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Changes in Female Labour Supply in the Netherlands 1989–1998: The Case of Married and Cohabiting Women

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Abstract. It is well-known that married and cohabiting women differ in labour supply. But we know very little about the causes of this difference. Is it due to differences in characteristics, like age, presence and ages of children, own net wage rate, and net income of the partner? Or is it a difference in behaviour that – even after controlling for variation in characteristics – is the basic cause? In this article we try to answer these questions for Dutch married and cohabiting women. We use data of national surveys by Statistics Netherlands for 1989 and 1998. This also allows us to investigate whether there have been important changes in the last decade. Because we are able to compare the results with those of an analogous analysis that two of the authors did on similar Dutch data for 1981 we are able to draw conclusions about changes that took place over the last twenty years. The results show that the massive growth in female labour force participation is especially due to the growth in participation by married women. A slight decrease in labour market participation of cohabiting women can be observed in the last decade. This seems to be the result of cohabitation becoming more normal, including cohabitation when there are young children in the household.

Key words: cohabitation, couples, female labour supply, The Netherlands

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Résumé. Les différences d'activité entre femmes mariées et cohabitantes sont bien connues mais on sait peu de choses sur les facteurs de ces différences. Celles-ci sont-elles dues à des caractéristiques différentes, comme l'âge, la présence d'enfants plus ou moins jeunes, leur propre niveau de salaire ou le revenu de leur partenaire? Ou bien les écarts tiennent-ils à des différences de comportement qui subsistent quand on contrôle les autres caractéristiques? Dans cet article, nous tentons de répondre à ces questions pour les femmes mariées et les cohabitantes aux Pays-Bas. Pour ce faire, nous utilisons les données de deux enquêtes nationales menées en 1989 et 1998. Celles-ci

nous permettent également d'explorer les changements qui ont pu se produire dans la dernière décennie. En comparant ces résultats avec ceux d'une analyse analogue menée en 1981 par deux des auteurs, il est possible d'étendre les conclusions aux changements qui ont pu s'opérer dans les 20 dernières années. On trouve ainsi que l'accroissement massif de la participation des femmes à la force de travail tient essentiellement à une participation accrue des femmes mariées. Dans la dernière décennie, on retrouve un léger recul de la participation des cohabitantes. Ceci peut être la conséquence de la banalisation de la cohabitation, avec la présence de plus en plus fréquente de jeunes enfants dans les foyers de cohabitants.

Mots-clés: cohabitation, couples, activité féminine, Pays-Bas

1. Introduction

In 1960 only 26 percent of the Dutch women in the age group 15 to 64 years participated in the labour market. This was very low compared to, e.g., France (47 percent), and Germany, the United Kingdom and Sweden (all about 50 percent). As is shown in Table I, almost forty years later the Dutch female labour market participation rate had increased tremendously. It was especially during the past two decades that this growth took place. But also in the other countries the female labour market participation increased. Overall, the Netherlands did catch up with France and Germany, but was still lagging behind e.g. the United Kingdom and Sweden. Also, it has to be kept in mind that in the Netherlands an exceptionally large proportion of the female labour force is working part-time. Especially the proportion of those on short hours (10 or less per week) is far above that in other countries: 17 percent compared to 3 percent in France, 7 percent in Germany, 9 percent in the United Kingdom, and 4 percent in Sweden (Plantenga and Hansen, 1999).

The originally low female labour market participation rate in the Netherlands proved to be the combined result of the then comparative affluence of the Netherlands (which allowed the Netherlands to have such a low rate) and the typically Dutch religious and political divide. That made it possible for middle class ideals about women's position in society to spread extensively among the working classes (Plantenga, 1993; Pott-Buter, 1993). The massive growth in female labour market participation during the past twenty years is almost completely due to the growth in women working part-time. On the one hand this is the result of the growing social acceptance of mothers working for pay. In 1965, 84 percent of the Dutch population objected to married women with school-aged children to work for pay outside the home; in 1980, 38 percent, and by 1997 this percentage had been fallen to 18 (Social and Cultural Planning Office, 1998, p. 141). The proportion of couples with children in which both parents work for pay increased from 17 percent in 1980 to 42 percent in 1997 (Jaarboek Emancipatie, 1999: 140). On the other hand, the strong growth in female labour market participation is partly the result of an explicit policy by the Dutch government of encouraging individualised working-

Table I. Female Labour force participation rates: female labour force as a percentage of the female population, 15–64

Year	Belgium	Denmark	France	Germany	Netherlands	Sweden	United Kingdom
1960	36	44	47	49	26	51	49
1971	40	59	49	49	30	61	51
1981	48	72	54	53	38	75	57
1990	52	78	57	56	53	81	65
1999	56	76	61	62	64	76	68

