1) or not (0) respondents have ever had a job of more than 12 hours a week. The type of household is categorised as: single unemployed; unemployed with working partner; both partners unemployed; others. The control factor Lambda-2 is a continuous variable ranging from 0 to infinity.

In the on-the-job search analyses, the same variables as in the off-the-job search analyses are included, together with the presence of children and some additional job characteristics. The presence of children is categorised as: no children; youngest child under 6 years old; youngest child between 6 and 12 years old; and youngest child between 12 and 17 years old. Hours worked per week are in four categories: 12–20 hours; 21–35 hours; 36–40 hours; and more than 40 hours a week. Commuting time is measured in five categories: 0–30 minutes; 31–45 minutes; 46–60 minutes; more than 60 minutes; unknown. Regularity of working times has been reduced to a two-category variable, indicating whether (1) or not (0) the respondents have irregular working times. Job security has also been reduced to a two-category variable, indicating whether (1) or not (0) respondents have a permanent employment contract.

## 4. Results

As expected, men have a higher probability of participating in the labour market than women. From our data, we find that 98 per cent of the male potential labour force either have a job or would like a job of at least 12 hours a week. In contrast, only 70 per cent of the female potential labour force is in the active labour force. As expected, men have a higher probability of being engaged in job search than women: from the unemployed labour force, 73 per cent of the male respondents compared with only 52 per cent of the female respondents are engaged in job search. For on-the-job search there are no gender differences; 10 per cent of those in the employed labour force are engaged in job search.

### 4.1 Analysis of Participation

Table 1 gives the results of the analysis of participation in the active labour force. For both men and women, the probability of being in the active labour force increases with level of education and decreases with age. Tests showed only a slight effect of ethnicity on participation. The variable is not included in the model to avoid multicollinearity in the second step.

Having a child under the age of 5 has a significant negative effect on the probability of being in the active labour force. This was as expected for women, but the fact that there

**Table 1.** Logistic regression of being in the active labour force, by gender

| | Men | | | Women | | |
|---|---|---|---|---|---|---|
| | *B* | Standard error | Exp(*B*) | *B* | Standard error | Exp(*B*) |
| *Education* | | | | | | |
| Primary | 0 | | 1 | 0 | | 1 |
| Lower secondary | 0.800*** | 0.056 | 2.226 | 0.433*** | 0.019 | 1.542 |
| Upper secondary | 1.274*** | 0.056 | 3.573 | 1.129*** | 0.019 | 3.090 |
| High vocational | 1.585*** | 0.085 | 4.878 | 2.005*** | 0.028 | 7.428 |
| University | 1.945*** | 0.126 | 6.995 | 2.829*** | 0.059 | 16.917 |
| *Age (years)* | | | | | | |
| < 25 | 0 | | 1 | 0 | | 1 |
| 25–34 | − 0.246*** | 0.081 | 0.782 | − 0.718*** | 0.031 | 0.488 |
| 35–44 | − 0.809*** | 0.080 | 0.445 | − 1.384*** | 0.030 | 0.251 |
| 45–54 | − 1.593*** | 0.080 | 0.203 | − 2.267*** | 0.031 | 0.104 |
| *Child under 5 years* | | | | | | |
| No | 0 | | 1 | 0 | | 1 |
| Yes | − 0.277*** | 0.066 | 0.758 | − 1.435*** | 0.017 | 0.238 |
| *Partner* | | | | | | |
| No | 0 | | 1 | 0 | | 1 |
| Yes | 1.225*** | 0.051 | 3.404 | − 0.840*** | 0.019 | 0.432 |
| *Partner works* | | | | | | |
| No | 0 | | 1 | 0 | | 1 |
| Yes | − 0.240*** | 0.061 | 0.787 | 0.047** | 0.019 | 1.048 |
| *Educational level of partner* | | | | | | |
| Primary | 0 | | 1 | 0 | | 1 |
| Lower secondary | 0.634*** | 0.074 | 1.885 | 0.118*** | 0.023 | 1.125 |
| Upper secondary | 0.670*** | 0.080 | 1.953 | 0.302*** | 0.023 | 1.352 |
| High vocational | 0.500*** | 0.127 | 1.643 | 0.382*** | 0.031 | 1.466 |
| University | 0.019 | 0.211 | 1.020 | 0.282*** | 0.043 | 1.326 |
| *Job level of partner* | | | | | | |
| Elementary | 0 | | 1 | 0 | | 1 |
| Low | 0.058 | 0.133 | 1.060 | − 0.224*** | 0.035 | 0.799 |
| Middle | − 0.371*** | 0.130 | 0.690 | − 0.230*** | 0.034 | 0.795 |
| High | − 0.577*** | 0.161 | 0.562 | − 0.287*** | 0.039 | 0.751 |
| Academic | − 0.429* | 0.259 | 0.652 | − 0.486*** | 0.048 | 0.615 |
| *Local underemployment (percentage)* | − 0.008 | 0.010 | 0.992 | − 0.027*** | 0.003 | 0.973 |
| Constant | 3.413*** | 0.472 | | 3.674*** | 0.143 | |
| Initial-2 log likelihood | 24 590 | | | 190 409 | | |
| Model-2 log likelihood | 22 561 | | | 156 406 | | |
| Improvement | 2 029, df = 19, p = 0.00 | | | 34 003, df = 19, p = 0.00 | | |

