Outsourcing Household Tasks in 1973-2002 Among the Working Mothers of America

Mahmoud Mahmoud Khaial
Lynn University

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LYNN UNIVERSITY
Boca Raton, Florida

OUTSOURCING HOUSEHOLD TASKS IN 1973-2002
AMONG THE WORKING MOTHERS OF AMERICA

MAHMOUD MAHMOUD KHAIAL

A DISSERTATION
Submitted to the Faculty of the Ross College of Education
and Human Services of Lynn University
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in Global Leadership

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Outsourcing Household Tasks in 1973-2002
Among the Working Mothers of America

by Mahmoud Mahmoud Khaial.

Lynn University
2004

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ABSTRACT

Outsourcing Household Tasks in 1973-2002
Among the Working Mothers of America
By Mahmoud Mahmoud Khaial
August, 2004

The United States has 70 percent of married mothers and 79 percent of single mothers with children under the age of 18 participating in the work force (U.S. Census Bureau, 2002). Most women in the labor force work primarily because the family needs the money. Because of the decline in real family income over the past two decades, most families find it essential for both parents to work to support them at a level that used to be achieved by one wage-earner, and in many families two earners are required to keep the family out of poverty. As a result of their inability to meet all the demands of work and home, including child care, outsourcing of daily household tasks has become a common practice for working mothers, both single and married –mothers households (Branch, 2001).

The purpose of this study was to examine the general progress of the purchase of services that replace households production from the year 1994 through 2002 as an extension of a study conducted by Haron (2000), which focused on outsourcing of household tasks in 1973, 1983 and 1993 among single-mother and married-mother households. Specifically, the purchase service expenditures of working married and single mothers are examined. The research objectives were to analyze new purchased service expenditure patterns, which were added to the study data conducted by Haron
For both, married and single-mother households, annual expenditures on FAFH has a high correlation with income after taxes (p = 0.974, p value < 0.001). Annual expenditures on childcare (ChC) and of households' supplies and services (HSS) and multiple regression analysis were conducted by Haron (2000). The dependent variables are the households' annual expenditures on each purchased services category, i.e., food away from home (FAFH), childcare (ChC), and of households' supplies and services (HSS). The theoretical framework was taken from a prior study conducted between 1973-2002. The theoretical framework was taken from a prior study on each purchased services category, i.e., food away from home (FAFH), childcare (ChC), and of households' supplies and services (HSS). The dependent variables are the households' annual expenditures on each purchased services category, i.e., food away from home (FAFH), childcare (ChC), and of households' supplies and services (HSS). The theoretical framework was taken from a prior study conducted between 1973-2002. The theoretical framework was taken from a prior study on each purchased services category, i.e., food away from home (FAFH), childcare (ChC), and of households' supplies and services (HSS).
education and mothers' employment status. All were highly statistically significant with <0.0001 of P value indicating that these 3 factors are highly influential in predicting the number of children enrolled in child care facilities (ChC) per category.
DEDICATION

In memory of my beloved and respected mother Hjh Dawlat who had been through hell as a single mother during her golden years with three children. Mom I shall never forget you.
ACKNOWLEDGMENTS

Alhamdulillah. I thank the almighty God for giving me the ability and strength to accomplish my dissertation. I would like to proudly acknowledge my early years’ Egyptian teachers during my Elementary, Middle and High School for the strong educational foundation they invested in me.

This study would not have been possible without the help, assistance, and support of a number of inspiring people whose guidance and direction aided in this project and in my academic development. I first want to acknowledge my dissertation committee members beginning with Dr. Frederick L. Dembowski, my advisor and the chair of my dissertation committee who provided me with incredible insightful guidance throughout the one year it took to bring this project from a literature review to a complete dissertation. Dr. Ann Crawford and Dr. Albert Williams have patiently guided and helped me, providing me with an immense source of professional advice and personal encouragement from the very beginning. Thank you. I want to acknowledge and thank Dr. Richard Cohen for his positive encouragement and suggestions. My heartfelt thanks go to Dr. William Leary who has given me the confidence to shoot for above the stars. Finally, I want to thank my family and loved ones who provide an unbounded emotional encouragement throughout the duration of my development.
TABLE OF CONTENTS

Abstract .......................................................................................................................... iii
Dedication ..................................................................................................................... vi
Acknowledgement ....................................................................................................... vii
Table of Contents ......................................................................................................... viii
List of Tables ................................................................................................................ x
List of Figures ............................................................................................................... xiii

CHAPTER I: INTRODUCTION

Overview ....................................................................................................................... 1
Background and Overview of the Problem .................................................................. 1
Purpose of the Study ....................................................................................................... 7
Importance of the Study ............................................................................................... 9
Objectives of the Study ............................................................................................... 11
Organization of the Study ........................................................................................... 11
Limitation of the Study ............................................................................................... 12
Summary ...................................................................................................................... 13

CHAPTER II: REVIEW OF THE LITERATURE

Overview ....................................................................................................................... 15
History and Demographic of Mothers in the Workplace ............................................ 16
Outsourcing Problems ............................................................................................... 25
Outsourcing Costs of Children .................................................................................. 33
Economic Evaluation of Household Domestic Labor ............................................... 38
The Wage Methods ..................................................................................................... 40
The Direct Output and Value-Added Methods ......................................................... 41
The Value-of Unpaid Household Domestic Labor ...................................................... 43
Impact of Public Policy and Social Roles .................................................................... 47
Impact of 9/11 Tragedy on Employment of Working Mother ..................................... 51
Summary ...................................................................................................................... 54
CHAPTER III: RESEARCH METHODOLOGY

Overview................................................................................ 58
Research Questions................................................................. 59
Research Design......................................................................... 60
Quantitative Method Approaches............................................... 60
Advantages of Quantitative Research.......................................... 63
Disadvantages of Quantitative Research...................................... 64
Definition of Terms..................................................................... 65
Models Format............................................................................. 68
Independent and Dependent Variables........................................ 68
Dependent Variables.................................................................... 68
Definition of Dependent Variables............................................. 69
Independent Variables.............................................................. 70
Income....................................................................................... 70
Mother’s Marital Status............................................................ 71
Mother’s Age ............................................................................. 71
Mother’s Education..................................................................... 72
Mother’s Occupational Status.................................................... 72
Mother’s Share of Income.......................................................... 72
Household Age Composition...................................................... 73
Mother’s race (Proportion)........................................................ 73
Housing Tenure.......................................................................... 73
Theoretical Rational Assumptions............................................... 74
Theoretical Model....................................................................... 75
Hypothesis.................................................................................. 78
Hypotheses for All-Households Model......................................... 85
Hypotheses for Married-Mother Households Model...................... 85
Hypotheses for Single-Parents Household Model.......................... 86
Data Collection.......................................................................... 87
Data Availability......................................................................... 87
Data Structure............................................................................ 88
Data Construction...................................................................... 89
Population................................................................................... 89
Sample........................................................................................ 90
Sample Design.......................................................................... 90
Interview Survey........................................................................ 91
Error of the Sample survey......................................................... 92
Statistical Estimation.................................................................. 92
Summary..................................................................................... 93

CHAPTER IV: RESULTS

Overview.................................................................................. 95
Analyses Research Question One................................................ 96
Analyses Research Question Two................................................. 110
Analyses Research Question Three .................................................. 113
Analyses Research Question Four .................................................... 132
Other Miscellaneous Findings .......................................................... 136

CHAPTER V: FINDINGS, CONCLUSIONS, AND IMPLICATIONS

Overview ......................................................................................... 140
Summary and Conclusions ............................................................. 140
Summary of Research Question One .............................................. 141
Summary of Research Question Two .............................................. 143
Summary of Research Question Three .......................................... 143
Summary of Research Question Four .............................................. 145
Implications of the Study ................................................................. 145
Recommendation for Future Research .......................................... 146
Conclusions .................................................................................... 147

REFERENCES ................................................................................. 148

APPENDICES

Appendix A ......................................................................................... 157
Appendix B ......................................................................................... 159
Appendix C ......................................................................................... 161
Appendix D ......................................................................................... 163
Appendix E ......................................................................................... 165
Appendix F ......................................................................................... 167
Appendix G ......................................................................................... 169
LIST OF TABLES

Table 1: Primary child care arrangement for children under age six (Percent) 1999................................................................. 32

Table 2: New York City employment Effects Results from the World Trade Center attacks.................................................. 53

Table 3: Food away From Home Expenditure by Consumer Unit Structure.... 100

Table 4: ANOVA Output: Analyses of Variance for FAFH/CU Size and CU Structure Model by Year ........................................ 102

Table 5: ANOVA Output: Analyses of Variance for FAFH/Food Model by Year and CU Structure ........................................ 103

Table 6: HKSS Expenditure (2002$) by Consumer Unit Structure.............. 106

Table 7: R² of Married and Single-Mothers Expenditure, Proportion of Children by Mothers Labor Force........................................ 110

Table 8: Standard Deviation of All-Groups, Married-Mother and Single-Parents................................................................. 113

Table 9: General Demographic Characteristics of the Five Subgroups........... 115

Table 10: Average Income and Expenditure Level for the 19 Years, 1984-2002 (FAFH, HKSS)...................................................... 116

