# THE ALLOCATION OF TIME: PREPARED FOOD OR PREPARING FOOD?

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## ABSTRACT

This paper examines how individuals make decisions on the allocation of time for food preparation. Based on the 2005 American Time Use Survey data, Tobit estimates show that hours of work have a significant effect on one's allocation of time for preparing food at home but not for purchasing prepared food. Time spent on family care and leisure increases time spent for both preparing food at home and for purchasing prepared food, and that varies by gender and by socio-economic characteristics. Highly educated individuals are likely to devote more time to purchasing prepared food, but apparently not for preparing food at home. These findings confirm the varied effect of socio-demographic differences on one's decision to allocate time for food preparation.



Key Words: Time allocation, Household production, Labor supply

JEL Classification: D13, J22

# I. INTRODUCTION

The food consumption behavior of each household not only varies by differences in socio-economic characteristics and income structure (Yen, 1993; Lee and Brown, 1986; Kinsey, 1983) but also by the value of the homemaker's time (Prochaska and Schrimper, 1973; Becker, 1965). Food preparation and consumption occupy scarce time, and households may choose among prepared-food-at-home (home-cooked meals), prepared food, or food-away-from-home.

The trends in food expenditure in the U.S. have changed noticeably for the last few decades. Food-at-home expenditure increased by 36 percent between 1954 and 1978 (Kinsey, 1983), by 8 percent between 2003 and 2004 (Blisard and Stewart, 2007), and is expected to increase by only 3 percent by 2020 (Blisard et al., 2002). On the other hand, food-away-from-home expenditure increased by 80 percent between 1954 and 1978 (Kinsey, 1983), by 9 percent between 2003 and 2004 (Blisard and Stewart, 2007) and is expected to increase by 10 percent by 2020 (Blisard et al., 2002). In response to the changing pattern of food consumption and the rapid increase in the demand for convenience food by consumers, 81 percent of supermarkets had deli sections in 2000, and prepared-food sales at delis increased by 6.1 percent in that same year (Martinez and Stewart, 2003).

Numerous studies, which focus on food consumption behavior, document that two-earner households, which face the rising value of non-working time as a result of an increase in working hours and income, substitute food-away-from home for food-at-home (Ziol-Guest et al., 2006; Byrne et al., 1996; Yen, 1993; Lee and Brown, 1986; Sexauer, 1979; Hacklander, 1978). Further, some studies show that households increase their food-away-from-home consumption primarily due to an increase in their income (Yen, 1993; Lee and Brown, 1986; McFall Lamm, 1982).

These results indicate that the reduction in non-working hours increases food-away-from-home expenditure and reduces food-at-home, substituting food-away-from-home for food-at-home.

On the other hand, Prochaska and Sheimper (1973) finds that higher incomes led individuals to spend more money on meals eaten out but did not necessarily lead them to eat more meals-away-from-home. Kinsey (1983) found that households with women working part time increased their expenditures on food-away-from-home more than households with women who worked full time given the same income, suggesting that households with higher market work hours reduce food-away-from-home expenditures.

Further, Carlson et al. (2002) find that as the value of time increases, due to more hours of market work, this leads to less time spent eating out or cooking at home, and an increase in income may even decrease expenditure on food-away-from-home as individuals substitute fast-foods or take-out foods for leisurely dining away from home. Park and Capps (1997) estimated the demand for prepared food by U.S. household and concluded that prepared food and food-away-from-home are substitutes and that those households with younger, more educated, and time-constrained homemakers are likely to choose prepared foods. These results suggest that the reduction in non-working hours as a result of more working hours (and thus higher income) decreases food-away-from-home expenditure, substituting prepared food for food-away-from-home.

Inconclusive results on food consumption behavior in relation to hours of work, income, the reduction in non-market hours and the costs of food production poses a question about how households allocate their scarce time for eating-food activities in the modern era. Do households choose food-at-home because of reductions in food preparation time and costs (and thus reductions in the opportunity cost of eating at home) as a result of easier access to labor-saving

kitchen equipment, new food technologies, or convenience foods? Are households better off with food-away-from-home, taking advantage of the continuous growth and development in commercial food service establishments? Should households participate in the new trend of high-quality-prepared-food or grab-and-go-food from the modern supermarket deli or food service establishments?

Using the 2005 American Time Use Survey (ATUS) data, this paper examines how time-constrained households make decisions on food preparation and how their decision on whether to engage in preparing food at home or in purchasing prepared foods affects their non-working hours. This paper also evaluates how socio-demographic differences affect individuals' time use decision for non-market hours, particularly for food preparation. A Tobit model is used to investigate the proposed questions.

The results of this study confirm that long hours of work, time spent on family care, the amount of time spent on socializing, relaxing and leisure, and the level of education significantly influence one's decision to allocate time to preparing food at home. Additionally, the allocation of time on preparing food at home varies by gender, by the number of persons in the household, and by the employment status of each household. Households with children and women who work long hours reduce their time spent on preparing food at home relative to their counterparts, who work zero hours. Households with children and men, who spend more time on family care and/or leisure, are likely to devote more time to preparing food at home. While highly educated men are likely devote more time to preparing food at home, working women and households with children are likely to reduce their time on this activity. Further, hourly wages and family income did not play a role in determining time spent on preparing food at home.

The empirical results further suggest that time spent on family care and the amount of time spent on socializing, relaxing and leisure, and the level of education affect time spent on purchasing prepared food. Particularly, spending up to an hour per day on family care has a positive effect on one's decision to purchase prepared food. Respondents in the sub-samples increased time spent on purchasing prepared food by 12-15 minutes relative to those who spent zero hours on family care. Women and households with children, who spent more time on leisure, are likely to increase their time spent on purchasing prepared food. However, this trend is not apparent for men and households without children under age 18. Regardless of the presence of children and the status of employment in the household, more educated individuals are likely to spend more time on purchasing prepared food. Additionally, the allocation of time to this activity increases with the level of education. Hourly wages and family income had no impact on the allocation of time to purchasing prepared food.

## II. THEORY AND MODEL

The household production model assumes that the household maximizes utility and that utility is a function of consumption goods (Z), which are produced by the household for its own consumption using non-market time (T), and goods and services that are purchased in the market (X) (Michael and Becker, 1973; Becker, 1965). Then, the household utility function can be specified as

$$U = u(z_1, z_2, \ldots\ldots z_n) \tag{1}$$

The household faces a production function, time constraint, and full-income constraint, respectively:

$$z_i = z_i\,(x_i, t_{i1}, t_{i2}, \ldots.. t_{ij}), \qquad i = 1,2, \ldots., n \tag{2}$$

where $z_i$ is the commodity $i$ produced in the household, $x_i$ is consumer good used in producing $z_i$, and $t_i$ is the household's time spent in producing $z_i$.

$$T_k = t^m_k + \sum_{i=1}^{n} t^h_{ik}, \qquad k = 1,2, \ldots, j \tag{3}$$

where $T_k$ is total time available to household member k($T_1 = T_2 = \ldots = T_j$), $t^m_k$ is the time input by household member $k$ in market production, and $t^h_{ik}$ is time spent by household member $k$ in producing $z_i$.

$$I = \sum_{i=1}^{n} p_i x_i = \sum_{k=1}^{j} w_k t^m_k + v \tag{4}$$

where $p_i$ is the price of $x_i$, $w_k$ is the wage rate for household member $k$, and $v$ is unmeasured income.