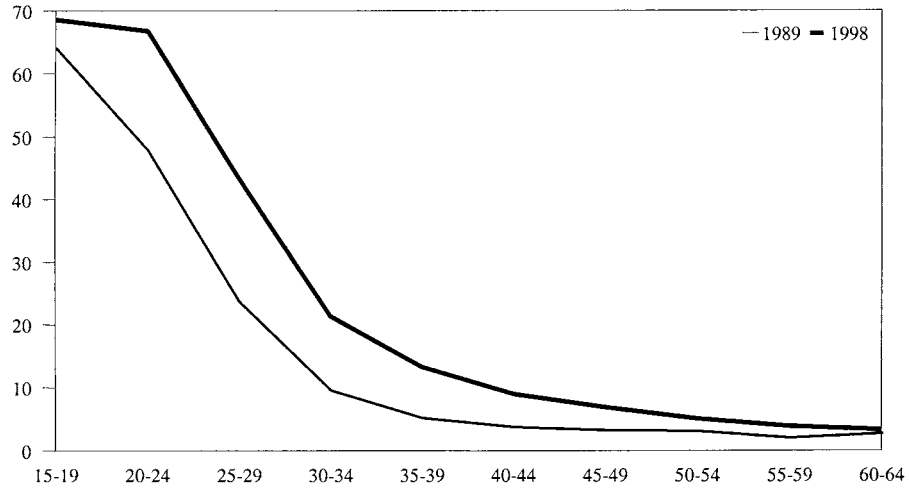
Source: 1960–1990: Pott-Buter (1993); 1998: OECD (2000, p. 205).

time arrangements because of the flexibility they offer both the employer and the employee (Plantenga and Hansen, 1999).

This increase in female labour market participation is seen as desirable from the viewpoint of equality as well as from the viewpoint of economic necessity (Social-Economic Council, 2000). The equality argument is related to effectuating an improved distribution of paid labour across men and women and, related to this, the realisation of economic independence for women. The argument of economic necessity is related to the present and, especially, the foreseen shortages in the labour market (Henkens et al., 2000).

Research into female labour supply virtually exclusively pays attention to the status of married women (see, e.g., the surveys in the Handbook of Labor Economics series, 1986 through 1999). The status of single and of cohabiting women has received little attention. Considering the changes that have taken place in the past decades in the area of couple formation, the relatively slight attention paid to the labour supply of cohabiting women is striking. The proportion of women who are married declined from 47 percent in 1990 to 44 percent in 1997, whereas the proportion of women who are cohabiting increased from 6 percent in 1990 to 8 percent in 1997 (Jaarboek Emancipatie, 1999: 127; see also De Feijter, 1991). In Figure 1 the share of cohabiting women as a percentage of all women living with a partner, by age category, is presented for 1989 and 1998. For each age category the share of cohabiting women has strongly increased between 1989 and 1998, although the increase is larger in the younger age categories than in the older.

One can wonder whether the choice of marital status depends on labour market behaviour. The results of a recent study on family formation processes in the Netherlands and Flanders suggest that a professional career and parenthood are often perceived as incompatible, but that a career and union formation are not perceived as being incompatible (Liefbroer and Corijn, 1999: 71; see also Plantenga, 1993: 186–187).



Source: Housing Demand Survey, 1989/1998.

Figure 1. Number of cohabiting women as a percentage of all women living with a partner, by age, 1989 and 1998.

It is well-known that married and cohabiting women differ in labour supply. But how large is the difference? And what do we know about its causes? Is it due to differences in characteristics, like age, presence and ages of children, own net wage rate, and net income of the partner? Or is it a difference in marital-status specific behaviour that – even after controlling for variation in characteristics – is the basic cause? And what changes can be traced in the past ten, twenty years? In this article we try to answer these questions for Dutch married and cohabiting women. Section 2 will deal with theoretical aspects, section 3 with the data used. Section 4 contains the results of the empirical analysis and section 5 provides a summary of the main conclusions.

2. Theoretical background

2.1. INTRODUCTION

The theoretical point of departure in the study is rational choice theory (see, e.g., Siegers, 1992). This theory assumes that human behaviour can be understood from the confrontation of goals and restrictions. Individuals strive towards a maximum realisation of their goals, but due to restrictions they are forced to make choices and thus cannot always fully realise all their goals. This article will examine the extent to which the differences in labour supply of married and cohabiting women can be ascribed to differences in a number of specific restrictions. Therefore attention is paid to the effects on female labour supply of:

- variables related to the presence or absence of children in the household in a number of age groups;

- the woman's age;
- financial-economic variables, being the net wage rate (i.e. hourly wage) and net other household income (i.e. net household income minus net labour or benefits income of the woman);
- the unemployment rate in the region where the woman resides.