Table 11: ANOVA Analyses of Variance and Linear Regression Result for all 19 Years 1984-2002 (2002$)........................................ 119

Table 12: Predicted Results at Average Levels for Each Group Each Group... 120

Table 13: Independent variable of (HKSS)................................................ 121
Table 14: ANOVA Analysis of variance and linear regression results for

All 19 Years 1984-2002 (2002$) HKSS........................................ 122

Table 15: Predicted Results at Average Levels for Each Group (HKSS)...... 122

Table 16: Chi-Square: Mothers by race (ChC)........................................ 124

Table 16a: Level of Significant: Mother by Race (ChC)............................ 124

Table 17: Chi-Square: Race by Mother’s Comparison (ChC)...................... 125

Table 17a: Level of Significant: Mother by Comparison (ChC).................... 125

Table 18: ANOVA Analyses of Variance Results for

Married-Mother Households (ChC).................................................... 127

Table 19: Elasticity Estimates for Expenditure Categories for 1973, 1983,

1993 and 2002 (All Households)..................................................... 135

Table 20: ANOVA Analyses of Variance and Linear Regression Results

for All 19 Years 1984-2002 (2002$).................................................. 139
<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Child Care Arrangements of Working Mothers With Children Under Age Six</td>
<td>31</td>
</tr>
<tr>
<td>2</td>
<td>Monthly Expenditures for Single Mother</td>
<td>35</td>
</tr>
<tr>
<td>3</td>
<td>Total Food vs Food Away From Home Expenditure</td>
<td>98</td>
</tr>
<tr>
<td>4</td>
<td>Food and FAFH Expenditure Per Average Number of Earner Per Consumer Unit</td>
<td>99</td>
</tr>
<tr>
<td>5</td>
<td>Food Away From Home Expenditure Over Time: 1984-2002</td>
<td>102</td>
</tr>
<tr>
<td>6</td>
<td>Proportion of Food Budget Spent on FAFH Over Time (2002$)</td>
<td>104</td>
</tr>
<tr>
<td>7</td>
<td>HKSS Expenditure Relative to Average Number of Earners Per Consumer Unit</td>
<td>105</td>
</tr>
<tr>
<td>8</td>
<td>HKSS Expenditure Per Average Number of Earners Per</td>
<td>107</td>
</tr>
<tr>
<td>9</td>
<td>HKSS Expenditure Over Time (2002$)</td>
<td>108</td>
</tr>
<tr>
<td>10</td>
<td>Distribution of Children Under Care by Race</td>
<td>109</td>
</tr>
<tr>
<td>11</td>
<td>U.S. Civilian Unemployment Rate 1985-2004</td>
<td>112</td>
</tr>
<tr>
<td>12</td>
<td>Variables vs. Expenditures: Average of the 19 Year</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Variables vs Expenditure, Average of The 19 Years,</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Households vs Expenditures of The 8 Years, 1995-2002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2002$) ChC</td>
<td>126</td>
</tr>
</tbody>
</table>
Figure 15: Proportion of Children by Mother Education (ChC)................. 128
Figure 16: Proportion of Children by Mother Labor Force (ChC)............ 129
Figure 17: Proportion of Children by Family Income (ChC)................... 130
Figure 18: Child Care Annual Average Expenditure for All-Households,
MM and SP Over Time (2002$) ChC.................................................. 131
Figure 19: Expenditure Elasticity vs Time, All-Households, FAFH, HKSS
And (ChC)...................................................................................... 136
Figure 20: Annual Income and Expenditures Relative to Average Number
of Earners Per Consumer Unit Over Time (2002$) ........................ 137
Figure 21: Ratio of Annual Expenditure to Income After Tax Over Time
(2002$)......................................................................................... 139
CHAPTER I
INTRODUCTION

Overview

Chapter 1 discussed the topic of concern, the background and significance of the problem, and the purpose of the study. It also provided research questions, limitations, and definitions of terms that were unique to the study. It was noted that this study examined the outsourcing behaviors of the American mothers in the paid and the non-paid labor force with regard to household tasks and that the study is divided into five chapters.

Background of the Study and Overview of the Problem

Seventy percent of married mothers and 79 percent of single mothers with children under the age of 18 in the United States participate in the work force, according to the U. S. Bureau of Labor Statistics (2002). About two out of three mothers with preschoolers are employed (Elias, 2001). Of the total working mothers in the United States, 38 percent work full time all year round (U. S. Bureau of Labor Statistics, 2002a). Most of these women not only hold down a paid job, but provide care for their families as well. For the average American family, an important part of a mother’s job at home is to find care that meets her family’s needs in terms of quality, the location of the child care, affordability, and other characteristics, such as flexible time arrangements. It is also important to care for the house itself and attend to such duties as cleaning clothes, washing floors, cleaning the house, preparing meals, scheduling small repairs, paying
bills, and other related domestic tasks— that is domestic services (Haron, 2000; Jensen & Yen, 1996).

Strober (2003) has explained that women became interested in paid employment as a result of increasing complexity of the economy as a whole, especially when desire for new services and products increased among family members. This required additional income. For example, as medical advances were made, women no longer found it sufficient to provide nursing care directly to their seriously ill children as their mothers and grandmothers had done. They needed income to pay for doctors, hospitals, and medications. In later years, they wanted medical benefits that come with being employed.

Most women in the labor force work primarily because the family needs the money and secondarily for their own personal self-actualization (Surwilo, 2003). Because of the decline in real family income over the past two decades, most families find it essential for both parents to work to support them at a level that used to be achieved by one wage-earner, and in many families two earners are required to keep the family out of poverty (Boushey, 2002). Most divorced, single, and widowed mothers must work to avoid poverty (Branch, 2001; Lawlor, 1996). The Department of Labor projects that by 2005 roughly two-thirds of all new labor force entrants will be women and 80 percent of those in their child-bearing years are expected to have children during their work life (U.S. Census Bureau, 2002). Yet, society is still ambivalent about mothers who work and whose children’s care is delegated to others, and about their diminished time for responsibilities to husbands whose careers are generally presumed to be preeminent (Edin & Lein, 1997). There is a critical shortage of high-quality child care in this country at the present time, but not only that, there is also ambivalence about providing child care.
Therefore, a shameful national dilemma exists: more than 50 percent of American mothers of infants and preschool children are now in the labor force and require child care services; but there is no coherent national policy on parental leaves or on child care services for working parents. Even though child care is not a women’s issue, it is a family issue (Branch, 2001; Fuller, Kipnis, & Choong, 1997). However, the lack of high-quality, affordable childcare has more impact on working mothers than on any others.

As a result of their inability to meet all demands of work and home, including child care, outsourcing of daily household tasks has become a common practice for working mothers, both single and married (Haron, 2000; Reskin & Padavic, 1994). As explained by Schulman (2000), outsourcing daily household tasks is an acknowledged approach to alleviating the time pressures among working single and dual-career family mothers who have children. Women are sometimes too busy to even eat dinner with family members. Outsourcing in this context refers to paying someone else (a person, agency, or team of persons) in the labor market to address the house chores such as cooking, cleaning, shopping, and caring for the children, among other related activities. (Neal, Chapman, Ingersoll-Dayton, & Emlen, 1993). According to Hochschild (1997), this type of lifestyle is particularly relevant among families who have to manage time pressures such as single mother and dual-earner families. Many outsourcers have more money than time and use their incomes to buy themselves freedom and flexibility. Others find less cash-intensive ways to purchase free time to spend with families such as trading services or bartering.

This situation has subsequently led to the decline of the time invested in the housework and increased the need for someone else to do the housework tasks (U.S.
Although these trends have led to a decrease in housework time, full-time working women are still largely responsible for home and family care, and most women have a “second shift” of 25 or more hours of child care and housework each week (Fuller, Kagan, Caspary, & Gauthier, 2001).

There is also evidence of increasing use of spatially flexible labor, that is, home workers, as noted by Hochschild (1997), among others. For example, the 1990 U.S. Census Bureau counted 3.4 million home workers, up from 2.2 million in 1980. By 2002 the U.S. Census Bureau report on the employment characteristics of families counted an increase of 8.9 million (Bureau of Labor Statistics, 2002b). With technological change and the growth of the twenty-four economy, moreover, opportunities have grown for staggering work shifts, which appears to provide another household method for working mothers to reconcile the demands on women to be in two places at once (Haron, 2000). This increase in alternative work shifts and work environments has been supported in the research in terms of increased demand for prepared meals by U.S. households (Park & Capp, 1997) for frozen foods (Redman, 1996), and for child care services (Branch, 2001; Schulman, 2000).

The continuing trend of increasing employment of working mothers in the labor force has pivotal effects, especially in the past decade. Not only have women entered the labor force in unprecedented numbers, they have also remained in the work force. With increases in educational attainment combined with legal changes and the enforcement of new laws, women have sought and attained positions that have been unavailable to them in the past. Further, gender-based barriers to opportunities have been challenged as the labor force experience of women has increased while positions associated with such
experience have not appeared to become more available. Other characteristics have distinguished the more recent pattern of women’s employment from the past. For example, having young children has not resulted in women abandoning employment. Indeed, in 2000 nearly 68 percent of women with children under the age of six were employed, compared to 59 percent of married women in 1990 and only 19 percent in 1960. Similarly, nearly 85 percent of women with school-age children were employed in 2000, as compared to 74 percent in 1990 and 39 percent in 1960 (Boushey, 2002; U.S. Bureau of Labor Statistics, 2002b).