The utility function (1) is maximized subject to the constraints of the production function (2), time constraint (3), and the full income constraint (4), with respect to $x_i$ and $t^h_{ik}$. The demand function for $x_i$ will be:

$$x_i = f(p_1, \ldots p_n, w_1, \ldots .w_j, v) \tag{5}$$

I follow Yen's (1993) approach and I consider food preparation for all respondents, men, women, one- and two-earner families. Hence the food preparation equation is specified as:

$$p_i x_i = f(t^m, w, v, \mathrm{D})$$

where $t^m$ is time spent by a household member in producing a commodity; w is the wage rate; $v = w_i t^m_i + v$ is the household exogenous income; and D is a vector of demographic variables.

I expect a positive relationship between time spent on preparing food at home and explanatory variables when time spent on preparing food at home reduces the monetary cost of

food and others options are more expensive, or *vice versa*. Similarly, I expect that there is a positive relationship between time spent on purchasing prepared food and other explanatory variables, as long as the time spent on purchasing prepared food reduces the monetary cost of food and other options are more expensive, or *vice versa*. However, the expected sign between food preparation choice and selected variables will also be affected by gender, household structure, and other socio-economic characteristics.

## III. DATA

This paper uses the American Time Use Survey (ATUS) data for the year 2005. The ATUS respondents are selected from a subset of households that have completed their eighth and final month of interviews for the Current Population Survey (CPS) data.

The microdata that are used in this paper include three sources: (1) the ATUS respondent file; (2) the ATUS activity summary file; and (3) the ATUS-CPS file. The ATUS respondent file collects information on the demographic status of the ATUS respondents (such as age, sex, race, ethnicity, educational attainment, marital status, metropolitan living status, wage, weeks worked, occupation, and industry). The ATUS activity summary file contains information collected in the ATUS diary and includes ATUS respondents' detailed accounts of their activities on the diary date for a 24 hours window, starting at 4 AM on the day before the interview and ending at 4 AM on the day of the interview. The ATUS-CPS file gathers one record per household member for all households in which an individual was selected to participate in ATUS and contains the household member's demographic status. All information on this file is from the eighth CPS

interview and dates from 2-5 months prior to the ATUS interview.[1]

The 2005 ATUS data has obtained seven days of diaries by 13,038 respondents and includes household members aged 15 and older. In this paper, I focus on individuals who are under the retirement age (individuals aged 18-65) at the survey date. After restrictions, the sample size is reduced to 10,417. Of the respondents, 4,551 were men and 5,866 were women. The 2005 ATUS diaries include over 400 categories of time use.[2] Key time use categories of interest in this paper are time spent on preparing food, purchasing food, and the socio-demographic status of respondents.

## IV. DESCRIPTIVE ANALYSIS

This section summarizes relevant individual and household characteristics of the sample data and the average time spent (in minutes per day) for selected daily activities by all respondents, by gender, and by the various socio-demographic characteristics of households.

Table 1A shows selected characteristics of individual respondents. In the 2005 ATUS sample, about 50 percent are ages 26-45, about 40 percent are ages 46-65, and the remaining 10 percent are ages 18-25. The distribution is similar when the sample is separated by gender. About 42 percent of the population in the full sample is unmarried, and 39 percent of men and 45 percent of women are unmarried. Approximately 27 percent, 21 percent, and 12 percent of the population has a High School diploma, Bachelor's degree, and Advanced (Master's, Professional,

[1] In the ATUS-CPS file, 3482 respondents (out of total 13038 respondents) were interviewed in the 2004 calendar year.

[2] Time use categories include personal care (01), household activities (02), caring for and helping household and non-household members (03, 04), working and work-related activities (05), education (06), consumer purchase (07), professional and personal care services (08), household services (09), government services and civic obligations (10), eating and drinking (11), socializing, relaxing and leisure (12), sports, exercise, and recreation (13), religious and spiritual activities (14), volunteer activities (15), telephone calls (16), and traveling (18).

and Doctoral) degrees, respectively, in the full sample. The percentage of individuals with a high school diploma is the same among men and women, while more men earn Bachelor's and Advanced degrees then women. As for their living status, over 80 percent of population was living in metropolitan areas in 2005.

Table 1B presents selected characteristics of households. Within households, 56 percent are the ones with children under age 18 and about 40 percent of households have a full-time-working spouse. Using the limited data, about 24 percent are two-earner households, 29 percent are two-earner households with children under age 18, and 18 percent are two-earner households without children under age 18.[3] On the other hand, 31 percent of households consisted of one full-time working individual (and the other members are not in the labor force) and 37 percent of households are one full-time working individual (and the other are not in the labor force) with children. Further, approximately 22 percent of households are one full-time working individual (and the other members are not in the labor force) without children.

Table 2 provides both the unweighted mean and weighted average of time spent for selected daily activities. Simple tabulation of unweighted ATUS data produces either upward or downward biased results; hence, the weighted average time spent for each activity is calculated using the average-hours-per-day formula.[4] I focus on the weighted average time spent to analyze how individuals allocate their time on daily activities in this section.

The table shows that the average food preparation time for all respondents was 34 minutes per day. Women spent more time on food preparation than men (49 minutes vs. 18 minutes). Households with children under age 18 spent more time than households without children (41

[3] Over 50 percent (5461 out of 10417) of individuals in the full sample did not reported respondents' and or spouses' employment status. Further information is available at Table 1B.
[4] Detailed description is available at American Time Use Survey User's Guide 2007.

minutes vs. 29 minutes), which confirms that the presence of children in the household increases time spent on preparing food at home. Two-earner households spent 43 minutes and two-earner households with children under age 18 spent the longest, 50 minutes, for food preparation. One-earner households spent 30 minutes. Those households with children spent slightly more, 33 minutes. One-earner households without children spent 27 minutes per day. These results may result from the time-allocation decision by the time-constrained-working-wife aiming for economies of scale in food preparation that lowers the time price of food consumption.

Table 2 also shows that the average time spent purchasing prepared-food by all respondents was 3.5 minutes per day. Women and men spent 4 minutes and 3 minutes, respectively, on this activity. As expected, households with children under age 18 require more time than households without children under that age for purchasing prepared-food (4 minutes vs. 3 minutes). Two-earner households with children under age 18 spent the longest, 5 minutes, obtaining prepared-food. This result may be caused not only by the presence of children in the household but also because the time-constrained-full-time-working-wife households rely more on prepared-foods and thus increase their time spent on purchasing prepared-food. One-earner households spent 4 minutes. Those households with children spent slightly more, 4.5 minutes. One-earner households without children spent 3.5 minutes per day.

Minutes worked are the weekly weighted average, including Saturday and Sunday. The weighted average working hours for all respondents was 4 hours per day. While men worked the longest hours, 4.8, women worked the least, 3.3 hours per day. Households with children under age 18 spent 3.9 hours at work and those without children under age 18 spent 4.1 hours, which implies that the presence of children in the household had very little effect on hours worked for each household. On the other hand, two-earner households with children under age 18 worked

only 3.7 hours per day, while two-earner households spent 4.10 hours at work. It indicates that the presence of children slightly reduces hours worked for a household. In the case of one-earner households, those with children and those without children spent 5.9 hours and 3.9 hours at work per day, respectively, while one-earner households in general spent 5.8 hours at work. These results show the effect of the presence of children on hours worked.