*** indicates significant at the 1 per cent level; ** indicates significant at the 5 per cent level; * indicates significant at the 10 per cent level.

is also an effect for men was not. The effect is much stronger for women than for men.

Four variables were entered into the model to indicate a partner's earning capacity: hav-ing a partner, whether the partner works, the partner's educational level, and job level. For women, having a partner has a negative ef-fect and this is exacerbated if the partner's

job level is high. The educational level of the partner yields a u-shaped effect. People whose partner has a medium level of education have a higher probability of participating than those with a partner whose level of education is either high or low. This indicates that the effect of being a two-wage-earner couple is most prominent among couples with average earning capacity. For men, having a partner has a positive effect on participation, which is offset to some extent if the partner works and in particular if the level of the partner's job is high.

To test the hypothesis on discouragement in the participation decision, the local percentage of underemployment is included as an independent variable. For women, the results are as expected: the local level of underemployment has a negative effect on the participation decision of women. Women living in areas with a high local level of underemployment state that they do not want to work more often than women in more favourable labour markets. For men there is no effect. The results show that women are indeed more easily discouraged than men by poor local labour market conditions.

The analysis of participation results in a correction factor known as Lambda-1 which is used as an independent variable in the second model to control for selection effects. The results from the analyses of participation show the plausibility of the effect of discouragement on the decision to refrain from working. Personal characteristics that indicate poor chances on the labour market (low education, high age) and a lack of job offers in the local economy both have a negative impact on the decision to participate. It is shown, by entering the Lambda-1 score as an independent variable in the unemployment model, that non-participation is a way of avoiding unemployment (see next section).

## 4.2 Analysis of Unemployment

Table 2 presents the results of the analysis of unemployment among those in the active labour force. The main function of this second analysis is to construct Lambda-2, which measures an individual's chances in the labour market. Lambda-2 is used as an independent variable in the search analyses.

The likelihood of being unemployed is increased by having a low level of education, being a school leaver, an immigrant, the descendant of an immigrant or by living alone. The ethnicity variable in particular shows a striking effect that is more substantial than the educational variable. The poor chances in the labour market of the migrant population cannot be attributed to an overall skill-mismatch.

People interviewed in more recent years have a lower probability of being unemployed. This finding can be explained by the fact that, from the mid 1990s, the economy in the Netherlands has shown an upward tendency. For both men and women, Lambda-1 has a significant effect on the probability of being unemployed: this means that (self)selection exists. The fact that the parameter for Lambda-1 is positive indicates that people who stated that they wanted to work for at least 12 hours a week, but who had characteristics similar to those who have chosen not to participate, have a high probability of being unemployed. This means that there is a category of people who have used the decision not to participate as a means of avoiding unemployment: they have been discouraged.

## 4.3 Off-the-job Search

Table 3 presents the off-the-job search results by gender. The research population consists of unemployed respondents who stated that they would like to have a job for at least 12 hours a week.