The rise of women’s labor force participation has had both a direct and indirect effect on the family. First, it has caused an increasing interest in the outsourcing of households and caring tasks. Outsourcing has become a well-known strategy to cope with the conflicting demands of paid and domestic labor by replacing unpaid households production with market substitutes (Long & Kahn, 1993). However, the outsourcing of domestic tasks is not a new phenomenon. It has been a common practice for upper class families and individuals to have live-in servants since the start of the eighteenth century (Hall, 1989).

Now there are various specialized outsourcing alternatives to take over elements of housekeeping work, take out food and child care. Replacing households production by outsourcing alternatives has become increasingly viable in the United States (Hochschild 1997), as well as many other countries throughout the world such as Sweden (Nyberg, 2000), Germany (Hamermesh, 1995), and Japan (Iwamoto, 1998), just to name a few.

According to several national surveys conducted by the U.S. Department of Labor (1993), the Bureau of Labor Statistics (2001), and the U.S. Department of Health
and Human Services (1999), there are six major categories of time-consuming household tasks, these tasks include:

- Meal preparation or cooking
- Caring for children
- Housecleaning
- Shopping for groceries and household goods
- Washing dishes or cleaning up after meals, and
- Laundry, including washing, ironing, and mending clothes

These household tasks are not only the most time-consuming, but they also are less optional and less able to be postponed than other household tasks such as gardening or house repairs.

As previously noted, the outsourcing of household tasks especially child care have received increasing attention in the research, particularly due to the statistical significant increase in demand and decrease in quality (Elias, 2001; Fuller et al., 2001; Schulman, 2000; Shaul, 2002). Research has typically focused on whether working mothers decide to outsource certain specific tasks (Hochschild, 1997; Zick & Bryant, 1994). The categories usually include household tasks, child care, and food away from home as the major expenditure patterns. Also, examinations of outsourcing behavior mainly focus on the relationship between time and money, assuming that working mothers with more time constraints and more financial resources outsource tasks more often than other households. However, having less time for domestic production does not always increase households outsourcing.
It is clear from the above discussion that among the many remarkable changes experienced in the past century, the statistical significant increase in working mothers' employment is among the most important ones. The shift of women with children to paid labor has led to a widespread transformation of the traditional rules and practices of daily life not only at workplaces throughout the country, but in families in terms of new structures and needs. As work and family structure have changed, there have been reverberations throughout society. The roles that working mothers play today in the labor force and in the home, especially in the United States, would be unrecognizable to women a century ago. Unfortunately, this new family lifestyle could be detrimental to family stability, emotional welfare, and societal functioning in the long run (Beris, 1993; Byrne, 1994).

Purpose of the Study

The purpose of this study is to examine the general progress of the purchase of services that replace households' production from the year 1984 through 2002 as an extension of a study conducted by Haron (2000), which focused on outsourcing of household tasks in 1973, 1983 and 1993 among single-mother and married-mother households. Specifically, the purchase service expenditures of working married and single mothers are examined.

The purposes of the study are

- to analyze new purchased service expenditure pattern for all households single and married mother households in the United States, using update data from U.S,
Department of Labor during the period of 1984-2002, use it as update for the prior study conducted by Haron (2000).

- To determine if trends are conducted in similar direction as evidenced in the Haron (2000) research investigation or are changing, which may be do to the terror attacks of September 11, 2001. And/or they may be increasing because of increasing complexity in the economic sphere of the labor force and market place.

- To analyze the factors influencing household expenditures on purchased services in working married and single mother households. It focuses especially on the effect that the marital status of the working mothers’ may have on the market of purchased services expenditures

- To estimate income elasticity of demand for purchased services of working mothers, both single and married, and to determine if this has changed or remained roughly the same as compared to the results of Haron’s investigation (2000).

Data for the study was available for the present analysis from the U.S. Department of Labor, Bureau of Labor Statistics. The study uses three models for the analysis: all-households, married-mother, and single parent households. Study findings analyzed purchase of services that replace household production between 1973 to 2002. The dependent variable is household annual spending on each purchased services category, that is, food away from home (FAFH), housekeeping supplies and services (HKSS), and childcare (ChC). A multivariate regression method was used to examine the relationship between the dependent and independent variables.
Importance of the Study

The role of women in the labor market has gradually changed over the last 50 years, (Vendell & Ramanan 1992). Today half of all university students and more than half of those completing their secondary education are female. The woman is taking on a new role, a role that is judged by societal expectation and value. It is clear that the family is being reshaped by economic and demographic forces such as increases in employment among mothers of young children, (Leibowitz & Klerman, 1995). Leibowitz and Klerman further stated that marriages are changing from an arrangement in which the husband is employed, and the wife does the domestic work to one in which both spouses are employed and both are responsible for child care and housework. According to Vandell and Ramanan, (1992), the norm in the United States is for mothers to be employed outside the home. This was not always the case. It was not too long ago when the norm for most mothers and women in general was at home with their children. Tradition is definitely changing, and so are attitudes towards working mother. In general, attitudes toward the employment of women have undergone a dramatic change, (Moss & Fonda, 1990). The aspect of the role strain experienced by the working mother is dependent on many dynamic variables.

The study is also important because it adds new information on the direction of trends, as identified by Haron (2000). In addition, it provides a greater understanding of the needs of working mothers and the consumption process. Such information can guide agencies in their decision making regarding child care services, for example, as suggested by Edin and Lein (1997) and Shaul (2002).
This information can also provide marketing researchers with a knowledge base from which to analyze the needs of working mothers. In addition, the identification of trends with regard to expenditures for child care, food away from home, and household tasks can help legislators and regulators create laws and regulations concerning the purchase and sale of goods and services, and assist the working mothers in making better purchase decisions when it comes to outsourcing spending behavior. Moreover, studying the working mothers' outsourcing purchase behavior will enhance the understanding of the psychological, sociological, and economic factors that influence all working mothers' behavior.

It is clear from the available literature that knowledge of working mothers' outsourcing purchase behavior can assist in the development of public policy, as it pertains to working mothers' spending behavior. It is just as clear that the identification of continuing or changing trends is important for the same reason. Laws and government regulations have a statistical significant impact on the working mother in the market place. The identification of working mothers' consumer behavior also helps legislators protect working mothers from scams, unethical sales persons, and the misuse of products and services that would risk her and her children's well-being such as using unlicensed non-expert doctors or leaving a child with an unlicensed and untrained baby sitter who may be prone to abusive behaviors, (Bernstein, Mishel; Sharpe, 1997).
Objective of the Study

The objectives of this study were to analyze inequality in distribution of households consumption expenditures from 1973 to 2002, to examine relationship between various expenditure budget components and total expenditures for the time span of 1973-2002; and to determine if the trend in the distribution of households consumption expenditures are continuing or have changed since 1973, and in terms of the three major categories: food away from home, housekeeping, and child care.

The study identified the impact of marginal changes in expenditures for specific commodities on the inequality of total expenditures. That provided useful information that may affect certain policies such as the interdiction of percentage commodity taxes and subsidies. Meeting the objectives of the study was also allowed for the provision of the income elasticity of demand between 1973, 1983, 1993, and 2002. This adds to the significance and to the justification for the study.

Organization of the Study

Chapter 1 serves to introduce the present study. It discusses the topic of concern, the background and significance of the problem, and the purpose of the study. It also provides research questions, limitations, and definitions of terms that were unique to the study. It was noted that this study examines the outsourcing behaviors of the American mothers in the paid and the non paid labor force with regard to household tasks and that the study is divided into five chapters.

Chapter 2 reviews the pertinent literature on previous studies related to outsourcing household tasks. Specifically, it provides a descriptive analysis of household

11
tasks (products and services) that working mothers pay for someone else to do. It also provides an overview of each purchased service or product category and expenditure comparisons between single and married mothers.

Chapter 3 describes the research framework and analytical methods employed by this researcher to collect and analyze the data. Also included are a review of the theoretical background and a description of the theoretical model adapted from Haron, (200). The theoretical framework of the present study derives from a model presented by Haron (2000), which focused on the outsourcing of household tasks for the time periods 1973, 1983 and 1993 among all-households, single-mother and married-mother households.

Chapter 4 presents and analyzes the data. It also provided the descriptive findings, followed by a discussion of the study finding. Chapter 5 focuses on a summary of the research findings, conclusions and implications. This portion of the investigation concludes the research study. It brings together the separate modular components into a unified whole. Thus, it includes a summary of findings, followed by conclusions, and implications. Implications are based on the study's findings and conclusions and related to future research.

Limitations of the Study

There were some limitations in this study as follows:

1. The conclusions reached by the investigative study are limited by that amount of information and data discovered in the books, documents, reports, database searches, investigations, and other related materials comprising the research base
of the study. Conclusions are also limited by the amount of data that was collected from the U.S. Department of Labor, Bureau of Labor Statistics database.

2. After 1993, which is the last year of the prior study, some variables was discontinued by U.S. Department of Labor as the average annual child cost expenditure for working married and single mothers by children age groups.