Socializing, relaxing, and leisure time varies by the socio-demographic characteristics of households. Average time for these activities for all respondents was 4.1 hours per day. Households without children under age 18 spent the longest time, 4.5 hours, followed by men who spent 4.4 hours. Women spent slightly less hours (3.9 hours) than men. As expected, having a full-time-working wife or children under age 18 in the household reduces leisure time to 3.7 hours. Both two-earner households with children under age 18 and one-earner households spent the least leisure time, 3.4 hours. One-earner households with children spent slightly less time on these activities, 3.1 hours. One-earner households without children spent 3.6 hours per day.

## V. EMPIRICAL STRATEGY

The objective of this paper is to analyze the time allocation decision of households for food preparation – preparing food at home and purchasing prepared food – and to examine how socio-demographic differences affect individuals' time use decisions for non-market hours, with particular attention to food preparation choice.

When households spent zero minutes for food preparation, either preparing food or purchasing prepared food, there will be a zero value for these observations. Since food preparation is the dependent variable, a zero value for these observations leads to censored

response bias. In this case, conventional regression methods fail to account for the qualitative differences between zero observations and continuous observations; hence, I employ the following estimation equation, using the Tobit model.

$$Y_i = \alpha + \beta_1 T^w{}_i + \beta_2 T^{fc}{}_i + \beta_3 T^l{}_i + \gamma_g X_{gi} + \varepsilon_i, \quad \text{if } Y_i > 0$$
$$0, \text{ otherwise} \qquad (6)$$

where the amount of time spent per day in food preparation ($Y_i$ : $Y^1{}_i$ is prepare food at home; $Y^2{}_i$ is prepared food) is a function of: (1) the amount of time spent per day in working ($T^w$); (2) the amount of time spent per day in family care ($T^{fc}$); the amount of time spent per day in socializing, relaxing and leisure ($T^l$); (3) control variables ($X$) include: (i) hourly wage ($w$); (ii) family income ($I$); (iii) hours worked of spouse or unmarried partner ($h^p$); (iv) respondent's age (age); (v) respondent's race; (vi) respondent's educational attainment; (vii) respondent's marital status; (viii) respondent's labor force status (part-time or full-time); (ix) metropolitan living status; (x) region; and (4) a mean zero individual error term ($\varepsilon_i$). The subscript $i$ refers to each individual and the subscript $g$ refers to each control variable.

The inclusion of hourly wage, hours worked, and employment status also leads to the case in which explanatory variables in the equation contain a zero or no value for these observations when individuals spent zero minutes at work, and thus earn zero dollars, and "blank" for their employment status, which causes selection bias in the estimation. The exclusion of such observations could damage the existing representation of the full population and could result in biased estimation. As a primary investigation, I estimate the proposed estimation equation for five specifications: (1) all respondents; (2) men and women, separately; (3) households with children under age 18 and those without children, separately; (4) two-earner

households with children under age 18 and those without children, separately; and (5) one-earner households with children under age 18 and those without children.

## VI. EMPIRICAL RESULTS

This section examines the results of the Tobit estimates, shown in Table 3 for time spent on preparing food at home and Table 4 for time spent purchasing prepared food. I examine the allocation of time for food preparation in accordance with time spent on other daily activities and difference in socio-demographic characteristics of respondent, which also vary by gender, by household status, and by employment status.

### 1. Time Spent for Preparing Food at Home

Table 3 shows the effect of hours worked, family care, leisure, and selected socio-demographics on time spent on preparing food at home in 2005. The empirical results are examined by daily activities and by socio-demographic characteristics.

#### (1) Hours Worked

Working up to hour hours (1-240 minutes) per day reduced time spent on preparing food at home by 7 minutes for all respondents, by 10 minutes for men, and by 8 minutes for households with children under age 18, relative to their counterparts who worked zero hours. Women, households without children under age 18, and both two- and one-earner households showed no

effect on time spent on preparing food at home if they worked up to four hours per day, relative to their counterparts with no hours of work.

However, working more than four hours (more than 240 minutes) per day significantly reduces the respondent's time spent on preparing food at home (by 27-38 minutes) for all specifications. Particularly, women and households with children under age 18, regardless of their employment status, reduced their time spent on preparing food by 31-37 minutes compared to their counterparts. Empirical results confirm that an increase in work hours reduces time spent on food preparation at home. Particularly, being women and having children in the household has a significant effect on the time spent on food preparation (Mancino and Newman, 2007).

**(2) Family Care**

Time spent on family care has a positive effect on the time spent preparing food at home, except for two- and one-earner households without children age under 18. Time spent up to an hour (1-60 minutes) per day on family care increases food preparation at home by 26 minutes for men, by 19 minutes for households with children, and by 9 minutes for two-earner households with children, relative to their counterparts who spent zero hours on family care. Women increase their food preparation by about 10 minutes, which may reflect the fact that women are engaging in multiple activities, family care and preparing food, and thus it leads to less time on preparing food at home.

As time spent on family care increases up to two hours (61-120 minutes) per day, respondents increased their time spent on preparing food at home relative to their counterparts. For example, men, two-earner households with children, and one-earner households with

children increased their time spent on food preparation to 33 minutes, 20 minutes, and 25 minutes, respectively, compared to their counterparts. These results indicate that respondents, who allocate more time to family care and thus are more time constrained, engage more in preparing food at home, in hope of acquiring economies of scale from home food production and engaging in overlapping activities (Floro and Miles, 2003).

However, when time spent on family care exceeds 2 hours (more than 120 minutes), time spent on preparing food becomes less, although it is still positive, with the exception of men. Women only spent 19 minutes, two-earner household with children spent 13 minutes, and one-earner households with children spent 19 minutes on preparing food, relative to their counterparts. It implies that respondents, who spend significant time on family care, face time constraints, which reduces the allocation of time to preparing food at home.

These results suggests that households devote time to food preparation at home as long as time spent on this activity reduces the monetary cost of food and family care costs relatively more.

**(3) Leisure**

Time spent on socializing, relaxing, and leisure also has a positive effect on time spent preparing food. Respondents who spent up to two hours (1-120 minutes) per day for leisure allocated 13-22 minutes more time to preparing food at home relative to their counterparts who had zero hours of leisure, except for two-earner households without children under age 18.

An increase in leisure time of up to 2-4 hours (121-240 minutes) per day further increases time spent on food preparation at home for all respondents. For example, households with

children, regardless of their employment status, spent an additional 16-30 minutes and households without children spent 36-40 minutes more on preparing food at home, relative to their counterparts. It shows that households, particularly ones with children, increase time spent on preparing food at home as leisure time increases.

When time spent on leisure exceeds 4 hours (more than 240 minutes) per day, men and households without children spend an additional 20 minutes and 24 minutes, respectively, on food preparation. Two-earner households and even one-earner households did not adjust time spent on preparing food at home by spending additional time on leisure. This suggests that having sufficient time for leisure induces some respondents to spend more time on preparing food; however, others may decide not to engage in food preparation at home and rather substitute prepared-food or food-away-from-home for preparing food at home.

