Outsourcing childcare, home cleaning and meal preparation

Key-words: households, outsourcing, childcare, home cleaning, meal preparation

JEL- classification: D1

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Abstract

In this paper the outsourcing of childcare, home cleaning and meal preparation is analysed by means of a socio-economic model that incorporates household-economic, lifecycle, lifestyle and health variables.

The data (n= 700) was collected during a telephone survey in the Netherlands. About 10 per cent of the households did not use any of the three forms of outsourcing. About 70 to 90 per cent of households outsourced meal preparation. In any household type, the average monthly expenditures on outsourcing meal preparation were the highest of the three outsourcing categories. In the data analysis a Heckman selection model was applied.

Factors affecting different outsourcing expenditures were generally the same for each type of outsourcing studied . Household economic variables as wage and working hours were in general not important in explaining the incidence and expenditures of outsourcing. The same hold for health. Childcare expenditures were also affected positively by life-cycle variables. There was an indication that a traditional lifestyle and traditional family type affected outsourcing expenditures negatively. Education appeared as an important taste shaper: regardless of gender, both medium and higher educated people were more inclined to spend money on outsourcing than the lower educated. Especially people younger than 44 years outsourced meal preparation. Outsourcing was neither restricted to nor especially practised by couples.

Key words: outsourcing: child care; home cleaning, meal preparation; socio-economic variables

Introduction

Outsourcing is defined as an arrangement for a particular service outside the household (either private or subsidised) to take care of household activities.(Van Ophem & De Hoog, 1995)

Due to the increased female labour participation in the past decades, more and more households lack the time to perform all necessary household and care activities. There are three strategies to solve this problem: 1) outsourcing household and care activities; 2) substitution of household and care tasks by domestic appliances; and 3) time arrangement (adjusting working hours or shop opening hours) (SCP, 2000a; Van Ophem and De Hoog, 1995; and Van Dam *et al*., 1994). In addition, households may reduce their household and care activities and accept a lower level of welfare. In this paper, we will focus on the outsourcing of household and care activities.

Since the end of the 1990s, household and care activities have been outsourced more frequently in the Netherlands (RIVM, 2004; SCP, 2000a; Tijdens *et al*., 2000). This trend has become possible because households have obtained more financial discretion, among other things because of increased female labour supply. Over the years, the number of outsourcing possibilities has grown, which gives households more options to outsource their household and care tasks. About 40 percent of the Dutch households with children living at home use childcare (SCP, 2006). Households with children spend about a third more time on household and care activities than households without children. This increased household and care time is compensated with less time for sleeping and leisure and more outsourcing (SCP, 2001). Between 1995 and 2000, the expenses on childcare have more than doubled (SCP, 2000a).

Childcare, home cleaning and meal preparation are the three most important forms of outsourcing of household activities as measured either in terms of money or frequency (Van Ophem & De Hoog, 1995; Tijdens *et al*., 2000). It seems obvious to expect that in general

factors affecting outsourcing are the same for all three forms of outsourcing. However, this has not been established empirically. To contribute to this issue we will analyze the determinants of the demand for outsourcing by households for the three domains concerned. In doing so, we will apply a socio-economic model that not only includes household-economic variables, but also variables related to lifecycle, lifestyle and health. With respect to outsourcing household activities, both the household's income and the wife's income are important (Palameta, 2003; Spitze, 1999; Oropesa, 1993; Soberon-Ferrer and Dardis, 1991). Unearned income (non-labour income), wives' wages, wives' education, and being white are significant factors in outsourcing home cleaning (Soberon-Ferrer and Dardis, 1991). Spitze (1999) and Oropesa (1993) found that in the United States, higher-income households hire more paid household help than lower-income households. This is also true in Dutch households (Lambriex and Siegers, 1993). In the United States, the top-income households spend more than twelve times as much on housekeeping services and four times as much on food away from home than the lowest income group (Cohen, 1998).

The paper is structured as follows. Section 2 provides a theoretical orientation with respect to outsourcing and the socio-economic model we use in the estimation of the demand for outsourcing. Section 3 deals with the data and method of analysis. The results are presented in section 4. Section 5 contains the conclusion and discussion.