3. The result of this study can not be transferable to other industries.

4. There is a time limitation on this study, due to frequent change in household expenditure behavior.

5. Finally, an inherent limitation may exist. There could be unknown research and documentation not taken into consideration by the investigation that statistical significantly influenced results. In the view of authorities, however, this is true of any research investigation, regardless of the type of population investigated or the method that is used, (Aczel, 1996), Cooper & Schindler, 2001).

Summary

The challenges, due to the increase in working mothers, have continued year after year, for more than five decades, and continue to this day. As the mother is still the foundation of most children's lives, it is imperative to see how this change will affect our future generations. As these same women become even more important in the American workplace machinery, our understanding of how they affect business can only lead to increased efficiency and effectiveness.
The studies of balancing work and family for mothers of America are of paramount importance to individuals, the organizations that employ them, the families that care for them, the unions that represent them and governments.

This study is reported in 5 chapters. Chapter 2 examines the review of literature on previous studies related to household outsourcing food away from home, housekeeping and child care for all-household, married-mother and single-mothers household.

This thesis focused on the relationship between the 3 model expenditures as dependent variables, and a variety of independent variables as income, age, education, race, marital status and children ages.
CHAPTER II
REVIEW OF THE LITERATURE

Overview

The previous portion of this research study served to introduce the problem of the investigation. Specifically, it introduced the problem of concern, noted the purpose of the study, provided justification for the study, defined important terms unique to the research, and presented the research question.

The purpose of this chapter is to review the literature pertinent to the major dependent and independent variables of the study, as based in the research question. Following subsections are devoted to achieving this purpose. Specifically, this chapter presents a review of literature on past studies related to outsourcing some household tasks among working mothers’ households between the years of 1973 and 1993. The review is divided into the following sections: historical overview and demographics of mothers in the workplace; descriptive studies on outsourcing problems; research reporting the balance between work, family, and household tasks outsourcing. Also reviewed is the spending behavior among working mothers as pertains to the three major categories of food away from home (FAFH), housekeeping “supplies and services” (HKSS) and child care (ChC). A final section concludes the literature review. It presents the more pertinent findings.
History and Demographics of Mothers in the Workplace

When American men enlisted in the armed forces to meet the military needs of World War II, women were encouraged to fill their positions, especially in factories, to supply necessary goods. These mothers were highly praised and became the symbol of patriotism of the highest order, as such an icon as Rosie the Riveter, (Gerson, 1985).

It was at this time that the government established child-care programs with federal funds. After the war was over, however, private businesses as well as various government agencies waged a campaign to get women to leave these positions and return to the home so that returning male veterans could be reinstated in their former jobs. Up until World War II, few women worked outside of the home, and the majority of those women were single without children. But women did not want to give up their new found freedom. Increasingly more joined the labor force, and those already in the market remained. Specifically, of the total amount of women joining the work force between 1947 and 1978, married women’s rate increased from 20 percent to 48 percent, (Crosby, 1991).

Working mothers rebelled against leaving the workplace for two main reasons. First was economics and the choice was between unpaid labor in the homes versus paid labor outside. The second reason pertained to self-actualization. Mothers felt trapped in the housewife role and viewed themselves as unpaid workers; they were in situations that provided little opportunity for their intellectual growth or the satisfactions resulting from achievement, (Crosby, 1991).

In the immediate postwar years, middle-class American society redefined itself around traditional ideals of family life, motherhood, and femininity. A social
transformation took place around contrasting images – that is, between homemakers seen on television such as June Cleaver and Harriet Nelson and that of Rosie the Riveter, generated in large part from the efforts of businesses and the government to relegate women to their places back in the home. As this generation of women reached adolescence and early adulthood, this gender ideology had become the focus of intense criticism, and feminist calls for dramatic changes in gender roles entered the mainstream of social discourse, (Gerson, 1985).

As adults, these women continued to experience a wide variety of conflicting social expectations, gender ideals, cultural values, and interpersonal demands. (Grossman & Chester 1990). Of interest was the fact that this series of cultural and economic conflicts, in turn, lead to the creation and symbolization of yet another cultural icon of femininity: the super mom, who effortlessly could do it all.

Since that time, working mothers have retained the vast majority of traditional responsibilities for care of the households, which includes shopping, child care, and a variety of household tasks, (Bryant, 1988; Crosby, 1991 & Hochschild, 1989). In addition, they retain responsibility for routine financial activities such as paying bills and balancing financial accounts. Research studies also portray this time-pressed lifestyle as an emotionally demanding one often marked by experiences of guilt, frustration, and feelings of being overwhelmed. These psychosocial conditions have given rise to a vast array of advertising and product-promotion images and messages that promise to ease the demands of the juggling lifestyle.

Historical analyses have documented that the marketing of consumer products and services has played a constructive role in shaping gender roles, conceptions of
motherhood, and, consequently, the structure of contemporary lifestyles of working mothers. This process of social construction occurred through a series of influences such as the diffusion of consumer products that increasingly individualized housekeeping tasks and the appropriation of home economics by marketing strategists, (Crosby, 1991).

Over the past few decades, consumer behavior researchers have been encouraged to study the family, especially with respect to decision making (Bellante & Foster, 1984; Bobst, Branson, & Haidacher, 1987; Baker & Tippin, 2002).

In the past, the most comprehensive theoretical marketing model on family purchasing and decision making assumed that children are growing up in a two parent family structure. Historically, marketing research has concentrated on the two parent family structure. Comparatively little research has been conducted on the single parent family form, especially the female-headed household. That changed in the past decade. Currently in actuality, the family structure today includes not only married couples with children, but also a myriad of alternative family structures, including female-headed single parent families, Bittman et al., 1999; Cohen, 1998; Oropesa, 1993; Weagley and Norum, 1989. According to the 1990 US census, there were 92 million households in the United States, with 70 percent considered family households and 30 percent considered non-family households. Of the 64 million family households, approximately 11 percent were headed by females alone, compared with 5 percent in 1970, according to the U.S. Bureau of Labor Statistics. Female-headed single parent families represent the fastest growing family type, up 36 percent since 1980. Throughout the decade and into the next single parent families—especially those headed by women—continued to represent the fastest growing alternative lifestyle.
A current report by the Business Women’s Network (2003) lists the following demographics as pertinent to today’s working mothers in the marketplace, in a general demographic context:

- Seventy percent of married mothers work and 79% of single mothers with children under 18 participate in the labor force.
- About two out of three mothers with preschoolers are employed.
- In 2002, almost three quarters of married mothers work in the U.S. workforce. Thirty-eight percent (38%) work full time and year round.
- Forty percent (40%) of working mothers have children under the age of 18.
- Sixty-four percent (64%) of female executives have children.
- The average 25-year-old woman who works full time, year-round for 40 years will earn $523,000 less than the average 25-year-old man, if current wage patterns continue.

With respect to working mothers’ career demographics are the following demographics:

- The “mother tax” ranks at 7% per child, meaning they earn about that much less over the course of their careers.
- Compounding the situation, working mothers tend to take these breaks in their thirties when their careers are really taking off and salaries are most likely to increase. Also included are the $16,000 per child and benefits, savings, pension benefits and Social Security that are lost due to time away from financial income.
- Most working mothers credit the availability of part-time work schedules during critical child-rearing years as the key to maintaining career momentum.
Seventy-nine percent of working women believes access to paid family and medical leave is more important than increased pay.

Thirty-two percent of working mothers ranked balancing work and life demands as their top concern this year, well above a competitive salary (18%) or even job security (22%).

More than one out of four working mothers' works nights or weekends and two out of five working mothers work different schedules than their husband or partner. Overall, 63% of women work 40 or more hours per week - a slight increase from 60% in 2000.

With respect to working mothers' single parent and child care demographics, the Business Women's Network (2002) lists the following demographics:

- Seventy-five percent of all single mothers are employed.
- If single working mothers earned as much as comparable to men, their family incomes would increase by nearly 17%, and their poverty rates would be cut in half, from 25.3 percent to 12.6 percent.
- Sixty percent of total mothers have children under the age of three, requiring childcare.
- Parents and relatives care for 23% of children and non-relatives care for 16% of children.
- Sixty-three percent of working families at corporations with childcare programs say they get more done and experience greater productivity at work.

The National Women's Law Center (2002) has also reported on demographics of working mothers in today's workforce, suggesting that raising work requirements to 40
hours a week would result in a greater child care burden for low income working families—especially single mothers. Much of their information derives from the U.S. Census Bureau July 2002 publication. Specifically, the National Women’s Law Center (2003) reached the following demographic conclusion associated with this particular population.

- Families with mothers who work full-time have greater child care expenses than families with mothers who work part-time.

- Families with mothers who work full-time are more likely to have their children cared for in more costly formal care arrangements than are families with mothers who work part-time, who are more likely to have their children cared for at no cost by the other parent. Mothers who work full-time have 22% of their children fewer than 5 cared for in a child-care center and a little over 15% of their children fewer than 5 cared for by the other parent when they work outside the home. By contrast, mothers who work part-time have only 13% of their children fewer than 5 cared for in a child care center, but almost 27% of their children fewer than 5 are cared for by the other parent.

- A greater percentage of families with mothers who work full-time incur child-care expenses than do families with mothers who work part-time. 62% of families with children under 5 and mothers working full-time incurred weekly child-care expenses; less than half—44%—of families with children under 5 and mothers working part-time incurred weekly child-care expenses.