*Men*. As expected, level of education has a positive effect for men on the probability of being engaged in off-the-job search. Work experience also has a positive effect on job search. Both findings confirm the idea that unemployed people have a higher probability of being engaged in job search as the level of human capital rises. With rising age, men are less likely to be engaged in job search. This

**Table 2.** Logistic regression of being unemployed, by gender

| | Men | | | Women | | |
|---|---|---|---|---|---|---|
| | $B$ | Standard error | Exp($B$) | $B$ | Standard error | Exp($B$) |
| *Education* | | | | | | |
| Primary | 0 | | 1 | 0 | | 1 |
| Lower secondary | −0.691*** | 0.034 | 0.501 | −0.183*** | 0.026 | 0.832 |
| Upper secondary | −0.980*** | 0.039 | 0.375 | −0.439*** | 0.028 | 0.645 |
| High vocational | −1.201*** | 0.048 | 0.301 | −0.627*** | 0.036 | 0.535 |
| University | −0.989*** | 0.054 | 0.372 | −0.630*** | 0.049 | 0.533 |
| *School leaver* | | | | | | |
| No | 0 | | 1 | 0 | | 1 |
| Yes | 0.960*** | 0.041 | 2.611 | 0.864*** | 0.040 | 2.373 |
| *Age (years)* | | | | | | |
| < 25 | 0 | | 1 | 0 | | 1 |
| 25–34 | 0.128*** | 0.034 | 1.136 | 0.116*** | 0.030 | 1.123 |
| 35–44 | 0.097** | 0.040 | 1.102 | 0.397*** | 0.031 | 1.487 |
| 45–54 | 0.044 | 0.050 | 1.045 | −0.068* | 0.036 | 0.935 |
| *Immigrant or descendant* | | | | | | |
| No | 0 | | 1 | 0 | | 1 |
| Yes | 1.425*** | 0.022 | 4.157 | 0.664*** | 0.022 | 1.943 |
| *Household situation* | | | | | | |
| Single | 0 | | 1 | 0 | | 1 |
| Couple, partner unemployed | −1.214*** | 0.033 | 0.297 | −0.552*** | 0.030 | 0.576 |
| Couple, partner employed | −1.562*** | 0.033 | 0.210 | −0.777*** | 0.021 | 0.460 |
| Other | −0.705*** | 0.032 | 0.494 | −0.864*** | 0.036 | 0.422 |
| *Year of interview* | | | | | | |
| 1994 | 0 | | 1 | 0 | | 1 |
| 1995 | −0.109*** | 0.024 | 0.896 | −0.067*** | 0.020 | 0.935 |
| 1996 | −0.219*** | 0.025 | 0.804 | −0.133*** | 0.020 | 0.876 |
| 1997 | −0.423*** | 0.026 | 0.655 | −0.284*** | 0.021 | 0.753 |
| Lambda-1 | 1.403*** | 0.407 | 4.066 | 1.672*** | 0.044 | 5.323 |
| Constant | −0.480*** | 0.060 | | −0.855*** | 0.040 | |
| Initial-2 log likelihood | 101 255 | | | 129 589 | | |
| Model-2 log likelihood | 88 688 | | | 118 849 | | |
| Improvement | 12 567, df = 16, p = 0.00 | | | 10 739, df = 16, p = 0.00 | | |

\*\*\* indicates significant at the 1 per cent level; \*\* indicates significant at the 5 per cent level; \* indicates significant at the 10 per cent level.

is also as we expected. The effect of household situation shows that unemployed men with a partner have a higher probability of being engaged in job search than single men.

It was expected that people living in areas with a high local level of underemployment would have the lowest probability of being engaged in job search. However, the results show that for men there is no significant effect of local underemployment on job search. To test whether poor labour market expectations resulting from individual characteristics have a discouraging effect on job search, Lambda-2 has been included in the search analysis. The higher the predicted probability of being unemployed, the lower was Lambda-2. As expected, the coefficient of Lambda-2 was positive and