2.2. CHILDREN

Children are costly in terms of time and money. As the wage rate of the man compared to that of the woman is generally higher, and his labour productivity within the household is often lower, there is a strong tendency that the woman will focus more on being an unpaid housewife and the man on performing a paid job (Siegers, 1984a and references given there). Other factors, particularly socio-cultural, reinforce the distribution of labour between men and women (Siegers, 1984b and references given there). This means that most of the time spent on children will be the woman's responsibility, and the monetary aspects will be the man's responsibility. Consequently, the presence of children in the household would have a negative effect on the labour supply of women and a positive effect for the men. This negative or positive effect will be enhanced as there are more children. As the children get older, the time costs will diminish and the monetary costs will increase, resulting in the negative effect weakening and the positive effect gaining strength (see Renaud and Siegers, 1983; Henkens et al., 1993; Grift, 1998, for empirical support). Another reason that may account for a negative effect of the presence of children on the labour force participation of women is the shortage of day-care facilities (Van Dijk and Siegers, 1996; see also Kreyenfeld and Karsten, 2000; Hofferth and Collins, 2000). In 1988, the Netherlands had, together with Ireland and the United Kingdom, the lowest level of day-care facilities in the European Community (Van Dijk et al., 1993). Notwithstanding several "Stimulative Measures on Child Care" implemented by the Dutch government (Turksema et al., 1998; Turksema, 2000), in the 1990s this general conclusion still holds (Plantenga and Hansen, 1999: 371).

The above-mentioned domestic specialization is expected to be less for cohabiting than for married couples. This is because cohabiting couples' unions are more likely to dissolve and, therefore, the risks of domestic specialization are larger for cohabiting than for married couples.

2.3. AGE

As there is a negative relationship between age and state of health, it can be expected that the labour supply of married women will drop as they get older. This effect is probably most important among older (50+) women. In addition, it has to be taken into account that in a cross-sectional analysis different age groups correspond to different birth cohorts. Since historically the proportion of married

women with a paid job is lower in older birth cohorts, on these grounds we would also expect to find a negative relationship between age and the percentage of paid workers in a cross-sectional analysis.

2.4. FINANCIAL-ECONOMIC FACTORS

Financial-economic variables also play a role in the decision whether or not to take a job. As the income which can be earned per time unit increases, the more a person will be inclined to participate in the labour market. Two aspects can be distinguished regarding this participation: (1) the decision whether or not to participate, and (2) if participating, the decision on how many hours will be worked. In the latter case, an increase in the hourly wage has two effects on the labour supply: an income effect and a substitution effect. The income effect refers to the fact that, if one already works, a higher price per hour of work leads to a higher income and consequently to an increased demand for goods, including unpaid time, that is, a lower labour supply. The substitution effect is related to the fact that a higher price per hour of work implies a higher opportunity cost of unpaid time, so that the demand for unpaid time decreases, that is, the labour supply increases. Therefore, it is not possible to unambiguously predict the effect of changes in the hourly wage on the labour supply of people already in the labour force. Such a prediction is possible where it concerns the effect of the (potential) hourly wage on the decision whether or not to perform a paid job: as only the substitution effect plays a role in this choice (assuming that one does not work, a change in the hourly wage does not result in a change of income), it can be expected that an increased hourly wage will positively influence labour force participation.

Empirical labour supply studies often have educational attainment as a determinant, assuming that educational attainment is reflecting at least partially the respondent's earning capacity (next to reflecting aspects like social norms and social values). In our study we incorporate earning capacity in a more direct way, as is usual in economic labour supply analyses. In this way we keep closer to the economic theory, including the analysis in terms of income and substitution effects. No benefit without cost, however: incorporating the wage rate into the labour supply equation precludes incorporating educational attainment because of multi-collinearity (see Doodeman et al., 1992).

On the basis of the aforementioned income effect, we assume that the level of other household income will negatively influence both labour force participation and the weekly number of hours worked.

2.5. UNEMPLOYMENT

The probability that a person seeking employment will be successful within a certain period, decreases as the unemployment rate for the relevant region is higher. The person seeking employment could become so discouraged by this that he or

she gives up looking for a paid job, and withdraws from or does not enter the labour force. This effect of unemployment on labour force participation is called the "discouragement effect". In addition, a negative effect of unemployment on the variable to be explained is expected because the latter variable is defined as having a paid job; given the desire for having a paid job, the chance of realising this desire is obviously lower as unemployment is higher.

3. Data

The data on which the analyses are based originate from the Housing Demand Surveys 1989/90 and 1998/99, conducted by Statistics Netherlands. These cross-sectional surveys contain information on labour market status, income sources and income levels of women and their partners. Also, information is known about age, level of education, composition of the household and place of residence. The latter variable makes it possible to add a variable representing the unemployment rate in the vicinity, as an indicator of the labour market conditions in the area of residence. All married and cohabiting women younger than 65 years of age for whom all relevant data were available, have been selected from the databases. The analyses presented in this article for 1989 are for 19,387 married and 2,044 cohabiting women. For 1998, data on 15,799 married and 2,993 cohabiting women were analysed.