2. Theoretical orientation

The number of Dutch households with two employed partners has increased, which is mainly caused by an increase in labour supply by women with young children during the past decade (Maassen van den Brink and Groot, 1997). Between 1980 and 2005, the fraction of people combining paid labour with care increased from 16 percent to 38 percent for people between

the ages of 20 and 64 (SCP, 2006a). The increased female labour participation has barely been accompanied by a decrease in male labour participation. However, total household and labour time combined has remained about the same for men and women, about 40 hours per week in 2000 and 2005 (SCP, 2004).

In the Netherlands, predominantly two-earner households (largely one-and-a-half income households) outsource the care for children to paid childcare centres (47 percent), but also one-earner households make use of this service albeit to a lesser extent (20 percent) (SCP, 2000a). Except for labour participation, parents outsource child care for pedagogical reasons, to let their children play with other children, or to have more leisure time for themselves. Earlier research has shown that households with higher educated wives are more likely to use outsourcing opportunities than households with lower educated wives (Bellante and Forrester, 1984; Soberon-Ferrer and Dardis, 1991), due to higher opportunity costs of household labor. Outsourcing childcare is not only positively related to income, but to level of education as well (SCP, 2000a). Sixty percent of the higher educated mothers with children aged between 0 and 12 use childcare, compared to only 22 percent of the lower educated mothers (SCP, 2006).

Caring for children still is mainly a women's task, even when childcare services are used. The time women spend on childcare is quite stable, despite their increased working hours (Maassen van den Brink and Groot, 1997). Between 1990 and 2005, time spent on caring for children (aged between 0 and 14) has even increased (SCP, 2006a). Sousa-Poza *et al*. (2001) find that for wives, the presence of children, marital status, and hourly wage rate are important factors influencing time spent on household activities and childcare. Out-of-home childcare is not a substitute for taking care of one's own children. In general, parents use out-of-home childcare to combine paid work with parental activities while cutting down on private leisure and household activities (Hallberg and Klevmarken, 2003).

At present in the Netherlands, households can outsource home cleaning to a cleaning professional, cooking to restaurants (or people can eat ready-to-eat-meals, takeaway food or delivery food), and childcare to day-care centres. 82 Percent of the Dutch dual-earner households eat takeaway food more than once per month, against 62 percent of the single-earner ones (SCP, 2000a).

Home cleaning is mainly outsourced by two-earner households, especially when they have children. Outsourcing home cleaning is also positively related to household income, and income and level of education of the wife (Tijdens *et al*., 2000; SCP, 2000a; Lambriex and Siegers, 1993). Van der Lippe *et al*. (2004) have shown that a domestic help saves women time. Between 1975 and 1995, the number of two-earner households outsourcing home cleaning has increased from 10 to 25 percent. The number of one-earner households outsourcing home cleaning has been quite stable in that time period (around 5 percent). Other help for domestic work (not specified) is also primarily used by two-earner households (29 percent) and is positively related to having children living at home (Tijdens *et al*., 2000).

The socio-economic model we will estimate includes economic variables such as wages and working hours of men and women, and socio variables such as health status, family life-cycle and life styles variables. The model incorporates explanatory variables from on the one hand, the New Home Economics , and from the other hand sociology.. The model tries to discern what characteristics factors of the male and female members of the household and of the household itself , whether traditional economic or not, affect outsourcing.

For the economic variables, we refer to the New Home Economics (NHE) of Becker (1965) and Gronau (1977, 1986). Both types of variables are included in the linear demand

function for outsourcing goods and services O, measured in expenditures per month as follows.

(1) $O = \beta_0 + \beta_1 W_f + \beta_2 W_m + \beta_3 N_f + \beta_4 N_m + \beta_5 D + \varepsilon$

with β_0 to β_5 coefficients to be estimated. W_f and W_m are the hourly wage rates of each partner (if available). N_f and N_m are the market weekly working hours of female and male, respectively. D is a vector of socio-economic and demographic variables and includes age of the respondent, level of education of each partner, monthly wage of each partner, working hours of each partner, children living at home, living in an urban area, religious affiliation, and health; ε is a stochastic disturbance term with a normal distribution and zero mean. Table 1 gives an overview of the values of the dependent and independent variables used in the model.

