

TRADE-OFF OF EXPENDITURES FOR FOOD AWAY FROM HOME FOR THE WIFE'S HOUSEWORK TIME BY EMPLOYMENT STATUS

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ABSTRACT

This research studies the impact of wives' housework time reduction of expenditures for food away from home. Results of the tobit analysis indicate that for both employed and non-employed wives, expenditures for food away from home are significantly and negatively related to housework time; however, employed wives spend twice as much for food away from home for every hour of reduced housework time than non-employed wives. The wife's estimated wage rate was positively related to food away from home expenditures. As income increases, wives will spend more on food away from home, but at a decreasing rate.

INTRODUCTION

Household expenditures for food away from home have been rapidly increasing since 1980. US households spend twice as much on food away from home today than 15 years ago (Consumer Expenditure Survey, 1996). Simultaneously, wives, particularly those with children, have been increasing their labor force participation during this same time period. The concurrence of these two phenomena suggests that wives who allocate time to the labor market might decrease the time they spend in housework and therefore purchase food away from home to substitute for their reduction in meal preparation and clean up.

The literature to date has focused on relationships between expenditures for food away from home and the wife's employment status. Horton and Campbell (1991) and Kinsey (1983) found that employed wives spend significantly more on expenditures for food away from home than non-employed wives. McCracken and Brandt (1987) concluded that expenditures for food away from home are influenced positively by the wife's value of time which was imputed from her education and skills, whereas, Bellante and Foster (1984) found that the wife's time in the work force was positively and significantly related to expenditures for domestic services. These authors have assumed that the decision to join the workforce or to increase the number of hours in the workforce leads to a decrease of housework time that influences expenditures for food away from home. However, the increase in labor market time is not equal to the reduction in housework time (Roberts and Rupert, 1995). On average, employed wives were reducing their leisure time but not the amount of time they spent in housework. Therefore, a direct observation of the trade-off of expenditures for goods and services for the wife's housework time would provide a more accurate description of her restaurant meal consumption behavior. The literature has not accounted for the possibility that housework time may, in fact, remain constant even though time in employment has changed. It also does not account for changes in housework time by non-employed wives who choose to increase their leisure time.

The purpose of this research was to examine the impact of the wife's housework time on expenditures for food away from home. The influence that a decrease in the wife's housework time has on expenditures for food away from home is estimated in order to anticipate trends in food consumption. A comparison between employed and non-employed wives' housework time was evaluated to determine if differences between these wives' expenditures for food away from home exist. This case study on food away from home is one example of the direct trade-off of market goods for reduced housework time that has been posited in the literature.

THEORETICAL MODEL

This research is grounded in the time allocation theory presented by Gary Becker (1965). Becker observed that consumers receive utility from commodities that require market goods and housework time. For example, family members need a home meal in which time in shopping, preparation and clean-up along with the food ingredients are necessary inputs. Households must decide to purchase meals away from home or prepare them at home. Equation 1 expresses this trade-off between home meals and restaurant meals.

$$U = U(Z_m, RM), \quad (1)$$

where Z_m represents home made meals and RM represents restaurant meals consumed. The limiting factors in making the decision to purchase meals or make meals are income and time. In order to focus on the trade-off

between restaurant meals and the wife's housework time, the structural model for the quantity demanded of restaurant meals is:

$$RM = f(P_{RM}, w, t_m, V), \quad (2)$$

where P_{RM} represents the price of a restaurant meal, w is the wife's wage rate, t_m is the time she spends in meal making and V is her income. The number of restaurant meals that a household would demand is dependent upon the price of the meal, the value of the wife's time, the amount of time the wife allocates to housework, and other income. From this theoretical framework, three hypotheses were formulated:

H1 - There is a positive relationship between the value of the wife's time and the number of restaurant meals demanded.

H2 - There is a negative relationship between the amount of time the wife allocates to housework and the number of restaurant meals demanded.

H3 - There is a positive relationship between other income and the number of restaurant meals demanded.

The data set used to study the relationship between housework time and restaurant meals was obtained from Wave XX of the Panel Study of Income Dynamics (PSID) conducted by the Institute of Social Research at the University of Michigan. This data set contains demographic and economic information on 7,061 households. Only families with employed husbands were included; thus, 3,408 families were used in the analysis. Each head of household was asked a series of questions about sources and amounts of income, labor market activity, family characteristics, personal background information, as well as a parallel set of questions about the spouse.