4. Results

4.1. LABOUR MARKET PARTICIPATION

Table II presents the results of the logit analyses for explaining the labour market participation of married and cohabiting women in 1989 and in 1998. The first two columns are related to the labour market participation of married women, while the last two columns present the results for cohabiting women. We see in the last line that, in 1989, about 38 percent of the married women participated in the labour market compared to about 84 percent of the cohabiting women. In 1998 about 55 percent of the married women participated compared to about 81 percent of the cohabiting women.

In agreement with what can be expected on the basis of economic theory, the effect of the net wage rate on female labour market participation is positive. Also in line with economic theory is the negative effect of net other household income on the labour market participation of married women. The results for cohabiting women show that they are more economically independent than married women inasmuch as net other household income, usually the man's income, does not have a significant effect on their labour market participation.

Female labour market participation drops sharply with age (the top of the inverse U-shaped parabolic relationship lies at age 25 for married women and at about age 20 for cohabiting women). For both married and cohabiting women a

Table II. Results of logit analysis explaining the labour force participation of married and cohabiting women in 1989 and 1998

Explanatory variables	Logit coefficients (a) (t-values)			
	Married		Cohabiting	
	1989	1998	1989	1998
Constant	–3.91**	–3.81**	–3.68**	–2.80**
	(12.51)	(3.38)	(3.49)	(10.11)
Net wage rate (b)	0.29**	0.22**	0.39**	0.24**
	(33.27)	(25.35)	(9.19)	(9.82)
Net other household income (c)	–0.18**	–0.03**	–0.02	–0.01
	(14.33)	(5.64)	(0.26)	(0.75)
Age	0.16**	0.14**	0.14*	0.14**
	(10.13)	(7.37)	(2.21)	(3.23)
Age squared/100	–0.32**	–0.28**	–0.36**	–0.32**
	(16.55)	(12.73)	(4.34)	(5.68)
C100 (d)	–2.15**	–1.15**	–2.60**	–1.59**
	(35.51)	(14.52)	(11.94)	(10.42)
C010 (d)	–1.54**	–1.02**	–1.75**	–1.44**
	(20.32)	(12.05)	(4.51)	(5.99)
C001 (d)	–0.64**	–0.25**	–0.92**	–0.40*
	(12.04)	(4.66)	(3.00)	(2.06)
C110 (d)	–2.21**	–1.67**	–2.61**	–1.97**
	(30.24)	(20.59)	(5.65)	(8.43)
C101 (d)	–1.62**	–1.63**	–2.87*	–3.04**
	(7.97)	(6.99)	(2.28)	(4.08)
C011 (d)	–1.38**	–0.97**	–3.03**	–1.43**
	(18.78)	(12.45)	(5.02)	(5.44)
C111 (d)	–2.49**	–1.93**	–1.68	–2.37**
	(13.96)	(12.95)	(1.26)	(4.67)
Unemployment	–0.01	–0.02	–0.03	–0.09*
	(1.52)	(1.29)	(0.87)	(2.07)
N	19387	15799	2044	2993
Average of the dependent variable	0.378	0.549	0.843	0.809

a) *significant $p < 0.05$; **significant $p < 0.001$.
b) Estimated for all respondents using Heckman two-step procedure (Heckman, 1979).
c) Defined as the net annual salary or social security benefits of the spouse plus the child allowance for children in the household, in ten thousands of Dutch guilders.
d) Dummy variables with respect to the presence of children in the household, coded as follows:

	Presence of children		
	0 to 5 years	6 to 11 years	12 years and older
C100 = 1	yes	no	no
C010 = 1	no	yes	no
C001 = 1	no	no	yes
C110 = 1	yes	yes	no
C101 = 1	yes	no	yes
C011 = 1	no	yes	yes
C111 = 1	yes	yes	yes

Source: Housing Demand Survey, 1989 and 1998.

series of eight dummy variables were included to represent the presence of children in the household. As expected, the presence of children in the household negatively influences the labour market participation of the woman. This negative effect is stronger as the children are younger. For married women the effect of the presence of young children if there are also older children in the household, seems to be changing. Whereas in 1989 the negative effect seems to become less, especially if children aged 12 or older were present in the household, for 1998 the reverse seems to be true: the presence of older children enlarges the negative effect of young children. For cohabiting women the latter effect also holds: the older the other children are, the more negative the influence of youngest children on female labour market participation is. For cohabiting women in 1998 the large negative effect of children when there are children in the youngest and oldest category present in the household is striking. Apparently, the low level of day-care facilities goes along with a lack of possibilities of combining work with care after high school.