**Table 3.** Logistic regression of off-the-job search, by gender

| | Men | | | Women | | |
|---|---|---|---|---|---|---|
| | $B$ | Standard error | Exp($B$) | $B$ | Standard error | Exp($B$) |
| *Education* | | | | | | |
| Primary | 0 | | 1 | 0 | | 1 |
| Lower secondary | 0.278*** | 0.054 | 1.320 | 0.112*** | 0.038 | 1.118 |
| Upper secondary | 0.553*** | 0.059 | 1.740 | 0.211*** | 0.046 | 1.235 |
| High vocational | 0.704*** | 0.083 | 2.022 | 0.346*** | 0.064 | 1.413 |
| University | 1.102*** | 0.098 | 3.011 | 0.805*** | 0.088 | 2.236 |
| *Working experience* | | | | | | |
| No | 0 | | 1 | 0 | | 1 |
| Yes | 0.397*** | 0.049 | 1.487 | 0.199*** | 0.036 | 1.220 |
| *Age (years)* | | | | | | |
| < 25 | 0 | | 1 | 0 | | 1 |
| 25–34 | − 0.309*** | 0.066 | 0.734 | − 0.431*** | 0.052 | 0.650 |
| 35–44 | − 0.636*** | 0.073 | 0.530 | − 0.538*** | 0.055 | 0.584 |
| 45–54 | − 0.810*** | 0.077 | 0.445 | − 1.790*** | 0.056 | 0.454 |
| *Household situation* | | | | | | |
| Single | 0 | | 1 | 0 | | 1 |
| Couple, partner employed | 0.130** | 0.077 | 1.139 | − 0.542*** | 0.032 | 0.582 |
| Couple, partner unemployed | 0.960** | 0.066 | 1.101 | − 0.551*** | 0.041 | 0.576 |
| Other | 0.161*** | 0.067 | 1.175 | 0.394*** | 0.075 | 1.483 |
| *Local underemployment (percentage)* | − 0.012 | 0.008 | 0.988 | − 0.005 | 0.006 | 1.005 |
| Lambda-2 | 0.265*** | 0.067 | 1.304 | 0.471*** | 0.070 | 1.602 |
| Constant | 0.882*** | 0.394 | | − 0.097 | 0.265 | |
| Initial-2 log likelihood | 19 021 | | | 42 206 | | |
| Model-2 log likelihood | 18 413 | | | 40 191 | | |
| Improvement | | 607, df = 13, p = 0.00 | | | 2 015, df = 13, p = 0.00 | |

*** indicates significant at the 1 per cent level; ** indicates significant at the 5 per cent level; * indicates significant at the 10 per cent level.

significant for men. This means that men with a high probability of being unemployed search less than men with a low probability of being unemployed. This finding indicates discouragement for unemployed men with poor chances in the labour market.

*Women*. For women, the effects of level of education, work experience and age were all found to be in the expected direction and correspond with the effects found for men. Women with a partner have a lower probability of being engaged in job search than single women. Some women apparently find that

having a partner makes it less necessary to search for a job.

The results show that, just as for men, there is no significant effect of local underemployment on job search for women. Apparently, local labour market conditions do not lead to discouragement in job search by the unemployed. Once people decide they want to participate in the labour market, they do not allow themselves to become discouraged by poor local labour market conditions. For women, the positive effect of Lambda-2 is also in line with the expected effect. Women with a high probability of being

unemployed search less than women with a low probability of being unemployed. Unemployed women with poor chances are likely to be discouraged in job search.

### 4.4 On-the-job Search

The logistic regression results for the on-the-job search model are presented in Table 4. The research population consists of employed respondents who work for at least 12 hours a week.

*Men.* Men with a higher level of education were more likely to be engaged in job search. This is in accordance with the expectations based on human capital theory. The probability of being engaged in job search decreased with age. Again, this is as expected because as age increases the pay-off period decreases for job search and job change costs. Men with a child between 0 and 5 years old search the most and men with children in the 12–17 age-group search the least. A possible explanation might be that men with young children feel more responsible for the family income and so search for better-paid jobs. The effect might also be an effect of the age of the men themselves. As the age of the children rises, so does the age of the parents and as people get older they search less frequently. The effect of household situations shows that men with a partner search less frequently than single men.

For men, the number of hours worked per week had a negative influence on job search. This is as expected; most men want a full-time job. After controlling for level of education, every higher job level reached led people to be less likely to search. This is according to what would be expected on the basis of the human capital theory. People whose job level is not known search the most. Many respondents in this category have not been asked for their job level, because they had short-term contracts; since a short-term contract offers little job security, people with an unknown job level are often engaged in job search. As expected, job search intensity increases with increasing

commuting time. The category 'commuting time unknown' consists mainly of respondents with short-term contracts. In contrast with what was expected, having irregular working hours was not found to have a positive effect on job search. But, as expected, men search more when they have little job security.