Since the money spent on a particular form of outsourcing(expenditure equation) is dependent on the decision to outsource a particular activity (selection equation) the Heckman correction has been applied to deal with selectivity bias (Johnston and DiNardo, 1997). Both the selection equation and the cost equation are affected by the same independent variables to a large extent, with the exception of the following five variables: married/living together, urban area, health, religious affiliation and age. It is reasonable to assume that they are affecting the selection equation and not the cost equation as explained below.

Households with a high number of working hours may outsource household and care activities to "buy" time for other activities. Research shows that females with a job of more than 24 hours per week make significantly more use of childcare (Van Dijk and Remery, 1997). Therefore, working hours are expected to have a negative relationship with household and care time, but to have a positive relationship with outsourcing. This should hold true for

both men and women while wages are expected to exert a positive impact on expenditures or costs of forms of outsourcing by households.

The older generation is expected to have a relatively negative attitude towards outsourcing. On the other hand, as people become older, they may need to outsource more of their household activities (Bitman *et al.*, 1998). Therefore the effect of age could be either positive or negative.

Furthermore, we expect that the higher the income of a household, the more money is spent on outsourcing of household activities (see amongst others Palameta, 2003; Spitze, 1999; Cohen, 1998; Oropesa, 1993). Especially females' income might be important; we expect outsourcing expenditures to increase if her wage rate goes up as she will have more incentive to work out of home. On the other hand, if males' wage rates increase, less money may be spent on outsourcing activities as a high wage rate for males may be positively related to being a housewife due to task specialization.

As compared with singles, married or cohabiting people benefit from the economies of scale and specialisation in household production. So, each household partner is expected to spend less money on outsourcing. Households with (young) children are expected to outsource more, due to increased household and care time (Tijdens *et al*., 2000).

Higher educated men and women are inclined to spend less time on household and care activities, and, consequently, to spend more money on outsourcing these activities (SCP, 2000a).

A positive relation between living in an urban area and outsourcing is expected, since living in an urban area will give more opportunities to outsource childcare and household tasks, and the socio-cultural climate is more conducive to outsourcing in urban areas (Cohen, 1998; Soberon-Ferrer and Dardis, 1991).

People with a religious background may have a more traditional task division between men and women (Ellison and Bartkowski, 2002), and therefore spend more time on household and care activities and make less use of outsourcing facilities.

The expected effect of health on outsourcing home cleaning and childcare activities is negative, since healthier people are more able to do these activities themselves. However, healthier people are less attached to the home and, therefore, will spend more money on outsourcing of meal preparation.

Data and method

The data was collected during a telephone survey in the Netherlands between September and November 2001 by a Dutch market research organization. The sample (n= 700) was drawn randomly from the total pool of phone numbers (about 6.8 million) administered by KPN in 2001. The data includes samples of four different ethnic groups, including the native Dutch. Here the analysis will be limited to the native Dutch. The average response rate in all ethnic groups was 23.4%, although the response among the native Dutch is likely to have been much higher.

It was explained to the respondents that the survey was held to obtain more insight in the life situation of the Dutch population. The respondents were asked about their outsourcing behaviour, their time allocation, as well as socio-economic and demographic circumstances (see Table 1).

[*Insert Table 1 about here]*

In several respects, the sample deviated from Dutch national statistics: 63% were female (51 % in Dutch statistics), 68% were married or cohabiting (52 % according to Dutch statistics), and 42% had children at home (30 % in Dutch statistics). The average age of the respondents was 47 years.

Results

Table 1 shows the use of different outsourcing categories applied by households and the monthly expenditures in particular household types. Since childcare is only demanded by household with children, the results are presented for four different household types: couples with children, couples without children, singles with and singles without children. It should be noted that the sample contained only 10 singles with children.

[Insert Table 2 about here]

About 10 per cent of the households did not use any of the three forms of outsourcing. About 70 to 90 per cent of households outsourced meal preparation. Households without children outsourced meal preparation less frequently than households with children. Singles, either with or without children, on average spent less per month on outsourcing meal preparation than couples, either with or without children. The outsourcing of home cleaning was practised by about 30 per cent of the households, except for singles with children. Twenty percent of the singles with children (only two households) and 26 per cent of the couples with children used child care outsourcing.