- Of those families who incur child care expenses, families with mothers who work full-time spend more weekly on child care than do families with mothers who work part-time. Families with children under 5 and mothers working full-time had
a weekly average of $99 for child care expenses whereas families with children under 5 and mothers working part-time had a weekly average of $78 for child care expenses.

- Low-income communities already have too few child care options. Federal funding freezes and state budget shortfalls are exacerbating this shortage by lowering subsidy rates paid to child-care providers.

- The supply of child care in low-income communities is particularly influenced by state rate policies. Child-care providers, the vast majority of whom are women, simply cannot afford to serve low-income communities in which Child Care and Development Block Grant subsidies are way below the prevailing market rate for care.

- Most states do not offer subsidy rates that encourage providers to remain in low-income communities. Some states are considering lowering rates further in response to funding shortfalls. Less than half of the states set their rates to reflect at least the 75th percentile of the current cost of child care (the rate that allows families to access 75 percent of the providers in their community). Moreover, some states are reducing the rates they offer in response to budgetary crisis – for example, Ohio has frozen reimbursement rates for child-care centers at their 1998 levels.

- In particular, states are cutting reimbursement rates for informal providers – the providers who are most likely to offer services in low-income communities and during nontraditional hours. West Virginia is considering reducing informal provider rates by 50% to close a $3.2 million shortfall in their child-care budget,
Ohio is reducing rates paid to family care providers from the 75th percentile to the 60th percentile, and Michigan has cut relative care rates by 6%.

- It is already very difficult for low-income families to find child care in their communities. For example, statewide surveys of Illinois and Maryland show that there are statistically significantly fewer regulated child care slots per child in high poverty areas than in low poverty areas; another study demonstrates that in Los Angeles affluent parents are twice as likely to find a child care slot in their community than those residing in poor areas.

- Low-income families also are more in need of nontraditional-hour care, which in particular, is very limited. A U.S. General Accounting Office study found that all seven states surveyed had a shortage of care during nontraditional hours. Unfortunately, nontraditional work hours— evenings, nights, rotating shifts and employer-arranged irregular schedules—are more common among low-income workers than other workers. Nationally, one-quarter of former welfare recipients report that their jobs require them to work nontraditional hours – statistically significantly greater than the 17 percent of other working families who have nontraditional work shifts.

- State cuts in income eligibility for subsidies also threaten the supply of care. As states limit the number of low-income families who receive subsidies by lowering income eligibility or freezing intake for these families, child care providers, who are already struggling to provide their services, will end up closing their doors.

In the comparison of labor force activity and housework, aside from the issue of wages, housework and paid labor force employment are comparable in many ways. Both
type of activities are considered to be productive labor (Hochschild, 1997) has recognized similarities across the two working conditions as well. He argues that in both spheres, the bottom line is that work must be done and that workers must be self-directed in their work. Several other dimensions are emphasized also. These include the complexity of the work (certain chores in both contexts are complex), the degree of routine (certain chores are also routine and monotonous), time pressures, the heaviness of physical labor (when applicable), dirtiness (when applicable), and the frequency of being held responsible for things that become out of control. Despite these work dimensions, much of women's work in both contexts continues to be devalued, (Brines, 1994).

As compared to male labor, according to Milkie and Peltola (1999), female labor is characterized as unproductive, marginal, trivial, temporary, intermittent, dispensable, less valuable, less skilled, and less physically demanding. These stereotypes apply both to female households' labor and to women's labor in aid occupations (Long and Kahn 1993; Huysamen, 1997) compared both housework and paid labor force activities to dimensions of conflict and power relations in society. They argued that men exercise considerable power over women's labor in the home through the patriarchal structure of the family, while men maintain control over women in the labor market through their dominance of administrative and supervisory positions. This dual system segregates and devalues the work that women do in society, and increases the relative burdens for women working in and outside of the home.

However, it is important to note that few investigations have focused on contrasting the demands and perceptions of women's work in these two different contexts. Specifically, little research has been conducted on women's perceptions of the
physical and mental demands of the work they do. Therefore, little can be concluded regarding the factors and variables that influence a working mother’s perceptions of her housework in terms of physical or mental demands. This leads to the questions as to how this contrasts to the perceptions of women in the paid labor force and whether or not work loads are perceived as similar or different in the home as compared to the paid labor force. Little research exists with respect to factors that motivate women as well — either in the home or paid labor force, (Bittman, Matheson & Meagher, 1999; Gay and Airasian, 1999).

**Outsourcing Problems**

Childcare and housekeeping services, especially, do involve trust problems. The supplier either works in the home or takes care of the children outside the presence of household members, which increases the likelihood of problems. These trust problems might deter households from outsourcing if no reliable suppliers are available. Housekeeping services are often arranged off the books, i.e. paid in cash with no official records of employment. In the U.S., professional services are not as common as these shadow economy suppliers. In addition, it is not common to turn to relatives or friends for help with cleaning. Moreover, since cleaning is a flexible task, households may be more inclined to do the cleaning themselves if no reliable supplier is available, (Anelauskas, 1999).

For childcare, trust issues might lead households to turn to either care by relatives or professional childcare (daycare centers, play groups, employer-provided
childcare). These two alternatives account for most of the outsourced childcare in the U.S. (U.S. Census Bureau, 1999).

Off the books, childcare alternatives are not as common, and this type of outsourcing is not only used for structural childcare, it is also used for irregular childcare such as a babysitter for one night. In the U.S., non-institutionalized care by non-relatives is used relatively often, although it has been decreasing over time. Preschoolers used this type of care, compared to 28.2% in 1985 (U.S. Census Bureau 1999). Trust problems will probably not deter households from outsourcing childcare, but may cause them to choose professional daycare or unpaid care by relatives. Note that there are availability problems in regards to housekeeping services as well as childcare, so this issue cannot account for the different effects of time constraints for the two tasks.

Clearly, one of the most important of outsourcing problems is the issue of trust. Although trust can be expected to play an important role in outsourcing decisions, the consequences of trust issues have been overlooked in earlier research. Trust problems may reduce the attractiveness of some outsourcing alternatives so that the expected effects of time and monetary constraints are not always observed, (Byrne, Capps & Saha, 1996, Connelly & Kimmel, 2003).

Outsourcing implies that an outsider is performing domestic tasks for a households, and the supplier actually enters the private domain of the household, a domestic helper often cleans people's homes when they are not there, thus creating incentives for opportunistic behavior such as putting less effort into certain tasks that are difficult to monitor (Byrne, Capps & Saha, 1996).
The supplier might have different ideas on how tasks should be done, or might lack expertise, beside child abuse from baby sitters, worry about expensive items at home, and sexual relation between husband and babysitter or the home worker. Moreover, it is often difficult to judge whether a supplier has done a task honestly and correctly. These issues can have consequences for outsourcing decisions (Billings, 1999). Problems may make a households invest in safeguards to prevent problems, or may even deter a households from outsourcing certain tasks. In Australia, only 4% of the households hired someone to do the cleaning in 1993/94 even though it is perceived as a very unpleasant task, (Bittman, Matheson & Meagher, 1999).

Not trusting a housecleaner may cause households to do the cleaning themselves and outsource more likeable tasks such as food preparation, in Australian study, 90% of the households outsourced food preparation to some extent, as noted by Bittman et al., (1999). Organizational theories focusing on the anticipated transaction costs associated with exchanges are used to analyze how trust affects domestic outsourcing. Within this context, the choice between doing one’s own household production and outsourcing is referred to as a “make-or-buy” decision.

Trust may not only influence working mothers’ decisions to buy, it can also affect their choice of outsourcing supplier. Earlier studies on domestic outsourcing did not take the households’ choice of supplier into account, (Capps and Senauer, 1986 & Capps, Tedford, and Havlicek, 1985).

Accounting for trust problems in the analysis of the households’ outsourcing decision-making requires also considering the choice of supplier. In order to prevent problems, households may choose a supplier they trust or one that offers a satisfaction
and guarantee. In this contribution, a distinction is drawn between formal and informal suppliers.

In the event of informal outsourcing, relatives, friends or neighbors perform tasks for the households, such as a grandparent taking care of the children when the parents are at work. The outsourcing relationship is embedded in a social relationship. This is also referred to as “within-network exchange” (Boushey, 2002).

Employing a third party other than a relative, friend or neighbor to perform household and caring tasks as “formal outsourcing” In this case, the only connection between the buyer and the supplier is typically the outsourcing relationship. These formal outsourcing alternatives can be produced in the industrial sector such as frozen meals, or in the service sector such as the domestic helper or handyman, (Boushey, 2002).

Boushey (2002) explains the trust issue, noting that nearly two-thirds of mothers with young children are employed at the present time and nearly three out of four works more than 30 hours per week. This change has made the search for safe, enriching, dependable and affordable child care a critical issue for millions of American mothers. Working mothers must find child care arrangements that meet their needs for the quality care, the location of the child care, affordability, and other characteristics, such as flexible time arrangements.

Boushey (2002) also concluded from her analysis of informal outsourcing as of spring 1999 that 72 percent of working mothers reported using one of the following six kinds of child care for their children under age six:

- Parental care—care by the child’s parent, guardian, or stepparent, either at work or at home.
• Relative care—care by a relative of the child (including siblings 15 years or older), either in the child’s home or someplace else.