**(4) Education**

The level of education has different effects on an individual's time spend on preparing food at home. Highly educated men are likely to spend more time (8-28 minutes) on food preparation at home, relative to those who have a high school education but no diploma. It shows time spent on preparing food by men increases with the levels of education and of income (Mancino and Newman, 2007). On the other hand, highly educated women and high-education-headed households with children are likely spend less time (19-30 minutes and 6-12 minutes, respectively) on preparing food at home, compared to their counterparts. This result indicates that highly educated women, who are likely to spend more time in the labor market, face time constraints and thus reduce time spent on food preparation at home accordingly.

As expected, highly-educated-one-earner households without children spent less time (24-44 minutes) on food preparation than their counterparts who have a high school education but no diploma. It indicates that the absence of children induces households to consume food outside the home. However, highly-educated-two-earner households without children showed no effect on time spent on preparing food at home, although those with Associate or Bachelor's degrees reduced their time spent on food preparation at home (33 minutes and 26 minutes, respectively, statistically significant at the 10 percent level), relative to those who have a high school education but no diploma. These results indicate that not only the level of education but also the market hours of a household, which affect hours worked within a household, influence time spent on preparing food at home even with the absence of children in the household.

**(5) Hourly Earnings and Income**

As expected, an increase in hourly earnings reduces the time spent preparing food at home, but it is only true for women and households with children, regardless of their employment status. Family income, unexpectedly, had no effect on the determinant of time spent on preparing food at home among all specifications. Households in which one party holds a full-time job and the other party holds a part-time job reduced time spent preparing food by 9-22 minutes, compared to households with two parties holding part-time jobs. On the other hand, households in which both parties hold a full-time job reduced time spent preparing food by 6-8 minutes, relative to their counterparts. These results suggest that the availability of non-market hours has more a significant effect than family income in determining time spent on preparing food at home within the household.

## 2. Time Spent on Purchasing Prepared Food

Table 4 shows the effects of hours worked, family care, leisure, and selected socio-demographics on time spent on purchasing prepared food in 2005. The empirical results are examined by daily activities and by socio-demographic characteristics.

### (1) Hours Worked

Working up to hour hours (1-240 minutes) per day increased time spent on purchasing prepared food by 6 minutes for the samples of all respondents and by 8 minutes for women relative to their counterparts who worked zero hours. It indicates that those respondents are likely substituting prepared food for food-at-home or food-away-from-home. On the other hand, working up to four hours per day reduced time spent on purchasing prepared food by 24 minutes for one-earner households without children under age 18, relative to their counterparts who worked zero hours. One might argue that it is puzzling to see this result; however, households that have both time and a stable income might substitute prepared food (or home food) for food-away-from-home, which leads to reduction in prepared food consumption.

Long hours of work hours reduce non-market hours, and thus I expect time spent on purchasing prepared food increases. However, working more than 4 hours has no effect on time spent purchasing prepared food relative to their counterparts who worked zero hours. This result is from the fact that average time spent on purchasing prepared food in 2005 is a small portion of their time use (3-4 minutes) and thus it had no effect. Further investigation is required to confirm this argument.

### (2) Family Care

Time spent up to an hour (1-60 minutes) per day on family care increases time spent on purchasing prepared food, except for households without children age under 18. For example, households with children, regardless of their employment status, that spent up to an hour per day on family care devoted 12-15 minutes more on purchasing prepared food relative to their counterparts who spent zero hours on purchasing prepared food. Men and women spent 14 minutes and 13 minutes more, respectively, on this activity relative to their counterparts. Interestingly, while one-earner households without children spent 21 minutes more on purchasing prepared food, two-earner households without children spent 12 minutes more, relative to their counterparts. The effect of 1-60 minutes spent on family care seems to have a similar effect on the time spent purchasing food among all respondents.

As expected, most respondents in the households without children spent no more than an hour per day on family care. Among those, both two- and one-earner households spent 12 minutes and 21 minutes more, respectively, on purchasing prepared food compared to their counterparts who spent zero hours per day on family care. Men and women spent 12 minutes and 10 minutes more, respectively, on this activity than their counterparts. When respondents increase their family care time to more than 4 hours per day, time spent on purchasing prepared food is similar (12-13 minutes) among those whom we examined previously.

### (3) Leisure

Time spent on socializing, relaxing, and leisure has a positive effect on time spent for purchasing prepared food only for the samples of all respondents, women and households with

children. For example, time spent up to two hours (1-120 minutes) for leisure per day led all respondents to allocate an additional 11 minutes on this activity relative to their counterparts who spent zero hours on leisure. Households with children and women devoted an additional 14 minutes and 19 minutes, respectively, for purchasing prepared food, relative to their counterparts.

As time spent for socializing, relaxing, and leisure increases up to four hours (121-240 minutes), those respondents spent more time on purchasing prepared food (13-22 minutes) relative to their counterparts. These results show that households allocate more time on food purchasing as leisure time increases.

More than four hours of leisure time still increases time spent on purchasing food among all individuals, women and household with children, but the effect of additional hours of leisure becomes smaller. It indicates that, as leisure time increases, individuals may decide to engage in preparing food at home or dining out, instead of purchasing prepared food.

**(4) Education**

The level of education has a significant positive effect on an individual's time spent on purchasing prepared food. Both highly educated men and women are likely to spend more time on purchasing prepared (additional 13-16 minutes and 9-23 minutes, respectively) relative to their counterparts who have a high school education but no diploma.

Households with children spent more time (additional 10-15 minutes) on purchasing prepared food at any level of education relative to their counterparts. Additionally, two-earner households with children spent slightly more time (26-27 minutes) relative to their counterparts

who spent zero on purchasing prepared food. Also, one-earner households with children also spent more time (21-24 minutes) relative to their counterparts at any level of education. As expected, two-earner households are more time constrained and thus they are likely to rely on prepared food when growing children are present in the household. This result is consistent with the finding in which families with college-educated wives, in which wives are likely to spend more time in the labor market, spend more on prepared food per week than families with less-than-high-school-educated wives (Nayga, 1996).

Households without children spent almost equal time on purchasing prepared food as those with children (an additional 10-15 minutes relative to their counterparts) at all education levels. Two-earner households without children spent about 26 minutes more relative to their counterparts who spent zero on purchasing prepared food, with the exception of those with Associate and Bachelor's degrees. One-earner households without children spent 42-47 minutes more than those who have a high school education but no diploma. These results suggest that the absence of children in a household, particularly for one-earner households, increases time spent on this activity, which indicates that the reduction in the monetary cost of food is significant, thus households devote more time to this activity.

### (5) Hourly Earnings and Family Income

Hourly earnings and family income have no effect on time spent purchasing prepared food, which is consistent with the case of time spent on preparing food at home, although households with family income of $40,000-$59,999 increase time spent on purchasing prepared food by 5 minutes. Additionally, households with two parties holding full-time jobs increase time spent on

purchasing prepared food among all respondents by 7 minutes and among men by 10 minutes. Households in which has one party holds a full-time job and the other party holding a part-time jobs, showed no significant effect on the time spent on purchasing prepared food. These results indicate that time constrained households seem to rely on prepared-food, but not true for less time constrained households.