Expenditures for food away from home (FAFH) was the proxy for restaurant meals and was measured in annual dollars spent. The wife's housework time (HTIMEW) specified the weekly number of hours the wife spend in housework. The wife's wage rate was estimated (WAGEST) in order to include the value of time for non-employed wives. Other income (OINC) was the total annual household income less the wife's annual income. Family size (FAMSZ), presence of a child under 6 years old (AGE1), residence in a metropolitan area (SMSAY), and race (NONWHITE) comprised the family characteristics that have been found to impact expenditures.

Empirical Model

From Becker's (1965) time allocation theory and household characteristics that have been found to influence expenditures for food away from home, the empirical model to be estimated is:

$$FAFH = \alpha + \beta_1 HTIMEW + \beta_2 WAGEST + \beta_3 OINC + \beta_4 OINC^2 + \beta_5 FAMSZ + \beta_6 AGE1 + \beta_7 SMSAY + \beta_8 NONWHITE + \epsilon.$$

The inclusion of the wife's housework time as a determinant of the demand for food away from home differentiates this model from previous research. To evaluate the impact of the wife's wage rate, other income, and the wife's housework time on expenditures for food away from home, tobit regression was used.

FINDINGS

The descriptive statistics for both employed and non-employed wives are shown in [Table 1](#). Average expenditures for FAFH for families with employed wives are approximately 15% higher than families with non-employed wives (\$1033.30 and \$896.64, respectively). Employed wives spend more on FAFH, which could be due to the wives' time limitations in housework or greater income generated by two earners. As would be expected, non-employed wives spend nearly 75% more in housework time than employed wives (33.76 hours per week and 19.68 hours per week, respectively). This difference could explain, in part, the difference in expenditures for FAFH.

Other income for families with non-employed wives is approximately 15% more than for families with employed wives (\$36,695 and \$31,400, respectively). The average estimated wage rate for employed wives is more than one-third higher than for non-employed wives.

The remainder of the variables, family size, age of the youngest child, urbanicity, and race are quite similar for employed and non-employed wives. Family size is slightly bigger for non-employed wives and age of the youngest child is slightly younger than for employed wives.

The results of the tobit regression are found in [Table 2](#). For both employed and non-employed wives, housework time has a negative and significant influence. A decrease of one hour per week of housework time for employed wives results in an increase in expenditures for FAFH by \$4.20 per year; whereas, one hour decrease of

weekly housework time for non-employed wives results in an increase in \$10.54 per year. The finding that non-employed wives substitute more expenditures for food away from home for housework than employed wives would seem to be contradictory to what might be predicted. According to family economics, pressures on time due to employment would result in an increase in substitutes as a strategy for alleviating those pressures and constraints (Hafstrom and Schram, 1983). The discrepancy between these findings and the pressures hypothesis could be explained, in part, by the notion that non-employed wives refrain from the labor market because they enjoy cooking, social or volunteer activities, or child care. These non-employed wives may insist upon a higher quality restaurant to substitute for their meals. Employed wives, on the other hand, may purchase fast food meals, which are less expensive, because they are limited on the time they can allocate to housework and leisure. However, the magnitude of the substitution of expenditures for food away from home for housework time was found to be surprisingly small.

As predicted, income greatly influences expenditures for food away from home. As income increases, expenditures for food away from home also increases for both employed and non-employed wives. However, as other income increased, it did so at a decreasing rate. This was much more prevalent for households with employed wives than non-employed wives. One possible explanation is that employed wives prefer to spend their increased income on other items, such as domestic services, rather than more or higher quality restaurant meals.

Family size is negatively related to expenditures for food away from home. This suggests that larger families may not afford to feed all the members by eating out as frequently as smaller families. Larger families must eat more meals at home where economies of scale in home meal production may be attained.

Residing in an urban area appears to affect expenditures for food away from home. The positive sign on residing in an urban area supports the idea that the more accessible food away from home is for families, the more likely they are to consume it. Additionally, families residing in rural areas often have the resources to produce their own vegetables, thus providing relatively less expensive home produced meals.