• Family daycare—care by a family daycare provider or by someone who is not a relative of the child away from the child’s home.

• Nanny or sitter care—care by someone who is not a relative of the child in the child’s own home.

• Formal daycare—care in a child or daycare center, nursery or preschool, or Head Start program.

• Young sibling—child either cares for him or herself or is cared for by a sibling under age 15.

Boushey (2002) also reported that working mothers with pre-school children (infants to age five) most commonly chose one of three kinds of care as their primary child care arrangement: parental care, care by a relative or care in a formal daycare. This information is provided in the form of her figure 1 and Table 1.

The theoretical framework of outsourcing assumes that households make choices that follow from cost-benefit and time availability considerations, with constraints determining the choice set of households. Subsequently, hypotheses on the consequences of trust problems for make-or-buy decisions and supplier choice are derived from a transaction cost approach. Most of the hypotheses pertain to outsourcing in general. However, if different effects are expected for different tasks, they are specified explicitly.

The literature notes that recent studies show that a wide range of social, economic, and interpersonal factors combine to influence household labor and that housework performance has complex effects on marital and family relationship
According to Connelly & Kimmel (2003); Crosby (1991); Byrne (1994); Haron (2000), more attention has been paid to the household tasks of children, with results generally suggesting that teenage housework is at least as gendered as that of adults. In addition, researchers have moved beyond married couples to analyze the causes and consequences of household labor performance for cohabiters, gay and lesbian couples, single parent households, single persons, retirees, kin networks, and paid domestic laborers.

Figure 1

Child Care Arrangements of Working Mother With Children Under Age Six, 1999.
<table>
<thead>
<tr>
<th></th>
<th>Parent</th>
<th>Relative</th>
<th>Young Sibling</th>
<th>Family Daycare</th>
<th>Nanny or Sitter</th>
<th>Formal Daycare</th>
</tr>
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<tbody>
<tr>
<td><strong>All</strong></td>
<td>33.2</td>
<td>30.9</td>
<td>0.8</td>
<td>19.1</td>
<td>3.6</td>
<td>29.7</td>
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<td><strong>Mother’s Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than high-school</td>
<td>28.8</td>
<td>48.5</td>
<td>0.3</td>
<td>13.5</td>
<td>3.8</td>
<td>19.5</td>
</tr>
<tr>
<td>High-school</td>
<td>34.2</td>
<td>36.3</td>
<td>1.1</td>
<td>14.6</td>
<td>2.4</td>
<td>24.6</td>
</tr>
<tr>
<td>Some college</td>
<td>31.5</td>
<td>31.2</td>
<td>1.0</td>
<td>21.6</td>
<td>3.9</td>
<td>29.5</td>
</tr>
<tr>
<td>College degree</td>
<td>35.9</td>
<td>18.5</td>
<td>0.4</td>
<td>22.8</td>
<td>4.4</td>
<td>39.2</td>
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<td><strong>Mother’s Race</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>White</td>
<td>36.0</td>
<td>25.7</td>
<td>0.7</td>
<td>21.6</td>
<td>3.8</td>
<td>30.9</td>
</tr>
<tr>
<td>African American</td>
<td>21.9</td>
<td>35.8</td>
<td>1.8</td>
<td>13.9</td>
<td>2.8</td>
<td>36.7</td>
</tr>
<tr>
<td>Hispanic</td>
<td>31.3</td>
<td>46.3</td>
<td>0.2</td>
<td>15.4</td>
<td>3.8</td>
<td>18.1</td>
</tr>
<tr>
<td>Other</td>
<td>39.9</td>
<td>43.1</td>
<td>0.8</td>
<td>10.3</td>
<td>1.9</td>
<td>21.9</td>
</tr>
<tr>
<td><strong>Household composition</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Married couple</td>
<td>39.1</td>
<td>26.9</td>
<td>0.6</td>
<td>20.1</td>
<td>3.4</td>
<td>30.0</td>
</tr>
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<td>Cohabitating</td>
<td>30.7</td>
<td>29.6</td>
<td>2.0</td>
<td>22.9</td>
<td>2.5</td>
<td>23.2</td>
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<td>Single mother:</td>
<td>17.7</td>
<td>35.1</td>
<td>1.3</td>
<td>21.4</td>
<td>4.5</td>
<td>33.6</td>
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<td>Living with family</td>
<td>13.6</td>
<td>53.2</td>
<td>1.3</td>
<td>9.0</td>
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<td>28.2</td>
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<td>Living with other adult</td>
<td>32.9</td>
<td>31.2</td>
<td>1.1</td>
<td>13.5</td>
<td>10.6</td>
<td>17.3</td>
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<td><strong>Mother’s usual weekly hours of work</strong></td>
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<td>0-20</td>
<td>48.9</td>
<td>25.3</td>
<td>1.1</td>
<td>10.0</td>
<td>2.6</td>
<td>28.9</td>
</tr>
<tr>
<td>20-29</td>
<td>51.4</td>
<td>30.2</td>
<td>0.2</td>
<td>12.9</td>
<td>5.4</td>
<td>18.5</td>
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<td>30-39</td>
<td>29.0</td>
<td>34.6</td>
<td>0.7</td>
<td>19.7</td>
<td>3.5</td>
<td>28.4</td>
</tr>
<tr>
<td>40-49</td>
<td>28.2</td>
<td>31.6</td>
<td>1.0</td>
<td>21.0</td>
<td>3.3</td>
<td>32.5</td>
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<td>50 or more</td>
<td>29.0</td>
<td>28.0</td>
<td>0.0</td>
<td>23.9</td>
<td>3.5</td>
<td>32.2</td>
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<td><strong>Household income</strong></td>
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<td>Bottom 20%</td>
<td>19.9</td>
<td>46.6</td>
<td>0.0</td>
<td>14.9</td>
<td>4.8</td>
<td>27.5</td>
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<tr>
<td>30-40%</td>
<td>33.3</td>
<td>36.9</td>
<td>0.5</td>
<td>14.8</td>
<td>4.1</td>
<td>23.7</td>
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<tr>
<td>40-60%</td>
<td>36.9</td>
<td>31.9</td>
<td>1.7</td>
<td>18.9</td>
<td>2.7</td>
<td>23.8</td>
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<tr>
<td>60-80%</td>
<td>34.2</td>
<td>30.0</td>
<td>0.8</td>
<td>20.6</td>
<td>2.6</td>
<td>30.2</td>
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<tr>
<td>Top 20%</td>
<td>33.4</td>
<td>22.8</td>
<td>0.4</td>
<td>21.4</td>
<td>4.5</td>
<td>38.1</td>
</tr>
</tbody>
</table>


Table 1

Primary child care arrangement for children under age six (percent) 1999

Note.*1999 refers to March to June of 1999. ** Rows do not sum to 100% because mothers may have multiple children who can be in various kinds of care. In 1999, 16% of mothers using child care used more than one kind of arrangement for their children under age six. Child care arrangements are the following:

**Parental Care** is care by the child’s parent, guardian, or stepparent, either at work or at home.
Relative Care is care by a relative of the child (including siblings 15 years or older), either in the child's home or the care's home.

Family Daycare is care by a family daycare provider or by someone who is not a relative of the child away from home.

Nanny or Sitter care is care in a child or daycare center, nursery or preschool, or Head Start Program.

Young Sibling is that the child either cares for his or hers if or is cared for by a sibling under age 15.

Researchers also have begun documenting similarities and differences in housework among race/ethnic groups and some studies have compared patterns of housework in various countries, (Pittman et al., 1999). Taken as a whole, these studies of household labor provide us with a better understanding of the embeddedness of housework in various social levels and interpersonal processes and offer promise for predicting future trends.

Outsourcing Costs of Children

For the purposes of the present investigation, outsourcing costs for working mothers have been divided into three separate categories. These include childcare, domestic care services, and food away from home (FAFH) expenditures. Of these, the more important by far is outsourcing costs of childcare, among other issues and problems associated with childcare.

As explained by Boushey (2003), the majority of working mothers need to provide care for their families because they are employed. "Two-thirds of mothers with children under age six are employed and of these, the majority work more than 30 hours per week" (p. 1). For this reason, an important concern of a working mother is to find care that meets her family's needs in terms of quality, the location of the child care,
affordability, and flexible time arrangements, among other issues. Of all the ways in which child care can be provided to the working mother, formal care is the most expensive selection, but the best quality. But this choice does not exist for the working poor—that is, for low income working mothers, Boushey, (2003) reports: Formal care is also becoming increasingly difficult for low-income mothers to access. The General Accounting Office reports that since January 2001, two-thirds of states have made changes to their child care assistance policies and of these, 23 limited eligibility for low-income mothers, including former welfare recipients. While welfare reform pushed women into the labor market, it has become increasingly difficult for many mothers to access state assistance in paying for childcare, forcing them to rely on relative care, if they have an able and willing family member, or informal care.

Of interest is the fact that low-income working mothers spend substantially more than welfare mothers on child-care services on a monthly basis. In their comprehensive report on the differences between low income working mothers and welfare mothers, Edin and Lein, (1997) have provided graphic representations which tell a more comprehensive story. Figure 2 clearly illustrates the statistical significant differences in expenditures between welfare-reliant single mothers and wage-reliant single mothers.