Couples with children spent the highest *total* amount on outsourcing and they spent more than couples without children. On the other hand, singles without children spent more

on outsourcing compared to singles with children. In any household type, the average monthly expenditures on outsourcing meal preparation was the highest of the three outsourcing categories.

The differences in budget shares (total outsourcing expenditures/ net household income) were less pronounced, about 10 percent for couples with children, 5 percent for couples without children, and 7 percent for singles (either with or without children).

Table 2 presents the results of the Heckman selection model for outsourcing of childcare, home cleaning and meal preparation. It contains the selection equation and the logarithm (ln) of the expenditures equation.

[Insert Table 3 about here]

The decision to outsource child care was positively affected by the presence of children younger than 12 years old, by the respondent being in the 36-45 age bracket and a high female level of education, while the variable female working hours not observed had a negative impact. The expenditures on childcare were higher if female's wage was not given and if females and males were highly educated.

Home cleaning outsourcing was positively affected by high level of education of female and male and, as expected, by female working hours. The incidence of home cleaning outsourcing were negatively correlated with age below 64 and for people living together. The expenditures on home cleaning were positively affected by a male high level of education. This was the only significant variable in the equation.

The outsourcing of meal preparation was negatively affected by the presence of very young children (0-3 years of age) and male working hours. Medium and high levels of education of both females and males had a positive impact on the incidence of outsourcing of meal preparation just as a younger age of the respondent (< 44 years old).

Outsourcing expenditures of meal preparation were positively affected by medium and high level of education of the male, and the male wage and wale mage not given, and, as expected, negatively by young children living at home (age bracket 4-11).

The results are summarised in Table 4. As indicated above many expected relationships were not significant.. This holds particular for male and female working hours in two of the three selection equations and, religious affiliation, living in an urban area and health in three selection equations. Female and male wage was not significant in most cost equations. The impact of education was, as expected, positive in all equations. The presence of young children had the expected sign in most equations.

[Insert table 4]

Conclusion and discussion

Employing a socio-economic model, we analyzed the determinants of household demand for outsourcing household and care activities in three domains: childcare, home cleaning and meal preparation. This model contains not only traditional economic variables, but independent variables related to health, lifestyle and life-cycle as well. The model estimates lead to the following conclusions.

The premise that factors affecting different outsourcing expenditures are generally the same for each type of outsourcing studied, turned out to be satisfactory. Only in one case of the cells in Table 4 the result was contrary to the expectation: male wage had a positive impact on the expenditure equation in meal preparation. Living in an urban area, religious affiliation and perceived health were not significant in any of the selection equations. Female working hours were a significant in the home cleaning selection equations and not significant in the childcare and meal preparation selection equation.

Household economic variables such as female and male wage working hours, and marital status (being married/cohabiting), indicating the benefits of intra-household specialisation and economies of scale, were not significant in most equations. Only the outsourcing of home cleaning is positively affected by female working hours. It seems that the number of hours worked by females explains having a domestic help (and a window cleaner). Moreover, when it comes to outsourcing household and care tasks, the wage of females is not more important than the one of males. There is not much support for the statement that caring is still mainly a task for females and if they work more (and earn more money) they have less time to do all household tasks and have more money to outsource these tasks.

Outsourcing childcare is negatively associated with female working hours not observed. Moreover, if males were highly educated, less was spent on childcare. As females working hours and wage were not significant regarding childcare, this might indicate that higher educated males with long working hours are more likely to have a wife that stays home with the (young) children., if she is not higher educate herself

Childcare expenditures mainly were affected by two life-cycle variables: positively by having young children at home and by the respondent being aged 35 to 44, in most cases the corresponding age category of the parents).

A high level of education of both males and females is a culture variable which affects the expenditures on childcare positively. Education appeared as an important taste shaper both for males and females, both medium and higher educated people are more inclined to spend money on outsourcing than the lower educated. Probably they are less attracted by the effort of doing household work. Their lifestyle may be characterized as post-modern and, when they live together with a partner their family type is not traditional, but rather egalitarian or individualised.

This conclusion supports the notion that a traditional lifestyle and traditional family type affects outsourcing expenditures negatively.