Lastly, the negative influence of young children becomes stronger when there are also children aged 6 to 11 years present in the household, and even more when there are also children older than 12 years; only for cohabiting women in 1989 the effect became less.

The effect of unemployment rates on labour market participation is only significant in 1998 for cohabiting women.

From 1981 via 1989 to 1998 the labour participation rate of married women increased from 31 percent via 38 percent to 55 percent (see for all figures on 1981: Henkens et al., 1993). The corresponding rates for cohabiting women are 75, 84 and 81 percent, respectively. So the massive growth in female labour force participation is especially due to the growth in participation by married women. The decrease in labour market participation of cohabiting women during the last decade seems to be the result of cohabitation becoming more normal, including cohabitation when there are young children in the household.

Comparing the results for 1981, 1989 and 1998, it appears that married women became more economically independent as their labour market participation became less dependent on net other household income (mainly consisting of the man's income). In each of the three years investigated, the labour market participation of cohabiting women was not affected by net other household income. Both for married and cohabiting women, in each decade the effect of the presence of children lost importance. These trends can be seen as reflecting the developments and policies described in section 1.

4.2. WEEKLY WORKING HOURS

The results of the regression analysis to explain the weekly paid hours of working women in 1989 and 1998 are presented in Table III. The first and second column in Table III show that, in line with the theoretical expectation, net other household income has a negative effect on hours worked by married, working women. The

Table III. Results of regression analysis explaining the weekly hours worked of married women and cohabiting women in 1989 and 1998

Explanatory variables	Regression coefficients (a) (t-values)			
	Married		Cohabiting	
	1989	1998	1989	1998
Constant	28.15**	20.12**	38.71**	8.61
	(11.75)	(5.94)	(9.34)	(1.91)
Net wage rate (b)	0.90**	0.92**	–0.45	0.48**
	(5.88)	(12.29)	(1.89)	(4.34)
Net other household income (c)	–1.04**	–0.16**	–0.08	–0.02
	(12.30)	(4.85)	(0.53)	(0.39)
Age	–0.06	–0.04**	0.30	1.09**
	(0.51)	(0.28)	(1.45)	(5.29)
Age squared/100	–0.39**	–0.54**	–0.09	–1.74**
	(2.71)	(2.70)	(0.27)	(5.56)
C100 (d)	–10.89**	–11.72**	–3.50	–9.46**
	(9.71)	(22.76)	(1.40)	(10.94)
C010 (d)	–10.91**	–11.15**	–3.68*	–8.43**
	(16.83)	(19.76)	(1.98)	(7.05)
C001 (d)	–5.57**	–4.91**	–3.81**	–6.97**
	(14.44)	(14.22)	(2.85)	(7.86)
C110 (d)	–12.73**	–14.39**	–1.77	–13.26**
	(7.44)	(16.41)	(0.43)	(7.42)
C101 (d)	–10.16**	–11.53**	19.89*	–11.85
	(4.53)	(6.66)	(2.26)	(1.87)
C011 (d)	–9.79**	–11.15**	–15.89**	–11.44**
	(12.76)	(16.83)	(9.71)	(7.65)
C111 (d)	–12.93**	–14.59**	20.89**	–13.10**
	(5.06)	(10.07)	(2.89)	(3.65)
Heckman's λ	–0.79	2.53*	–12.40**	–1.05
	(0.45)	(2.21)	(3.13)	(0.50)
N	6274	8303	1615	2340
Average of the dependent variable	23.9	20.6	33.7	29.1
Explained variance	0.33	0.19	0.14	0.24

a) *significant $p < 0{,}05$; **significant $p < 0{,}001$.
b) Estimated for all respondents using Heckman two-step procedure (Heckman, 1979).
c) Defined as the net annual salary or social security benefits of the spouse plus the child allowance for children in the household, in ten thousands of Dutch guilders.
d) See note d) Table II.
Source: Housing Demand Survey, 1989 and 1998.

effect of the wage rate is significantly positive. It can be concluded that the substitution effect is stronger than the income effect: an increased wage rate results in an increased labour supply. Age has a significant, negative effect. The number of hours worked is negatively influenced by the presence of children, with this effect being stronger as the children are younger than 12 years of age.

With respect to the weekly paid hours worked, the results show that the cohabiting women are more economically independent than married women, inasmuch as net other household income does not have any effect on their number of hours worked. In 1989 the income and substitution effects result in an insignificant effect of the wage rate. In 1998 the wage rate has a positive, significant effect on the number of hours worked. This implies that the income effect is weaker than the substitution effect: an increased wage rate results in an increase of the number of hours worked. The woman's age has a significantly negative effect. The presence of children negatively influences the number of hours worked.