As indicated by the researchers, approximately $1,200 out of $1,400 a month is spent by wage-reliant mothers on housing, food, and other essentials as compared to roughly $650 out of $1,400 by welfare-reliant mothers. As specifically noted by the researchers: “wage-reliant mothers spent 50% more than welfare mothers each month, even though patterns of consumption were generally similar.” Total expenses for welfare-
reliant mothers (including funds spent on luxury items) totaled about $875 out of $1,400 as compared to $1,250 by wage-reliant working mothers.

Adopted from Table 4.1, p91 (Edin and Lein, 1997)

T e = Total Expenditures    H = Housing    F = Food    O E = Other Essentials

L = Luxuries

Figure 2

Monthly Expenditures for Single Mother

Child care availability and affordability are two major factors that influence and subsequently deter approximately ten to twenty percent of non-employed women from seeking employment, according to rough estimates. In addition, child care issues and constraints deter about 20 to 25 percent of employed mothers from working more hours.
(Press, 1996). Problems of child care availability are even more of an issue for those mothers who work—or have an opportunity to work late hours and weekends, particularly low-income mothers.

Child-care expenditures also deter some mothers from moving from receiving Aid to Families with Dependent Children (AFDC) to the paid workforce. Child care constraints, including the need for subsidies, also are critical to continuing a working mother's employment. According to Press (1996), many working mothers have been forced to leave paid employment to accepting welfare as a result of major child-care expenditure problems. Her study consisted of a large number of urban mothers in Los Angeles. From her multivariate analysis she concluded that the odds of living in poverty were over two hundred percent greater when non-employed parents (mothers or fathers) reported having concerns about child care that keep them from looking or applying for jobs than when non-employed parents report no such concerns. Childcare expenditures can thus be seen to have an important impact on working mothers, especially low-educated mothers.

It is important to note that past research finds that the higher the level of schooling for a woman or her spouse, “the fewer the number of household tasks undertaken by the households as a whole, and the less time that households devote to them” (Berk, 1985). Increased education may also reflect increases in household economic resources, including opportunities to hire others for childcare or domestic care services such as cleaning and cooking, for example. This, of course, changes the context of being a home worker. Thus, as education increases for the house worker, it would be expected that the physical and mental demands of housework will decrease as well.
because the working mother simply invests less time in household chores, in the paid labor force, higher education levels can also lead to careers requiring high levels of cognitive investment. The implication of this on working mother expenditures is quite clear. But the implications of the physical and mental demands are less clear. It may be hypothesized that higher levels of education for women in the paid labor force lead to higher levels of perceived mental job demands. Given the semiprofessional status and nature of much of women's professional work (nursing and teaching fields especially), the physical demands of women's labor may be higher in these jobs as well (Berk, 1985).

One conclusion that can be drawn from the literature on childcare expenditure problems is that the stress of managing multiple roles among working mothers is greatest and the psychological and economics benefits least when work, childcare, and other family role responsibilities are heavy. Evidence suggests that employed mothers often experience substantial demands from both work and family roles. In particular, mothers entering the work force continue to bear a disproportionate share of households and childcare responsibilities, primarily because of childcare expenditure problems. As a result, home and work responsibilities may frequently be placed in opposition or conflict to one another. Domestic care services and food away from home comprise the other two major categories of concern in the present investigative research study, but the most important variable influencing working mothers is associated with childcare and childcare services.
Economic Evaluation of Household Domestic Labor

The market alternative cost method matches household tasks-cooking, cleaning, and childcare with the dollar value a family would have to pay for such services in the market place. For example, if a family member spends one hour each day washing dishes, then that hour would be valued at the going hourly wage for a dishwasher. Similarly, a price tag would be attached to each activity that a family member engages in cleaning, laundering, bookkeeping, and counseling, for example. Such wage information may be available from the state departments of labor. Otherwise, national average wage information is reported by the U.S. Bureau of Labor Statistics. However, many families find that either market purchased alternatives to services like childcare are far from perfect substitutes or market alternatives are not available in their geographic area. Further, it is difficult to compute one value for an hour spent carrying out several simultaneous tasks. Consider, for example, the problems of attempting to value an hour of time spent by a parent holding a baby while balancing the check book, monitoring dinner cooking, and doing laundry while a child is doing his or her homework (Foster & Memmen, 1992; Beautler and Owen, 1980).

The second approach, the households technician replacement cost method, involves calculating time spent by family members in home production and valuing time at the market wage paid to a housekeeper with comparable skills. This approach addresses the problem of valuing simultaneous activities, but it too has drawbacks since it excludes the management component of housework, the skill most highly valued in the marketplace. For example, even if a housekeeper is hired to complete household chores, the employer must still plan, supervise and evaluate the work. Neither that amount of
time nor its value is included in either the households technician replacement or the service replacement methodology (Foster & Memmen, 1992; Becker, 1965; Lino, 1989).

As Foster & Memmen, (1992) suggested, the concept of opportunity cost underlies the market wage rate cost method, an opportunity cost represents the value of the second best activity precluded by engaging in another. The market wage rate cost method presumes that the opportunity cost associated with home production is one’s market wage rate. That is, the opportunity cost of spending an hour in home production is represented by the wage that one could have earned in the paid labor force. The wage rate is thus assumed to represent the best alternative valuation of what a family member gives up to do house work, or the “cost” of home production.

The drawback of this method is that it understates the value of households’ time. Clearly, the household member must value the work that they do in the home at least as much, if not more, than their outside employment wage. Otherwise they would work in the paid labor force and purchase substitute goods and services from the market. For employed household members the valuation is straightforward. Each hour of housework is valued at the net hourly wage rate, or take-home pay. One’s net hourly wage rate equals the hourly wage on the job minus variable employment costs like taxes. However, if one is not employed, valuing an hour of home production by this method is more difficult. One must assess earnings capacity assuming employment options exist. One valuation approach is assigning the after-tax wage rate of a labor force participant with similar characteristics and qualifications (age, sex, occupation, education, etc.) to an unemployed household member. (Foster & Memmen, 1992; Babbie, 2001).
There have been numerous attempts at deriving population estimates of unpaid work's monetary value and comparing that value to paid production activity measures like GDP. Some have used various methodologies to value households' production time and compared to the findings of other authors with respect to GNP. But estimates of the value of unpaid work in the households to GNP could range from 26-47 percent, depending on the variables included in the valuation model. Listed below are several different methods. Each is described in separate sections. These surveys report average expenditures by detailed categories. Each detailed expenditure category was considered for allocation to one of the household industries, Friedman, 1957; Magrabi, 1991 and Kotler, 1992.

The Wage Methods

Much research regarding the valuation of housework focuses on multiplying one of many alternatives. The method most often used is to multiply wages by the number of hours spent on households' labor. However, there are several problems associated with the housework wage methods. The first of these is the difficulty selecting an appropriate housework wage, of course. According to Dumagan and Meyers, 1992; Stanback, 1979 some investigators use the individual's market wage. Others use the average wage of persons engaged in domestic and personal service. Still other researchers use wages of individual market counterparts for each specific housework activity to value household labor task-by-task (Heien & Wessells, 1990; Zick and Bryant, 1996).
It is clear that the choice of a housework wage is subjective, as Kastens and Brester (1996) have suggested. The problem is that definitive and objective criteria have yet to be established.

The next difficulty pertains to a woman’s economic contribution from work in the home. This is most often considered to be the value of her households’ production and not the value of her respective labor hours. It is important to note that production in the home basically combines labor with capital and other resources, similar to the way that production in the business sector does. Therefore, it may be concluded that a simplistic model in which wage is multiplied by hours of housework does not take into consideration other important inputs. In summary, it does not truly value the economic contribution from housework, even if objective criteria for a housework wage were to be established in any positive sense; the third problem with this approach relates to the fact that households production often involves the production of leisure as well as physical goods and services. This is not taken into consideration when using the housework wage method. As a result, multiplying housework hours by a housework wage may inflate the true monetary value of the particular service that is provided, as Greene (1993) has suggested. Still, this method is by far the most popular and dominant approach in practice, regardless of the inherent problems with the various wage methods. Perhaps this is true because the method is simple and the user enjoys great flexibility.

The Direct Output and Value-Added Methods

Investigators soon learned to focus on valuing the actual output produced from housework rather than the time spent producing it in order to deal with the fact that the
economic contribution from households' labor is the value of the households' production and not the value of the labor time. Simple multiplication of the specific types of household production by their respective market price equivalents (e.g., articles of clothing ironed multiplied by the average market price of having an article of clothing ironed) has been the most direct approach to valuing household output. This direct output method clearly removes the difficulty of selecting a housework wage. Also, all inputs are considered because the market value of output is the sum of the value contributed by each of its inputs.

Another difficulty is also addressed through using this approach. Specifically, the problem of valuing joint outputs with wage methods is removed because the actual goods and services are being valued instead of the time spent producing them. There is still one basic problem associated with this approach, which deters it from widespread popular application; even though the direct output method avoids difficulties of housework wage studies. There is little output data to support its use, as noted by Greene (1993). Although national data is generally available for the amount of time spent in overall household production, this information does not typically include the production of household outputs.