Again, the local percentage of underemployment and Lambda-2 have been included to test whether poor labour market expectations have a discouraging effect on the probability of being engaged in job search. As expected on the basis of the discouraged worker hypothesis, for men the local percentage of underemployment has a negative effect on on-the-job search. For men, Lambda-2 does not have a significant effect on job search; we did not find evidence for an effect of poor labour market expectations resulting from individual characteristics on on-the-job search by men.

*Women.* For women, the effects of level of education and age are in the expected direction and correspond with the effects found for men. For women, the effect of the presence of children was as expected. Employed women without children search the most. When they have children, the probability of being engaged in job search increases with the increasing age of the youngest child. Being single has a positive effect on job search.

As expected, for women the effect of hours worked per week is much smaller than is the case for men. Women more often prefer small (part-time) jobs, because they often have to combine a paid job with domestic work. The effects of job level and commuting time are as expected and correspond with the effects found for men. However, the effect of commuting time is somewhat stronger on women than on men. This confirms the idea that women are more sensitive to spatial restrictions than men. Surprisingly, women with irregular working hours search less frequently than women with regular working hours. This is contrary to what was expected, but may be explained by the

**Table 4.** Logistic regression of on-the-job search, by gender

| | Men | | | Women | | |
|---|---|---|---|---|---|---|
| | *B* | Standard error | Exp(*B*) | *B* | Standard error | Exp(*B*) |
| *Education* | | | | | | |
| Primary | 0 | | 1 | 0 | | 1 |
| Lower secondary | 0.234*** | 0.051 | 1.263 | 0.095 | 0.065 | 1.100 |
| Upper secondary | 0.680*** | 0.053 | 1.974 | 0.424*** | 0.072 | 1.528 |
| High vocational | 1.097*** | 0.062 | 2.996 | 0.820*** | 0.087 | 2.270 |
| University | 1.215*** | 0.069 | 3.370 | 1.299*** | 0.100 | 3.664 |
| *Age (years)* | | | | | | |
| < 25 | 0 | | 1 | 0 | | 1 |
| 25–34 | − 0.051 | 0.038 | 0.951 | − 0.273*** | 0.038 | 0.761 |
| 35–44 | − 0.340*** | 0.042 | 0.712 | − 0.462*** | 0.051 | 0.630 |
| 45–54 | − 1.053*** | 0.048 | 0.349 | − 1.149*** | 0.056 | 0.317 |
| *Children under 18 years old* | | | | | | |
| No children | 0 | | 1 | 0 | | 1 |
| Youngest under 6 years | 0.101*** | 0.029 | 1.107 | − 0.332*** | 0.045 | 0.717 |
| Youngest 6–12 years | 0.043 | 0.036 | 1.044 | − 0.132*** | 0.044 | 0.877 |
| Youngest 13–17 years | − 0.138*** | 0.042 | 0.872 | − 0.041 | 0.046 | 0.960 |
| *Household situation* | | | | | | |
| Single | 0 | | 1 | 0 | | 1 |
| Couple, partner unemployed | − 0.342*** | 0.048 | 0.710 | − 0.441*** | 0.055 | 0.643 |
| Couple, partner employed | − 0.107** | 0.050 | 0.899 | − 0.622*** | 0.040 | 0.537 |
| Other | − 0.434*** | 0.047 | 0.648 | − 0.511*** | 0.058 | 0.600 |
| *Hours per week* | | | | | | |
| 13–20 | 0 | | 1 | 0 | | 1 |
| 21–35 | − 0.676*** | 0.061 | 0.509 | − 0.036 | 0.033 | 0.965 |
| 36–40 | − 0.869*** | 0.054 | 0.419 | − 0.291*** | 0.036 | 0.748 |
| > 40 | − 0.824*** | 0.066 | 0.439 | − 0.072 | 0.083 | 0.931 |
| *Job level* | | | | | | |
| Elementary | 0 | | 1 | 0 | | 1 |
| Low | − 0.341*** | 0.041 | 0.711 | − 0.266*** | 0.046 | 0.767 |
| Middle | − 0.435*** | 0.042 | 0.647 | − 0.586*** | 0.049 | 0.557 |
| High | − 0.596*** | 0.051 | 0.551 | − 0.775*** | 0.061 | 0.461 |
| Academic | − 0.701*** | 0.064 | 0.496 | − 0.879*** | 0.084 | 0.415 |
| Unknown | 0.077 | 0.057 | 1.080 | 0.111 | 0.067 | 1.118 |
| *Commuting time (minutes)* | | | | | | |
| 0–30 | 0 | | 1 | 0 | | 1 |
| 31–45 | 0.089** | 0.035 | 1.093 | 0.096** | 0.042 | 1.101 |
| 46–60 | 0.133*** | 0.031 | 1.142 | 0.152*** | 0.038 | 1.165 |
| > 61 | 0.305*** | 0.030 | 1.357 | 0.468*** | 0.037 | 1.597 |
| Unknown | 0.065** | 0.029 | 1.068 | 0.219*** | 0.039 | 1.244 |
| *Irregular hours* | | | | | | |
| No | 0 | | 1 | 0 | | 1 |
| Yes | 0.023 | 0.021 | 1.023 | − 0.098*** | 0.025 | 0.907 |
| *Permanent contract* | | | | | | |
| No | 0 | | 1 | 0 | | 1 |
| Yes | − 1.215*** | 0.031 | 0.297 | − 0.785*** | 0.032 | 0.456 |
| *Local underemployment (percentage)* | − 0.017*** | 0.005 | 0.983 | − 0.002 | 0.006 | 0.998 |
| Lambda-2 | − 0.032 | 0.053 | 0.968 | 0.331*** | 0.091 | 1.392 |
| Constant | − 0.572** | 0.238 | | − 1.762*** | 0.296 | |
| Initial-2 log likelihood | 77 779 | | | 51 919 | | |
| Model-2 log likelihood | 71 624 | | | 48 213 | | |
| Improvement | 6 155, df = 29, p = 0.00 | | | 3 705, df = 29, p = 0.00 | | |