From 1981 via 1989 to 1998 the mean number of weekly hours worked by married women fell from 26 via 24 to 21 (see for all figures on 1981: Henkens et al., 1993), reflecting the growing importance of women working part-time, especially in part-time jobs with short hours. From 1981 via 1989 to 1998 the weekly hour worked of cohabiting women fell from 36 via 34 to 29, also reflecting the growing importance of women working part-time. Besides, like the decrease in labour market participation of cohabiting women, the decrease in their weekly hours worked during the last decade seems to be the result of cohabitation becoming more normal, including cohabitation when there are young children in the household. As a result of these developments, during the past twenty years the difference in weekly hours worked between married and cohabiting women decreased somewhat in absolute terms: from 10 in 1981 and 1989 to 8 in 1998. Expressed as a percentage of the weekly worked hours of cohabiting women, however, the weekly working hours of married women stayed remarkably constant at 71 percent.

Comparing the results for 1981, 1989 and 1998, it shows that married women became more economically independent inasmuch as their weekly hours worked became less dependent on net other household income. In each of the three years investigated the weekly hours worked of cohabiting women were not affected by net other household income. Both for married and cohabiting women in the 1980s the effect of the presence of children halved. In the 1990s, however, there was no further reduction. Especially for cohabiting women, the effect even seems to have gained importance.

4.3. MARRIED AND COHABITING WOMEN: DIFFERENT CHARACTERISTICS VERSUS DIFFERENT BEHAVIOUR

It appears from the above that in 1989, like in 1998, the participation level of married women was much lower than that of cohabiting women. It also appears that wage-earning married females in the years studied worked fewer hours per

Table IV. Standardisation analysis: behavioural differences versus differences in characteristics in 1989

	Characteristics married women		Characteristics cohabiting women	
	Behaviour married women	Behaviour cohabiting women	Behaviour married women	Behaviour cohabiting women
Labour market participation	38%	46%	71%	84%
Weekly hours worked	24 hours	28 hours	32 hours	34 hours

Source: Housing Demand Survey, 1989.

week, on average, than cohabiting females. The differences in labour supply between married and cohabiting women can be split into two components. The first component is related to the different characteristics of these two groups of women. The second component is related to the difference in behaviour, i.e. how they react to these characteristics, which becomes apparent from the estimated coefficients. With respect to the different characteristics, it appears that at the end of the 1980s and at the end of the 1990s, cohabiting women were younger than married women, had a lower net other household income, and had a smaller number of (young) children present in the household. For example, in 1981, 29 percent of the married women cared for one or more children aged 0 through 5 years compared to 5 percent of the cohabiting women. In 1989 the corresponding percentages were 26 and 9, and in 1998 the percentages were 24 and 18, respectively. Considering the negative effect of the presence of young children on the labour supply of women, it can be deduced from the above that even if married and cohabiting women would react similarly to the presence of children, this would still result in a lower labour market participation of married women. It must be noted that the characteristics concern those characteristics that were available at the time of the survey, and that behaviour is related to these characteristics. Part of what is called characteristics here is obviously based on previous behaviour, like, e.g., the presence of children.

Tables IV and V present the results for 1989 and 1998, respectively, of a standardisation analysis to investigate how large the labour supply of cohabiting women would have been if they would have reacted similarly as married women, given their characteristics. From Table IV it appears that, in 1989, the participation of cohabiting women would then have been about 71 percent, instead of the actual 84 percent. The average weekly number of hours worked would have been 32, instead of the actual 34. If, in 1989, married women would have behaved similar as cohabiting women, given their characteristics, their labour market participation would have been 46 percent, instead of the actual 38 percent. The number of hours worked of married, wage-earning women would have been an average of 28 hours, instead of the actual 24 hours.

Table V. Standardisation analysis: behavioural differences versus differences in characteristics in 1998

	Characteristics married women		Characteristics cohabiting women	
	Behaviour married women	Behaviour cohabiting women	Behaviour married women	Behaviour cohabiting women
Labour market participation	55%	61%	76%	81%
Weekly hours worked	21 hours	23 hours	27 hours	29 hours

Source: Housing Demand Survey, 1998.

The third column in Table V shows that, in 1998, if cohabiting women behaved like married women, given their characteristics, 76 percent of them would have participated, instead of the actual 81 percent (see the last column), and that their number of weekly hours worked would have been 27 instead of 29. If married women would behave like cohabiting women, given their characteristics, then according to the second column their labour market participation level would be 61 percent compared to the actual 55 percent (see the first column), and they would work 23 hours per week instead of 21.