The tobit coefficients for non-white are negative and significant. These results support the notion that non-white families spend less for food away from home than white families, holding all else constant, regardless of the wife's employment status. The relatively fewer ethnic restaurants may affect expenditures for food away from home. If ethnic groups cannot find restaurants to substitute for their home meals, they will continue to allocate time to meal work.

The presence of a child under six years old was not found to be significantly related to expenditures for food away from home. This could be due to the changing environment of restaurants for families with small children. Some families may feel that it is acceptable to eat out with small children, whereas other families may be opposed to taking small children to restaurants for meals.

CONCLUSIONS AND IMPLICATIONS

Wife's estimated wage rate was found to be positively related to expenditures for food away from home (H1). The results from the tobit model support this hypothesis for employed wives only. As the price of the employed wife's time increases, she will allocate more time to the labor market and less time to housework. She will substitute more market goods and services for the housework activities that she forgoes. The results from the tobit model for wife's housework time for employed and non-employed wives support the substitution hypothesis (H2). An increase in wife's housework time is associated with a decrease in expenditures for food away from home, regardless of the wife's employment status. The income hypothesis (H3) is supported from the results in the tobit model. As other income increases, wives increase their expenditures for food away from home, regardless of their employment status. Additionally, results provide further evidence that the increase in purchases of FAFH occurs at a decreasing rate as other income increases.

The substitution of goods and services for time in household work may provide additional insight into the value of non-market work, which has been ignored in the Gross Domestic Product. The trade-off between a household's time spent in housework and expenditures for substitutable market goods and services may allow researchers to re-examine the well-being of household members and could be useful for establishing equivalence of real income of different households.

These results imply that certain family characteristics influence how much is spent for food away from home as well as the quality of food. Employment status of the wife appears to be a significant factor in determining quantity and quality of restaurant meals. High income households will spend more for food away from home than low income, however, as income increases, expenditures for food away from home increase at a decreasing rate. Also, family size, geographic location, and race influence expenditures for food away from. Being able to identify households that have the greatest need for food away from home will help marketers of various types of restaurants target these households and strategically prepare a marketing plan to meet those needs.

Table 1
Means and Standard Deviations of Variables by Wife's Employment Status

Variable	Employed Wives	Non-employed Wives
FAFH, annual dollars	\$1033.64 (1065,30) ^a	\$896.64 (1141.50)
HTIMEH, hours per week	19.68 (11.95)	33.76 (17.25)
OINC, annual dollars	\$31,400 (24,708)	\$36,695 (44,330)
WAGEST	\$8.10 (2.54)	\$5.08 (3.62)
FAMSZ	3.47 (1.23)	3.82 (1.38)
AGE1	4.25 (5.09)	3.74 (4.60)
N	2619	789

^a Standard deviations are in parentheses.

Table 2
Tobit Estimates of Coefficients for Wife's Annual Expenditures for Food Away
From Home by Employment Status

Variable	Employed Wives	Non-employed Wives
HTIMEW	-4.20 (-2.31)**	-10.54 (-4.91)**
OINC	.03 (15.633)**	.02 (11.563)**
OINC squared	-6.92×10^{-7} (-7.44)**	$-.162 \times 10^{-7}$ (-4.82)**
WAGEST	6.49 (1.97)*	4.36 (1.00)
FAMSZ	-105.94 (-5.66)**	-79.43 (-2.83)**
SMSAY	166.67 (3.82)**	163.77 (2.02)*
NONWHITE	-205.50 (-4.15)**	-381.22 (-4.00)**
AGE1	-29.03 (-.62)	-42.46 (-.49)
Constant	413.30 (3.02)	578.11 (2.78)
Sigma	1013.4 (68.86)**	1010.0 (36.81)**
Log-likelihood	-20399.0	-5860.4

^aT-ratios are in parentheses.

*p <.05, **-<.01

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<http://www.springer.com/978-3-319-13077-4>

Proceedings of the 1999 Academy of Marketing Science
(AMS) Annual Conference

Noble, C.H. (Ed.)

2015, XXXII, 429 p., Hardcover

ISBN: 978-3-319-13077-4