## V. CONCLUSIONS

This paper examines how individuals make decisions on the allocation of time for food preparation and how their decisions on preparing food at home or purchasing prepared foods affects their non-working hours. It also evaluates how socio-demographic differences affect individuals' time use decisions for non-market hours. A Tobit model is used to investigate the proposed questions using the 2005 American Time Use Survey (ATUS) data.

The results of this study confirm that long hours of work, time spent on family care, the amount of time spent on socializing, relaxing and leisure, and the level of education significantly influence one's decision to allocate time to preparing food at home. Additionally, the allocation of time to preparing food at home varies by gender, by the number of people in the household, and by the employment status of each household. Households with children and women who work long hours reduce their time spent on preparing food at home relative to their counterparts who work zero hours. Men and households with children, who spent more time on family care and/or leisure are likely to devote more time to preparing food at home. While highly educated men are likely to devote more time to preparing food at home, women and households with

children are likely to reduce their time on this activity. Further, hourly wages and family income did not play a role in determining the time spent on preparing food at home.

The empirical results further suggest that time spent on family care, the amount of time spent on socializing, relaxing and leisure, and the level of education affect time spent on purchasing prepared food. Particularly, up to an hour spent per day on family care has an effect on one's decision about purchasing prepared food, in which respondents in the sub-samples increased time spent on purchasing prepared food by 12-15 minutes relative to those who spent zero hours on family care. Women and households with children, who spent more time on leisure, are likely to increase their time spent on purchasing prepared food. However, this trend is not apparent for men and households without children under age 18. Regardless of the presence of children and the status of employment in the household, more educated individuals are likely to spend more time on purchasing prepared food. Additionally, the allocation of time to this activity increases with the level of education. Hourly wages and family income also had no impact on the allocation of time to purchasing prepared food.

Future research should focus on the existing sample bias and on ways to increase reliability of the existing empirical results. I need to learn empirical approaches to deal with independent variables that are censored. Research also should determine whether preparing food at home and purchasing prepared food are substitutes. Since much study is focused on the analyses of food-at-home and food-away-from-home, a new avenue of research on food-at-home and prepared-food will provide a new insight in the literature.

**TABLE 1A**
**Selected Characteristics of Individual Respondents**

| | All Sample | | Men | | Women | |
|---|---|---|---|---|---|---|
| | No. | % of total | No. | % of total | No. | % of total |
| Age | | | | | | |
| 18-25 | 1081 | 0.104 | 464 | 0.102 | 617 | 0.105 |
| 26-45 | 5297 | 0.508 | 2317 | 0.509 | 2980 | 0.508 |
| 46-65 | 4039 | 0.388 | 1770 | 0.389 | 2269 | 0.387 |
| Total | 10417 | 1.000 | 4551 | 1.000 | 5866 | 1.000 |
| Education | | | | | | |
| Less than HS Diploma | 1142 | 0.110 | 516 | 0.113 | 626 | 0.107 |
| High School Diploma | 2799 | 0.269 | 1229 | 0.270 | 1570 | 0.268 |
| Some college but no diploma | 1998 | 0.192 | 817 | 0.180 | 1181 | 0.201 |
| Associate degree | 1062 | 0.102 | 416 | 0.091 | 646 | 0.110 |
| Bachelor's degree | 2215 | 0.213 | 1018 | 0.224 | 1197 | 0.204 |
| Master's degree | 863 | 0.083 | 342 | 0.075 | 521 | 0.089 |
| Advanced degree | 338 | 0.032 | 213 | 0.047 | 125 | 0.021 |
| Total | 10417 | 1.000 | 4551 | 1.000 | 5866 | 1.000 |
| Marital Status | | | | | | |
| Married | 6031 | 0.579 | 2791 | 0.613 | 3240 | 0.552 |
| Not Married | 4386 | 0.421 | 1760 | 0.387 | 2626 | 0.448 |
| Total | 10417 | 1.000 | 4551 | 1.000 | 5866 | 1.000 |
| Metropolitan Living Status | | | | | | |
| Metropolitan Living | 8392 | 0.806 | 3669 | 0.806 | 4723 | 0.805 |
| Non-metropolitan Living | 2025 | 0.194 | 882 | 0.194 | 1143 | 0.195 |
| Total | 10417 | 1.000 | 4551 | 1.000 | 5866 | 1.000 |
| Region | | | | | | |
| Northeast | 1903 | 0.183 | 871 | 0.191 | 1032 | 0.176 |
| Midwest | 2744 | 0.263 | 1214 | 0.267 | 1530 | 0.261 |
| South | 3550 | 0.341 | 1462 | 0.321 | 2088 | 0.356 |
| West | 2220 | 0.183 | 1004 | 0.221 | 1216 | 0.207 |
| Total | 10417 | 0.970 | 4551 | 1.000 | 5866 | 1.000 |

**TABLE 1B**

**Selected Characteristics of Households**

| | No of households | % of total |
|---|---|---|
| Household w children < 18 | 5788 | 0.556 |
| Household w/o children < 18 | 4629 | 0.444 |
| Total | 10417 | 1.000 |
| | | |
| Household w full-time-working spouse | 4081 | 0.392 |
| Household w part-time-working spouse (including "hours vary") | 875 | 0.084 |
| Total | 4956* | 0.476 |
| | | |
| Household w full-time-working respondent & full-time-working spouse | 2527 | 0.243 |
| Household w full-time-working respondent & part-time-working spouse (including "hours vary") | 646 | 0.062 |
| Household w part-time-working respondent & part-time-working spouse (including "hours vary") | 96 | 0.009 |
| Total | 3269** | 0.314 |
| | | |
| Household w children<18 w both working full-time | 1683 | 0.291 |
| Household w children<18 w respondent working full-time & spouse working part-time | 584 | 0.101 |
| Household w children<18 w both working part-time | 45 | 0.008 |
| Total | 2312*** | 0.399 |
| | | |
| Household w/o children<18 w both working full-time | 844 | 0.182 |
| Household w children<18 w/o respondent working full-time & spouse working part-time (including "hours vary") | 162 | 0.035 |
| Household w/o children<18 w both working part-time (including "hours vary") | 51 | 0.011 |
| Total | 1057**** | 0.228 |
| | | |
| Household w respondent working full-time & spouse who is not employed | 3173 | 0.305 |
| Household w children<18 w respondent working full-time & spouse who is not employed | 2167 | 0.374 |
| Household w/o children<18 w respondent working full-time & spouse who is not employed | 1006 | 0.217 |

*5461 out of 10417 respondents reported their employment status and/or their spouse's employment status to be "blank."

**7148 out of 10417 respondents reported their employment status and/or their spouse's employment status to be "blank."

***3476 out of 5788 respondents reported their employment status and/or their spouse's employment status to be "blank" or "hours vary."

****3572 out of 4629 respondents reported their employment status and/or their spouse's employment status to be "blank" or "hours vary."