A components analysis can answer the question: what part of the differences in labour market participation or weekly hours worked between married and cohabiting women is accounted for by differences in characteristics and in behaviour, respectively? Applying standard components analysis the differences are disentangled in two main effects and an interaction effect (see for the technicalities Siegers, 1985; Henkens et al., 1993). The first main effect is formed by the difference in labour market participation or weekly hours worked that can be attributed to the difference in characteristics, the second by the difference in labour market participation or weekly hours worked that can be attributed to the difference in behaviour. Due to the standardisation problem which results from weighting the two main effects with either the behaviour and the characteristics of married women or the behaviour and characteristics of cohabiting women, there are two ways to calculate both the main effects and the interaction effect. Both ways will be applied.

In Tables VI and VII the results of the component analyses for 1989 and 1998, respectively, are presented. According to the first two lines of Table VI, and distributing the interaction effect equally across both main components, 77 percent of the difference in labour market participation in 1989 between married and cohabiting women is due to a difference in characteristics and 23 percent to a difference in behaviour. When we follow the same procedure with respect to weekly hours worked we can infer from the last two lines of Table VI that 67 percent of the difference in weekly hours worked in 1989 between married and

Table VI. Components analysis of the difference in labour supply of married women and cohabiting women in the Netherlands, in percentages of the total differences, 1989

		Behavioural difference	Difference in characteristics	Interaction	Total
Labour market	Equation (1)	17	72	11	100
participation	Equation (2)	28	83	–11	100
Weekly hours	Equation (1)	19	54	27	100
worked	Equation (2)	46	81	–27	100

Source: Housing Demand Survey, 1989.

Table VII. Components analysis of the difference in labour supply of married women and cohabiting women in the Netherlands, in percentages of the total differences, 1998

		Behavioural difference	Difference in characteristics	Interaction	Total
Labour market	Equation (1)	23	81	–4	100
participation	Equation (2)	19	77	4	100
Weekly hours	Equation (1)	25	75	0	100
worked	Equation (2)	25	75	0	100

Source: Housing Demand Survey, 1998.

cohabiting women is due to the difference in characteristics and 33 percent to a difference in behaviour.

As can be read from Table VII, in 1998, the interaction effects are negligible. According to the first two lines of the table, 79 percent of the difference in labour market participation in 1998 between married and cohabiting women is due to the differences in characteristics and 21 percent to a difference in behaviour. The last two lines of the table show that 75 percent of the difference in weekly hours worked between married and cohabiting females can also be attributed to differences in characteristics and 25 percent to a difference in behaviour.

Comparing the component analyses for 1981 (see Siegers, 1985; Henkens et al., 1993), 1989 and 1998, we can conclude that although the characteristics of married and cohabiting women become more similar, the differences in characteristics still accounts for almost 80 percent of the difference in labour market participation between married and cohabiting women (85 percent in 1981, 77 percent in 1989, and 79 percent in 1998). In the last decade the differences in characteristics between married and cohabiting women have even gained in importance in explaining the difference in weekly hours worked (69 percent in 1981, 67 percent in 1989 and 75 percent in 1998).

4.4. CHANGES OVER TIME: DIFFERENT CHARACTERISTICS VERSUS DIFFERENT BEHAVIOUR

Although our prime focus is on the analysis of changes in labour market participation between married and cohabiting women at two points in time, it is also worthwhile to investigate whether differences in labour supply over time could be attributed to either changes in characteristics, to changes in behaviour or to changes in both. As has been pointed to in the beginning, Dutch female labour market participation has increased tremendously. Rearranging information shows that the participation level of women was much lower in 1989 than in 1998, 42 percent versus 59 percent, respectively. On the other hand, wage-earning women worked two hours more per week in 1989 than in 1998.

To economize on available space the analyses in this section apply to all women. As married women present the majority of the total number of women living with a partner, i.e. 90 percent in 1989 and 84 percent in 1998, the results for both categories are not very different (the table is available upon request from the authors). The financial variables for 1989 are adjusted for inflation (CBS; price index number between 1989 and 1998 equals 1.26). In Table VIII a comparison is made for married and cohabiting women in 1989 and 1998 with respect to labour market participation. Given their characteristics, if women in 1998 would have behaved like women in 1989 they would have participated less (46 percent instead of the actual 59 percent) and they would have worked less (23 hours per week instead of the actual 24 hours). If women in 1989 would have behaved as women in 1998, given their characteristics, they would have participated more (56 percent instead of the actual 42 percent), but they would have worked less hours (only 22 hours instead of the actual 26 hours).

In Table IX the results of the component analyses for women between 1989 and 1998 are presented. According to the first two lines of Table IX, and distributing the interaction effect equally across both main components, 79 percent of the difference in labour market participation between 1989 and 1998 is due to a difference in behaviour and 21 percent to a difference in characteristics. The difference between weekly worked hours can be attributed for 76 percent to differences in behaviour and for 24 percent to differences in characteristics.