Lifestyle manifests itself in another way as well: outsourcing meal preparation is widely practised in Dutch households. Working as well as non-working females use food delivery (or other types of outsourcing meal preparation). Males' wage seems an important factor of spending on outsourcing meal preparation. Furthermore, especially the younger generation and higher educated people are likely to do less cooking by themselves. Meal preparation outsourcing expenditures are also negatively affected by the presence of children younger than 11 years old. This is partly due to the fact that couples with children are more home oriented and partly to parental concerns about the desired quality of food for their children: junk food generally does not produce healthy kids.

The results of our study contradict the widespread image of outsourcing, e.g. outsourcing being especially applied by dual earner households without kids. Almost all households practice the outsourcing of meal preparation. Outsourcing is not restricted to or especially practised by couples. However, outsourcing seems to be negatively associated with a traditional life style and family type and, through the level of education, with a post-modern lifestyle and egalitarian and individualistic family types.

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Table 1 Frequencies of independent variables (standard deviation between parentheses)

Variables	
Working hours female (if working) per week	26.34 *(11.57)*
Working hours female not observed* (dummy)	52.6%
Working hours male (if working) per week	40.88 *(11.21)*
Working hours male not observed (dummy)	42.1%
Female wage per month (if working)	€1122.43 *(307.95)*
Female wage not given (dummy)	8.0%
Male wage (if working)	€1849.25 *(268.49)*
Male wage not given (dummy)	13.3%
Age 18 – 34	27.4%
Age 35 – 44	23.5%
Age 45 – 64	31.1%
Age > 64 (reference group)	18.0%
Children aged 0 – 3 at home	13.8%
Children aged 4 – 11 at home	18.1%
Children aged 12 – 15 at home	10.4%
Children aged ≥16 at home (reference group)	13.7%
Female low educated (reference group)	23.8%
Female mediate educated	42.1%
Female high educated	20.5%
Male low educated (reference group)	21.4%
Male mediate educated	32.7%
Male high educated	24.0%
Married/ living together	67.9%
Living in an urban area	10.3%
Religious affiliation**	23.1%
Self reported health	Poor 3.1% Fair 4.6% Good 19.8% Very good 56.9% Excellent 15.5%

** Not observed because without paid job, or not observed because not given*

*** Visiting a church, mosque, temple, or synagogue more than once per month*

Table 2. Use and expenditures per month *of different outsourcing categories per household type (standard deviation between parentheses)

	Couples with children (n=263)	**Couples without children (n=213)**	**Singles with children (n=10)**	**Singles without children (n=195)**
Use outsourcing home cleaning**	30.4%	27.7%	10.0%	32.3%
Expenditures home cleaning per month	€21.97 *(56.83)*	€16.09 *(39.52)*	€3.28 *(16.43)*	€16.78 *(33.72)*
Use outsourcing childcare	25.9%	N.A.	20.0%	N.A.
Expenditures childcare per month	€46.07 *(123.66)*	N.A.	€5.25 *(12.74)*	N.A.
Use outsourcing meal preparation***	87.1%	76.1%	90.0%	70.3%
Expenditures outsourcing meal preparation per month	€95.12 *(155.56)*	€83.83 *(100.46)*	€34.06 *(36.63)*	€50.76 *(61.34)*
Total use of outsourcing	90.9%	81.7%	90.0%	79.0%
Mean total expenditures	€163.16 *(229.72)*	€99.93 *(112.32)*	€42.59 *(44.91)*	€67.53 *(72.87)*
Mean total expenditures/ net household income	10.1% *(21.7)*	5.0% *(7.5)*	7.0% *(19.7)*	7.01% *(10.84)*

Note: N.A. = not applicable
** computed for Judith*
*** Including household help and window cleaner*
***8 Including takeaway food, delivery food, and eating out*

Table 3.Heckman selection model for outsourcing childcare, home cleaning, and meal preparation (standard errors in parentheses)