**TABLE 2**
**Preparing Food, Purchasing Prepared Food, Hours Worked, and Leisure**

| | | Minutes Spent Preparing Food* (includes travel time related to grocery shopping) | | | Minutes Spent Purchasing Food (includes travel time related to food purchasing) | | |
|---|---|---|---|---|---|---|---|
| | Obs (n) | Means | SD | Weighted Average | Means | SD | Weighted Average |
| All respondents | 10,417 | 38.7 | 55.2 | 33.9 | 3.8 | 14.7 | 3.5 |
| Men | 4,551 | 22.0 | 40.2 | 18.1 | 3.6 | 13.9 | 3.2 |
| Women | 5,866 | 51.6 | 61.4 | 49.3 | 4.0 | 15.3 | 3.7 |
| Household w children<18 | 5,788 | 44.4 | 57.9 | 40.5 | 4.2 | 15.4 | 4.0 |
| Household w/o children<18 | 4,629 | 31.5 | 50.7 | 28.6 | 3.4 | 13.7 | 3.0 |
| Household w full-time-working spouse** | 4,081 | 49.1 | 59.6 | 43.4 | 4.1 | 16.3 | 3.8 |
| Household w full-time-working spouse w children<18*** | 2,861 | 53.1 | 60.5 | 50.4 | 4.5 | 16.7 | 4.6 |
| Household w respondent working full-time & spouse who is not employed | 3173 | 35.4 | 51.9 | 30.1 | 4.3 | 16.8 | 4.0 |
| Household w children<18 w respondent working full-time & spouse who is not employed | 2167 | 37.2 | 52.3 | 32.7 | 4.5 | 16.9 | 4.5 |
| Household w/o children<18 w respondent working full-time & spouse who is not employed | 1006 | 31.4 | 51.0 | 27.3 | 3.8 | 16.7 | 3.5 |

| | | Minutes Worked (main job and other job) | | | Socializing, Relaxing, and Leisure | | |
|---|---|---|---|---|---|---|---|
| | Obs (n) | Means | SD | Weighted Average | Means | SD | Weighted Average |
| All respondents | 10,417 | 191.6 | 252.1 | 241.1 | 258.0 | 190.9 | 248.5 |
| Men | 4,551 | 237.7 | 271.4 | 285.7 | 274.1 | 202.7 | 261.7 |
| Women | 5,866 | 155.9 | 229.9 | 199.1 | 245.5 | 180.3 | 236.2 |
| Household w children<18 | 5,788 | 188.0 | 248.6 | 232.9 | 228.1 | 173.0 | 220.9 |
| Household w/o children<18 | 4,629 | 196.2 | 256.5 | 248.5 | 295.4 | 205.2 | 272.2 |
| Household w full-time-working wife** | 4,081 | 184.4 | 247.9 | 245.7 | 230.0 | 171.0 | 221.7 |
| Household w full-time-working wife w children<18*** | 2,861 | 171.8 | 240.7 | 221.9 | 215.0 | 162.2 | 203.4 |
| Household w part-time-working-wife** | 709 | 243.3 | 265.0 | 297.3 | | | |
| Household w respondent working full-time & spouse who is not employed | 3173 | 270.0 | 268.0 | 343.0 | 213.8 | 161.6 | 201.9 |
| Household w children<18 w respondent working full-time & spouse who is not employed | 2167 | 262.8 | 264.5 | 330.6 | 203.2 | 154.9 | 186.5 |
| Household w/o children<18 w respondent working full-time & spouse who is not employed | 1006 | 285.6 | 274.7 | 356.3 | 236.6 | 172.9 | 218.4 |

*5461 respondents left their answer "blank", 709 respondents answered "part time" and 166 respondents answered "hours vary" for spouse or unmarried partner's employment status.
**1220 household with full-time-working wife had no children.

**TABLE 3**
**Time Spent on Preparing Food at Home: Tobit Model**
**(Dependent variable: Preparing Food)**

| | (1) | (2) | | (3) | |
|---|---|---|---|---|---|
| Independent Variables | All Sample (n=10,417) | Men (n=4,551) | Women (n=5,866) | Households w Children (n=5,788) | Households wo Children* (n=4,629) |
| Intercept | 37.868 | -28.642 | 51.507 | 41.334 | 24.932 |
| | (6.187) | (9.656) | (7.893) | (7.862) | (9.897) |
| Work: 1-240 minutes (yes=1) | -6.87** | -10.26** | -3.017 | -8.04** | -5.435 |
| | (2.904) | (4.328) | (3.812) | (3.857) | (4.395) |
| Work: > 240 minutes (yes=1) | -33.89*** | -26.91*** | -36.86** | -38.37*** | -28.59*** |
| | (1.966) | (2.940) | (2.589) | (2.639) | (2.946) |
| Family Care: 1-60 minutes (yes=1) | 18.28*** | 25.95*** | 10.36*** | 18.94*** | 14.02** |
| | (2.492) | (3.744) | (3.288) | (2.758) | (5.582) |
| Family Care: 61-120 minutes (yes=1) | 27.61*** | 32.77*** | 20.35*** | 27.63** | - |
| | (3.024) | (4.886) | (3.834) | (3.151) | |
| Family Care: > 120 minutes (yes=1) | 27.71*** | 35.65*** | 18.74*** | 25.69*** | - |
| | (2.820) | (4.828) | (3.535) | (2.964) | |
| Leisure: 1-120 minutes (yes=1) | 17.95*** | 16.78** | 18.78*** | 13.25*** | 26.65** |
| | (4.019) | (6.482) | (5.046) | (4.951) | (6.891) |
| Leisure: 121-240 minutes (yes=1) | 22.93*** | 28.40*** | 20.20*** | 15.87*** | 35.65*** |
| | (3.976) | (6.359) | (5.017) | (4.954) | (6.703) |
| Leisure: > 241minutes (yes=1) | 9.46** | 19.73*** | 4.496 | 0.612 | 23.93*** |
| | (3.941) | (6.315) | (4.968) | (4.966) | (6.559) |
| Family Income: 40,000-59,999 (yes=1) | -1.833 | 1.549 | -3.045 | -1.513 | -1.369 |
| | (2.195) | (3.400) | (2.813) | (2.960) | (3.284) |
| Family Income: 60,000-99,999 (yes=1) | -3.279 | -1.398 | -4.81* | -1.562 | -5.055 |
| | (2.126) | (3.170) | (2.791) | (2.770) | (3.337) |
| Family Income: >100,000 (yes=1) | -4.287 | 0.336 | -9.43** | -3.343 | -5.399 |
| | (2.966) | (4.207) | (4.032) | (3.740) | (4.883) |
| High School with Diploma (yes=1) | -6.92** | 8.62** | -18.53** | -6.11* | -8.68** |
| | (2.827) | (4.388) | (3.647) | (3.707) | (4.373) |
| Some College But No Degree (yes=1) | -10.66*** | 9.92** | -24.19*** | -11.58*** | -10.22** |
| | (3.011) | (4.708) | (3.858) | (3.964) | (4.637) |
| Associate Degree (yes=1) | -8.60** | 9.71* | -21.14*** | -12.41*** | -4.146 |
| | (3.471) | (5.525) | (4.404) | (4.521) | (5.436) |
| Bachelor's Degree (yes=1) | -8.70*** | 14.22*** | -24.27*** | -8.21** | -9.86** |
| | (3.048) | (4.676) | (3.975) | (4.040) | (4.689) |
| Advanced Degree (yes=1) | -6.37* | 27.85*** | -29.51*** | -8.28* | -4.049 |
| | (3.461) | (5.232) | (4.545) | (4.624) | (5.263) |
| Hourly Earnings (trernhly ) | -0.002** | -0.001 | -0.003** | -0.003*** | -0.001 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Both respondent & spouse are full-time | -6.87*** | -2.286 | -5.59** | -4.135 | -8.03** |
| | (2.189) | (3.751) | (2.740) | (2.792) | (3.625) |
| One party is full-time & Other is part-time | -20.26*** | -15.02*** | -9.057 | -15.66*** | -21.71*** |
| | (3.273) | (4.427) | (5.899) | (4.171) | (5.562) |
| Other Control Variables | YES | YES | YES | YES | YES |
| Pseudo R2 | 0.024 | 0.012 | 0.016 | 0.028 | 0.016 |
| Log likelihood | -38786.344 | -13107.216 | -25573.306 | -22657.738 | -16102.031 |