Apparently, the rise in labour market participation as well as the decrease in hours worked per week for both married and cohabiting women between 1989 and 1998 is primarily the result of a change in behaviour in wanting to participate more and to work less hours per week given characteristics and cannot be attributed to a change in characteristics. Policies stimulating women to enter the labour market were successful, although a lot still has to be done in facilitating the combination of work and care.

Table VIII. Standardisation analysis: behavioural changes versus differences in characteristics in 1989 and 1998a

	Characteristics women 1989		Characteristics women 1998	
	Behaviour women 1989	Behaviour women 1998	Behaviour women 1989	Behaviour women 1998
Labour market participation	42%	56%	46%	59%
Weekly hours worked	26 hours	22 hours	23 hours	24 hours

Based on analyses for married and cohabiting women combined (tables are available upon request from the authors).
Source: Housing Demand Survey, 1989 and 1998.

Table IX. Components analysis of the changes in labour supply of married and cohabiting women in the Netherlands, between 1989 and 1998, in percentages of the total differences

		Behavioural difference	Difference in characteristics	Interaction	Total
Labour market participation	Equation (1)	76	18	6	100
	Equation (2)	82	24	–6	100
Weekly hours worked	Equation (1)	–48	–100	248	100
	Equation (2)	200	148	–248	100

Source: Housing Demand Survey, 1989 and 1998.

5. Conclusions

A few decades ago Dutch female labour supply was extremely low compared to other western countries. In the meantime the Netherlands did catch up, but is still lagging behind e.g. the United Kingdom and Sweden. The enormous growth in Dutch female labour market participation in the past two decades is almost completely due to a growth in women working part-time. This is partly the result of the growing social acceptance of mothers working for pay, and partly the result of an explicit policy of the Dutch government of encouraging individualised working-time arrangements because of the flexibility they offer both the employer and the employee.

Until now, research into female labour supply almost only paid attention to married women. Though it is conventional knowledge that married and cohabiting women differ in labour supply, we hardly know more than just that. In this article, we have tried to trace the differences in labour market participation as well as in weekly hours worked between married and cohabiting women. Also, we investi-

gated to what extent the differences found are due to the fact that married and cohabiting women differ in characteristics and to what extent – after controlling for variation in characteristics – they are due to differences in behaviour. Lastly, we investigated whether the overall increase in female labour market participation and decrease in weekly hours worked between 1989 and 1998 can either be explained by looking at behaviour or at characteristics.

The theoretical point of departure for the conducted analyses is rational choice theory. The data have been taken from the Housing Demand Surveys of 1989/90 and 1998/1999, as conducted by Statistics Netherlands. We were able to compare the results of our analysis with those of an earlier, analogous analysis on similar data.

From 1981 via 1989 to 1998 the weekly hours worked of married women fell from 26 via 24 to 21 (see for all figures on 1981: Siegers, 1985; Henkens et al., 1993), reflecting the above-mentioned growing importance of women working part-time, especially in part-time jobs with short hours. From 1981 via 1989 to 1998 the weekly hour worked of cohabiting women fell from 36 via 34 to 29, also reflecting the growing importance of women working part-time. Besides, like the decrease in labour market participation of cohabiting women, the decrease in their weekly hours worked during the last decade seems to be the result of cohabitation becoming more normal, including cohabitation when there are young children in the household.

Although the characteristics of married and cohabiting women have become more similar, the differences in characteristics still accounts for almost 80 percent of the difference in labour market participation and for almost 75 percent of the difference in weekly hours worked between married and cohabiting women. However, the overall increase in participation and decrease in weekly hours worked between 1989 and 1998 can mainly be attributed to a change in behaviour. Policies stimulating women to enter the labour market seem to have been successful in changing attitudes of society with respect to women working for pay.

During the last few decades married women became more economically independent inasmuch as their labour supply became less dependent on their partner's income. The labour supply of cohabiting women proves to be not dependent on their partner's income whatsoever. Both conclusions fit the emancipation policy of the Dutch government that for a large part is focussed on both men and women being economically independent.

Both for married and cohabiting women in each decade the effect of the presence of children in the household on labour supply lost importance. This can be seen as reflecting the developments and policies as described in the present article, including the growing acceptance of mothers working for pay, the increase in women working part-time – especially those working on very short hours – and the "Stimulative Measures on Child Care" implemented by the Dutch government. However, although the overall effect of children diminishes, the negative influence of the presence of children in several age groups on labour supply seems to

change over the years; the negative effect of having older children in the household has become larger compared to the effect of having only young children in the household, which draws attention to the importance of after-school child care.

Overall, with respect to labour supply married and cohabiting women are not so much different kinds of people as far as it concerns behaviour as such, but primarily as far as they differ in characteristics like age, presence and ages of children, own net wage rate, and net income of the partner.

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