\*\*\* indicates significant at the 1 per cent level; \*\* indicates significant at the 5 per cent level; \* indicates significant at the 10 per cent level.

fact that irregular working hours may be more convenient when domestic work and paid employment have to be combined. As for men, having a permanent employment contract has a negative influence on job search.

The local level of underemployment does not have an effect on job search for women. Apparently, poor local labour market conditions do not discourage women in their on-the-job search. However, the coefficient for Lambda-2 is positive and significant: the lower a woman's predicted probability of being unemployed, the higher her probability of being engaged in job search. In other words, women with poor chances in the labour market search less frequently than women with good chances in the labour market, possibly because of discouragement.

## 5. Summary and Discussion

In this contribution, we have elaborated the concept of the discouraged worker effect and reported our empirical testing. The discouraged worker effect has been defined as the decision to refrain from job search as a result of poor chances in the labour market. Two sources of discouragement were identified: a lack of individual qualifications or ascribed characteristics that make a worker less competitive in the job market; and a lack of suitable job offers resulting from the level of underemployment in the local economy. In elaborating the concept, we hypothesised that discouragement can enter the job search process at two stages. The first stage is the decision to participate in the labour force. We have tested the hypothesis that people in general and women in particular who have poor chances in the (regional) labour market more often refrain from participating. The second stage is the decision to become actively engaged in job search once one is active in the labour market.

In the empirical tests, we have used direct measures of participation and job search, using data from the Labour Force Surveys 1994–97. In this survey, people were asked whether or not they were willing to work for more than 12 hours per week. The category 'out of employment' could therefore be split into the group that did not participate and the unemployed. Both the unemployed and the employed were asked whether they had been active in job searching in the 4 weeks preceding the interview. Three models were specified: one for the probability of participating, another for the probability of unemployment given participation; a third for the probability of engaging in on-the-job or off-the-job search.

The results indicate the existence of a discouraged worker effect in the stage of deciding to participate. For both men and women, personal characteristics that indicate poor chances in the labour market were negatively related to the decision to participate in the labour force. Discouragement at this stage appeared to be gender-related. Not only were the effects of poor chances much stronger for women; they were also put off from participation in places with a high level of local underemployment. For men, the effect of local underemployment level was insignificant.