*4427 out of 4629 respondents spent zero time for family care, and thus 202 respondents who spent more than zero minutes are in the dummy variable, Family Care: 1-60 minutes

Notes: Standard errors are shown in parentheses.
***, **, * indicate significant at the 1%, 5% and 10% level, respectively.

**TABLE 3 - Continued**
**Time Spent on Preparing Food at Home: Tobit Model**
**(Dependent variable: Preparing Food)**

| | (4) | | (5) | |
|---|---|---|---|---|
| Independent Variables | Two-earner Households w Children (n=1,683) | Two-earner Households wo Children** (n=844) | One-earner Households w Children (n=2,167) | One-earner Households wo Children (n=1,006) |
| Intercept | 46.250 | 67.116 | 41.249 | 72.890 |
| | (16.558) | (25.363) | (14.708) | (23.340) |
| Work: 1-240 minutes (yes=1) | -9.335 | -7.352 | -8.668 | -9.029 |
| | (6.641) | (9.414) | (5.808) | (8.789) |
| Work: > 240 minutes (yes=1) | -30.92*** | -27.33*** | -32.21*** | -29.94*** |
| | (4.472) | (6.484) | (3.965) | (6.194) |
| Family Care: 1-60 minutes (yes=1) | 9.02* | -0.095 | 11.16*** | 7.129 |
| | (4.764) | (10.781) | (4.228) | (10.144) |
| Family Care: 61-120 minutes (yes=1) | 20.11*** | - | 24.97*** | - |
| | (5.502) | | (4.898) | |
| Family Care: > 120 minutes (yes=1) | 12.55** | - | 18.60*** | - |
| | (5.491) | | (4.845) | |
| Leisure: 1-120 minutes (yes=1) | 20.62** | 12.004 | 22.21*** | 22.28* |
| | (8.598) | (13.797) | (7.807) | (13.028) |
| Leisure: 121-240 minutes (yes=1) | 23.25*** | 33.57** | 29.15*** | 39.52** |
| | (8.703) | (13.682) | (7.835) | (12.910) |
| Leisure: > 241minutes (yes=1) | 12.138 | 15.575 | 15.59* | 18.942 |
| | (8.924) | (13.809) | (8.049) | (12.925) |
| Family Income: 40,000-59,999 (yes=1) | 1.079 | -3.912 | -1.083 | -5.226 |
| | (5.556) | (8.201) | (4.920) | (7.691) |
| Family Income: 60,000-99,999 (yes=1) | -3.446 | -0.097 | 0.981 | 0.535 |
| | (4.681) | (6.548) | (4.160) | (6.209) |
| Family Income: >100,000 (yes=1) | -2.750 | -4.419 | 1.601 | -3.231 |
| | (5.807) | (8.260) | (5.180) | (7.990) |
| High School with Diploma (yes=1) | -1.947 | -22.963 | 2.235 | -39.95*** |
| | (8.985) | (15.702) | (7.974) | (13.597) |
| Some College But No Degree (yes=1) | 3.960 | -22.458 | 7.142 | -38.83*** |
| | (9.370) | (16.246) | (8.296) | (14.125) |
| Associate Degree (yes=1) | -2.341 | -32.59* | 0.032 | -44.92*** |
| | (9.999) | (16.917) | (8.921) | (14.934) |
| Bachelor's Degree (yes=1) | 5.079 | -26.47* | 5.230 | -43.51*** |
| | (9.224) | (15.866) | (8.130) | (13.848) |
| Advanced Degree (yes=1) | 7.149 | -11.351 | 8.971 | -24.15* |
| | (9.762) | (16.296) | (8.653) | (14.248) |
| Hourly Earnings (trernhly ) | -0.005** | 0.002 | -0.004** | 0.002 |
| | (0.002) | (0.003) | (0.002) | (0.002) |
| Both respondent & spouse are full-time | - | - | - | - |
| One party is full-time & Other is part-time | - | - | - | - |
| Other Control Variables | YES | YES | YES | YES |
| Pseudo R2 | 0.022 | 0.018 | 0.023 | 0.019 |
| Log likelihood | -6439.488 | -2955.079 | -8019.444 | -3487.367 |

**790 out of 844 respondents spent zero time for family care, and thus 54 respondents who spent more than zero minutes are in the dummy variable, Family Care: 1-60 minutes