	Childcare		**Home cleaning**		**Meal preparation**	
	Selection equation		**Selection equation**		**Selection equation**	
Intercept	-2.23	*.859**	-.440	*.432*	1.155	*.488**
Married/ living together	-.888	*.585*	-.302	*.150**	-.231	*.156*
Urban area	-.506	*.410*	.133	*.170*	-.304	*.196*
Health	.233	*.147*	-.0654	*.060*	-.0659	*.069*
Religious affiliation	-.066	*.269*	-.227	*.130*	-.191	*.139*
Children between 0 and 3	2.332	*.263***	.326	*.176*	-.493	*.231**
Children between 4 and 11	.929	*.229***	-.0582	*.165*	-.191	*.202*
Children between 12 and 15	-.142	*.323*	-.218	*.200*	.117	*.245*
Children older than 15	*Reference group*		*Reference group*		*Reference group*	
Age 18 – 34	*Reference group*		-1.02	*.213***	.993	*.246***
Age 35 – 44	.719	*.237***	-.778	*.229***	.605	*.266**
Age 45 – 64	*Reference group*		-.570	*.175***	.171	*.175*
Age > 64	*Reference group*		*Reference group*		*Reference group*	
Female low level of education	*Reference group*		*Reference group*		*Reference group*	
Female medium level of education	.515	*.379*	.163	*.139*	.378	*.146***
Female high level of education	.833	*.423**	.357	*.169**	.539	*.200***
Male low level of education	*Reference group*		*Reference group*		*Reference group*	
Male medium level of education	-.166	*.289*	.179	*.144*	.530	*.160***
Male high level of education	-.093	*.338*	.488	*.158***	.427	*.180**
Female working hours	.005	*.011*	.0147	*.0071**	.004	*.009*
Female working hours not observed	-1.01	*.346***	.262	*.232*	-.313	*.278*
Male working hours	-.010	*.011*	.010	*.006*	-.009	*.008*
Male working hours not observed	-1.03	*.740*	.080	*.292*	-.730	*.353**
	Expenditures equation (ln)		**Expenditures equation (ln)**		**Expenditures equation (ln)**	
Intercept	3.546	*1.524**	4.387	*.582***	4.566	*.156***
Children between 0 and 3	-.613	*.739*	-.206	*.306*	-.190	*.123*
Children between 4 and 11	-.593	*.347*	-.047	*.318*	-.250	*.108**
Children between 12 and 15	-.954	*.552*	.081	*.460*	.092	*.133*
Children older than 15	*Reference group*		*Reference group*		*Reference group*	
Female low level of education	*Reference group*		*Reference group*		*Reference group*	
Female medium level of education	.899	*.620*	-.145	*.267*	.050	*.111*
Female high level of education	1.578	*.653***	.158	*.344*	.178	*.140*
Male low level of education	*Reference group*		*Reference group*		*Reference group*	
Male medium level of education	.812	*.432*	.383	*.281*	.294	*.112***
Male high level of education	1.034	*.471**	.677	*.323**	.380	*.121***
Female wage	.075	*.066*	.017	*.036*	.001	*.001*
Female wage not given	2.123	*.588***	.741	*.437*	.381	*.166**
Male wage	.059	*.066*	-.024	*.037*	.043	*.015***
Male wage not given	.075	*.607*	-.835	*.461*	.340	*.151***
# observations	701		701		701	
Wald Chi2	148.17		40.75		71.63	
Mill's ratio	-.522	*.542*	-.466	*.448*	-.594	*.201**
Rho	-0.489		-0.319		-0.619	

** p<0 .05 ** p<0.01*

Table 4. Expected and significant estimated signs for coefficients (p < 0.05)

	Home cleaning		**Childcare**		**Meal preparation**	
	*Exp *0*	*Conf*0.*	*Exp.*	*Conf.*	*Exp.*	*Conf.*
Working hours female	+	yes	+	No	+	No
Working hours male	+	No	+	No	+	No
Age	–	Yes	+/–	Yes (+ 36-44)	–	Yes
Female wage *1	+	No	+	No	+	No
Male wage *1	–	No	–	No	–	No (positive)
Married/ cohabiting	–	Yes	–	No	–	No
Children living at home	+	No	+	Yes (less than 11 years)	–	Yes *4 (0-3years)
Level of education female	+	Yes	+	Yes*2	+	Yes
Level of education male	+	Yes*2	+	No *3	+	Yes *2
Living in an urban area	+	No	+	No	+	No
Religious affiliation	–	No	–	No	–	No
Health	–	No	–	No	+	No

Legend:
**0 Exp. = Expected; conf. = Confirmed*
** 1.variable included in cost equation*
**2 variable also significant in cost equation*
**3 variable significant in the cost equation*
**4 in selection equation less than three years old and in cost equation 4- 11years odt*