In the analysis of the chances of unemployment, a correction factor was entered to account for the selectivity of the group participating in the labour force. The substantive interpretation of this correction factor showed that people who refrain from participating would have had a high chance of being unemployed if they had put their labour on offer. Not participating is a strategy for avoiding unemployment chosen by women in particular.

The results of the discouragement effect in job search among those in the active labour force are slightly less convincing. For the unemployed, it could be shown that personal characteristics (low education, older age, lack of work experience) were negatively related to job search. Inclusion of the correction factor that indicates the overall chance of being unemployed showed that poor chances in the labour market have a strong impact on the intensity of job search. This conclusion is particularly relevant for the occupational achievement of migrants and

their descendants. As their chances of unemployment are much higher than those of the indigenous population with the same qualifications, the intensity of their job search is lower, further hampering social mobility of this population. No effect was found from the local level of underemployment.

For the employed, the overall probability of job search is much lower. Again, personal characteristics (including the level of the present job, job security and the number of hours worked) account for the major part of the differentiation in job search. Yet among men a high local level of underemployment also led to reduced search activity.

In general terms, we have found discouragement effects at both stages of the search process. The dominant source of discouragement is an individual's lack of qualifications or other personal and ascribed characteristics that reduce the chances in the labour market. We found mixed evidence of a discouragement effect arising from a lack of suitable job offers in the local economy. The decision by women to participate and the decision of on-the-job search by men are negatively influenced by a high local level of underemployment. Apparently, women outside the labour force and working men have something in common that makes them more likely than other categories to be discouraged by local labour market conditions. It may be that both groups have an alternative to search and can 'afford' to be discouraged. For women, being a full-time housewife is socially accepted, especially when (young) children are present. Men in the employed labour force also have a reasonable alternative to search. They already have a job so they can stay put until the labour market becomes more favourable.

## 5.1 Implications and Limitations

The finding that local levels of underemployment only contribute incidentally to the discouraged worker effect could be a particular characteristic of the Netherlands. Even though both peripheral rural areas and inner-city neighbourhoods have above-average levels of local underemployment, regional differences in economic performance and underemployment are low in this country. The findings might be radically different in other, larger countries. The reason why personal characteristics are more dominant might also be an effect of the rapidly decreasing levels of unemployment. In a tight labour market, there is a problem of the unemployed rather than of unemployment. The category of the unemployed is becoming increasingly selective. Only those people with really poor chances in the labour market remain unemployed in a growing economy. This selectivity in unemployment goes beyond a lack of educational achievement. Also, after controlling for formal education, the chances of the migrant population turned out to be exceptionally low. This indicates that ascribed characteristics may play a role, both through poor chances and through discouragement in reaching occupational achievement. It also indicates that the high level of local underemployment in the larger towns is more than just a 'skills-mismatch'.

Obviously, the poor results on the discouraging effect of the local economy could also arise from the limitations in our analyses. First, although we had the unique opportunity of using a direct question on job search, this is no guarantee that we had a sharp measurement of discouragement. Not all those who stated that they had not searched in the four weeks preceding the interview might have been discouraged. Some might have just returned from a holiday, or have been ill. Secondly, the way we measured local labour market conditions might not be the best approach. The optimal solution would be to construct a variable to indicate the number of vacancies in a certain area relative to the number of underemployed people in that area. Unfortunately, data on vacancies are hard to obtain, seldom available at a low spatial level and of questionable reliability. A third limitation of our analyses might be the way we measured discouragement by individual characteristics. With our data, we can only show that there is a statistical relationship between job search

and a high predicted probability of being unemployed. We have no idea of the extent to which people are really aware of their own poor chances in the labour market.

Given these possible shortcomings, future research could improve on the present effort by using data that overcome some of these limitations. The use of data collected for the purpose of research on job search might give better insights. However, such a data-set would have to be large enough to be able to incorporate variables on spatial differences in the local labour market situation. While quantitative research helps to gain more insight into the statistical relationship between job search and local labour market conditions, qualitative methods could help us to understand labour market behaviour in more detail. Questions could address why people do or do not search, how often they search and where they search. Such qualitative research could lead to a better understanding of the labour market behaviour of women, explain some of the current confounding findings and lead to new hypotheses.

We have, however, shown that future research should include the stage of deciding not to participate in the labour force at all. Poor chances affect the decision to participate and the people at risk of searching for a (better) job are a selective group.

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