**TABLE 4**
**Time Spent on Purchasing Prepared Food: Tobit Model**
**(Dependent variable: Purchasing Prepared Food)**

| | (1) | (2) | | (3) | |
|---|---|---|---|---|---|
| | All Sample | Men | Women | Households w Children | Households wo Children* |
| Independent Variables | (n=10,417) | (n=4,551) | (n=5,866) | (n=5,788) | (n=4,629) |
| Intercept | -110.937 | -100.622 | -120.855 | -118.802 | -103.090 |
| | (8.436) | (12.064) | (11.764) | (11.122) | (12.950) |
| Work: 1-240 minutes (yes=1) | 6.49** | 4.059 | 8.16* | 6.459 | 6.551 |
| | (3.415) | (5.145) | (4.568) | (4.635) | (5.022) |
| Work: > 240 minutes (yes=1) | 3.587 | 2.085 | 4.498 | 3.212 | 3.966 |
| | (2.326) | (3.439) | (3.174) | (3.213) | (3.363) |
| Family Care: 1-60 minutes (yes=1) | 13.65*** | 14.17*** | 13.36*** | 15.35*** | 9.432 |
| | (2.982) | (4.334) | (4.168) | (3.394) | (6.612) |
| Family Care: 61-120 minutes (yes=1) | 10.30*** | 11.99** | 9.96** | 11.98** | - |
| | (3.670) | (5.725) | (4.896) | (3.930) | |
| Family Care: > 120 minutes (yes=1) | 12.04*** | 11.85** | 12.54*** | 12.76*** | - |
| | (3.448) | (5.701) | (4.547) | (3.742) | |
| Leisure: 1-120 minutes (yes=1) | 11.31** | 2.543 | 18.95*** | 13.80** | 7.785 |
| | (5.004) | (7.093) | (7.101) | (6.569) | (7.741) |
| Leisure: 121-240 minutes (yes=1) | 12.85** | 2.071 | 22.05*** | 15.89** | 7.579 |
| | (4.966) | (7.011) | (7.072) | (6.577) | (7.571) |
| Leisure: > 241minutes (yes=1) | 10.64** | -0.530 | 20.21** | 16.16** | 3.588 |
| | (4.944) | (6.979) | (7.038) | (6.617) | (7.436) |
| Family Income: 40,000-59,999 (yes=1) | 4.728** | 4.041 | 5.026 | 4.493 | 4.390 |
| | (2.606) | (3.984) | (3.455) | (3.591) | (3.788) |
| Family Income: 60,000-99,999 (yes=1) | 0.365 | 2.971 | -1.609 | 1.081 | -1.100 |
| | (2.548) | (3.679) | (3.537) | (3.379) | (3.922) |
| Family Income: >100,000 (yes=1) | 0.184 | -3.435 | 3.467 | 0.805 | -0.252 |
| | (3.543) | (5.095) | (4.925) | (4.553) | (5.717) |
| High School with Diploma (yes=1) | 11.58*** | 15.16*** | 8.60* | 11.79** | 12.00** |
| | (3.752) | (5.602) | (5.063) | (4.889) | (5.914) |
| Some College But No Degree (yes=1) | 12.96*** | 14.88** | 11.77** | 10.31** | 16.82*** |
| | (3.925) | (5.931) | (5.243) | (5.179) | (6.092) |
| Associate Degree (yes=1) | 16.97*** | 12.92** | 18.62*** | 13.75** | 20.86*** |
| | (4.407) | (6.870) | (5.797) | (5.785) | (6.886) |
| Bachelor's Degree (yes=1) | 17.40*** | 15.73*** | 18.03*** | 15.25*** | 19.13*** |
| | (3.947) | (5.896) | (5.342) | (5.232) | (6.127) |
| Advanced Degree (yes=1) | 19.16*** | 13.41*** | 23.03*** | 14.17** | 24.11*** |
| | (4.389) | (6.611) | (5.893) | (5.912) | (6.669) |
| Hourly Earnings (trernhly ) | 0.001 | -0.001 | 0.002 | 0.001 | 0.001 |
| | (0.001) | (0.002) | (0.001) | (0.001) | (0.002) |
| Both respondent and spouse are full-time | 6.94*** | 10.23** | 4.477 | 4.947 | 11.10** |
| | (2.674) | (4.568) | (3.450) | (3.480) | (4.360) |
| One party is full-time and Other is part-time | 1.146 | 3.379 | 0.918 | 0.452 | 1.244 |
| | (3.949) | (5.379) | (7.600) | (5.041) | (6.918) |
| Other Control Variables | YES | YES | YES | YES | YES |
| Pseudo R2 | 0.006 | 0.007 | 0.008 | 0.006 | 0.008 |
| Log likelihood | -9931.937 | -4167.326 | -5750.163 | -5792.344 | -4127.603 |

*4427 out of 4629 respondents spent zero time for family care, and thus 202 respondents who spent more than zero minutes are in the dummy variable, Family Care: 1-60 minutes

Notes: Standard errors are shown in parentheses.
***, **, * indicate significant at the 1%, 5% and 10% level, respectively.

**TABLE 4 - Continued**
**Time Spent on Purchasing Prepared Food: Tobit Model**
**(Dependent variable: Purchasing Prepared Food)**

| | (4) | | (5) | |
|---|---|---|---|---|
| Independent Variables | Two-earner Households w Children (n=1,683) | Two-earner Households wo Children** (n=844) | One-earner Households w Children (n=2,167) | One-earner Households wo Children (n=1,006) |
| Intercept | -118.203 | -118.203 | -116.351 | -123.843 |
| | (22.871) | (22.871) | (21.015) | (36.962) |
| Work: 1-240 minutes (yes=1) | 7.640 | 7.640 | 5.417 | -23.61* |
| | (8.131) | (8.131) | (7.508) | (12.777) |
| Work: > 240 minutes (yes=1) | 8.847 | 8.847 | 6.141 | -1.585 |
| | (5.578) | (5.578) | (5.178) | (7.957) |
| Family Care: 1-60 minutes (yes=1) | 12.43** | 12.43** | 13.37** | 20.57* |
| | (5.858) | (5.858) | (5.416) | (12.349) |
| Family Care: 61-120 minutes (yes=1) | 10.772 | - | 13.03** | - |
| | (6.898) | | (6.364) | |
| Family Care: > 120 minutes (yes=1) | 13.01* | - | 8.739 | - |
| | (6.947) | | (6.482) | |
| Leisure: 1-120 minutes (yes=1) | 12.563 | 12.563 | 11.734 | 3.663 |
| | (11.124) | (11.124) | (10.381) | (16.736) |
| Leisure: 121-240 minutes (yes=1) | 17.819 | 17.819 | 15.766 | -0.886 |
| | (11.224) | (11.224) | (10.410) | (16.731) |
| Leisure: > 241minutes (yes=1) | 21.10* | 21.10* | 18.03* | 7.953 |
| | (11.478) | (11.478) | (10.709) | (16.659) |
| Family Income: 40,000-59,999 (yes=1) | 1.686 | 1.686 | -4.510 | -2.453 |
| | (6.931) | (6.931) | (6.444) | (10.132) |
| Family Income: 60,000-99,999 (yes=1) | 0.718 | 0.718 | -4.205 | -3.509 |
| | (5.782) | (5.782) | (5.375) | (8.162) |
| Family Income: >100,000 (yes=1) | 1.927 | 1.927 | 2.003 | -2.241 |
| | (7.161) | (7.161) | (6.599) | (10.547) |
| High School with Diploma (yes=1) | 26.19** | 26.19** | 22.18** | 33.589 |
| | (12.745) | (12.745) | (11.273) | (23.326) |
| Some College But No Degree (yes=1) | 26.31** | 26.31** | 21.81** | 26.048 |
| | (13.167) | (13.167) | (11.679) | (24.013) |
| Associate Degree (yes=1) | 19.038 | 19.038 | 18.659 | 42.05* |
| | (13.932) | (13.932) | (12.438) | (24.668) |
| Bachelor's Degree (yes=1) | 27.40** | 27.40** | 23.78** | 47.15** |
| | (13.085) | (13.085) | (11.503) | (23.547) |
| Advanced Degree (yes=1) | 25.75* | 25.75* | 21.07* | 43.27* |
| | (13.740) | (13.740) | (12.199) | (24.060) |
| Hourly Earnings (trernhly ) | 0.001 | 0.001 | 0.001 | 0.002 |
| | (0.002) | (0.002) | (0.002) | (0.003) |
| Both respondent and spouse are full-time | - | - | - | - |
| One party is full-time and Other is part-time | - | - | - | - |
| Other Control Variables | YES | YES | YES | YES |
| Pseudo R2 | 0.007 | 0.007 | 0.006 | 0.013 |
| Log likelihood | -1754.121 | -1754.121 | -2298.801 | -953.133 |

**790 out of 844 respondents spent zero time for family care, and thus 54 respondents who spent more than zero minutes are in the dummy variable, Family Care: 1-60 minutes

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