A third approach is called the value-added method. This method includes the benefits of the direct output method, but does not need to measure the actual households' outputs. This theoretical model is derived from the early work of Becker (1965). It has been refined and empirically researched by Fuller (1987) and Greene (1993) since that time and represents a valid model, but most economists have largely ignored the value-added method. There are two reasons why this method is bypassed. First, the most
comprehensive empirical investigation employing this approach was limited to Caucasian households with employed wives. This, in turn, caused the results to be difficult to interpret for other family types and demographic groups – in other words, it biased the generalizability of the results. Second, the large study valued the overall household production of husbands and wives combined. Thus, the results were difficult to relate to individuals with respect to households valuations. In addition, according to Green (1993), the value-added method has never been demonstrated as a practical method for valuing household production.

The Value of Unpaid Household Domestic Labor

According to Baker and Tippin (2002), unpaid work in the household fulfills many important functions. These directly affect well-being and quality of life. Because most homes today generally need input of both paid and unpaid work, the way in which households fulfill these functions can lead to certain advantages and disadvantages; for example, if two similar households have the same income, but one has only one member in paid work and the other has two, the first households has an economic and social advantage in that one of the household members is free to make unpaid contribution to the overall households economy.

It is also important to note that the private and social value of the mother’s unpaid work for whatever work she undertakes has not been included in the system of national income accounts. National Income – a measurement of the production boundary of an economy - is essentially a measure of the money value of the goods and services available to a country as a result of economic activity. In a practical context, it is an
indicator of the economic well-being of any given country. The United Nations agrees upon international standards by which national income is measured. Because the value of production is typically based on market prices, by its very definition, current measures of national income presume that the significance of a thing lay not in its nature, but in its price. When used as a yardstick for measuring well-being, it implies that every item of commerce adds to our nation’s welfare merely because it was produced and purchased. But when some income is not included in the measurement, the results become skewed, (Waldfogel, 1997; Steckler, Mcleroy, Goodman, Bird & McCormick, 1992).

Waldfogel, (1997), further stated, for working women with children, neither the job structure nor the government provides support for such laborious and important work as caring for families, the bottom line is that women are expected to work, but their labor-market opportunities remain severely limited. Caring for children and other family members clearly imposes a large cost in time and money. The gender gap in wages continues to increase, unfortunately. Meanwhile in the American economy, unemployment and a shortage of good jobs still elude many job-seekers. This situation will not be improved in the near foreseeable future either. These labor market hurdles are statistical significant for all women, but they are even a greater problem for single mothers.

Unpaid work and National Income Accounts when refer to unpaid or non-market work includes: unpaid activities by men and women for themselves, for other household members, or for the community and which (activities) may be replaced by market goods or services. The stipulation of including only activities that could be accomplished by hiring a person from the market and outside the households fulfills what has come to be
known as the “third person” criteria of unpaid work. These include the domains of unpaid economic activities for both the family and community. Tradable activities are those activities that meet the third person criteria of unpaid economic activity. Recipient only activities are non-tradable consumption activities that cannot be received for another. Examples include exercise, eating, and leisure activities. Prior to 1993, no unpaid activities were recognized by the United Nations’ System of National Accounts (SNA’s); in 1993, the revised SNA included non-market goods production for family use. (Milkie & Peltola, 1999).

So, what are the implications if tradable households maintenance activities are excluded from the SNA? What makes the difference whether our national accounts measure the value of unpaid work activities such as, raising children? From a theoretical perspective, economists should be concerned with the commission of unpaid work from measures of SNA if we believe that SNAs reflect the sum of all productive activity in a nation. If we wish to concern ourselves with such a measure of productivity, then inclusion of an activity should not be contingent upon its payment.

From an international comparative perspective, when internationally agreed upon measures of SNA exclude the value of unpaid work, lesser developed countries whose economies rely heavily on informal markets for trade, appear to be much less prosperous than their developed country counterparts. The 1993 SNA revision to include non-market production of certain goods (especially subsistence agrarian activities) was intended, in part, to remedy this problem. By excluding unpaid work in the SNA, we risk erroneously attributing substitutions from unpaid to paid activities as growth in the
economy’s production frontier. Consider this potential bias in the context of the increase in women’s labor force participation rates in the United States.

The percentage change in women’s labor force participation rates when compared to the percentage change in either, total personal consumption, non-durable good spending, and services in the US over the last 25 years reveals strikingly similar trends. Is it possible that American’s recent economic growth and prosperity, as measured by GDP, is partly attributed to women’s increased labor force participation? It is possible inasmuch as when parents remain out of the paid labor force and are the primary unpaid care providers for their children, we attribute no value to their contributions in economic accounts. But if they enter the labor force and hire childcare, the value of that service (as measured by the price paid) is immediately counted in GDP. The danger of ignoring unpaid work in national accounts is that such production substitution effects may be attributed instead to real economic growth (Hafstrom, 1985; Paulin and Riordon, 1998; Sharpe, 1995; Babbie, 1990; McCullough, 1997).

Measures of GDP have the potential of being dangerously false indicators of economic growth and well-being. If the quality of market purchased child care services are equivalent to the home produced services, the GDP “growth” that results from our substituting away from parental provided care represents simply a one-to-one trade off, and at worst, no real growth. However, the scientific evidence on these issues is mixed and social scientists are a long way from reaching a consensus about whether market purchased goods (like meals) and services (like day care) are on a par with the home produced goods and services they replace. If indeed market purchased goods are inferior to the home produced ones that they replace, then not only is the domestic product in the
United States not increasing, the economy is actually experiencing a net decline in production (Drucker, 1954; Abdel-Ghany, 1993).

Another example of why it is important to assign an economic value to unpaid work relates to changes in civic and volunteer activities. When men and women spend more time in paid work, they also have less time available for charitable and philanthropic work (Sayer, 2001), for example, recent estimates by Sayer indicate that when women become full time labor force participants, their civic volunteer work decreases by about 39 percent. Numerous other studies have found that their unpaid work in the home decreases by about a third. As fewer people are willing and able to give of their time to charities in aid of the poor, like the example of unpaid child care, that work must be turned over to others. In the case of social assistance, if services are to be maintained, the taxpayer is left to provide the direct cost of these services. As social assistance payments become an ever greater percentage of the tax dollar, it becomes clear that the value of charitable work has been underestimated for quite some time.

**Impact of Public Policy and Social Roles**

The work of family members has been the focus of numerous academic and qualitative discussions with respect to public policy. Most deal with the fast-paced marketplace, services provided by the political sphere, and time constraints faced by dual-earner households. However, it has recently been recognized that the work of families takes place within two arenas. These include the paid labor market and the unpaid work of household labor. The challenge currently facing families is that these two spheres of life are increasingly separate and currently represent mutually exclusive
alternatives for those who are struggling to earn a living wage and to have a fulfilling life by bearing children (Haron, 2000; Milkie. & Peltola,(1999; Neal, Chapman, Ingersoll-Dayton, & Emlen, 1993; Hochschild 1997).

This separation has also impacted the family’s ability to perform both economic and institutional functions, specifically; these functions have statistical significantly been curtailed by the increased modification of individual labor. Movement of the labor market into the family sphere has required an increased work effort on the part of individual members as participants in the paid labor market. At the same time it has made childbearing and rearing more difficult. Also, the political environment is lacking in institutional support for these non-market functions. Individual choice with respect to paid and unpaid labor has largely been removed because families are required to either sacrifice their pride or accept welfare, or work. There is a lack of viable alternatives. Specifically, this lack of alternatives is generated by the actions and interactions of three social forces that shape the economic landscape. These include the following factors:

1. Family organization rooted in patriarchy;
2. The market system; and
3. The social policies of the state.

The patriarchal family structure has remained largely unchanged, although family responsibilities in the paid market have undergone dramatic transformation. The market system has been slow to provide mechanisms by which family members can be effective agents in both the labor market and at home. In addition, the market has exacerbated the problem by creating an environment in which family members must labor longer in both spheres by transforming the labor market from a complex institution
to a spot market where labor is treated as any other commodity. Finally, social policy has not been adequate to the task presented by these changes. The government has not adopted the role of "protector" in creating institutions that inhibit the co-modification of modern labor or that would further the transformation of gender roles in families. The minor efforts made by the government to bring gender equality and relief from the market burdens that families face have not effectively broadened family or individual choice. The restriction of choice places additional stress on individual families as well as society as a whole as these three forces diminish the family's ability to perform the unpaid work that forms the basis of community (Blau, Ferber, & Winkler, 1998; Fong, 1992).

Often researchers assign gendered terms in their respective investigations and thus label these terms and the individuals to whom they apply as, for example, masculine task, feminine tasks, and traditionally female. In applying gendered labels to these activities, the literature explicitly acknowledges that gender influences household labors allocation. This type of labeling also leads to the perpetuation of popular cultural views about housework as "women's work." Recent research suggests that specific tasks can carry different meanings about gender, that these meanings are subject to change, and that there may be several gendered thresholds that men must cross to become high participators (Bianchi, Milkie, Sayer, & Robinson, 2000).

In addition, some researchers use nomenclature that focuses on the content, timing, or character of the tasks themselves. For example, Bianch and her associates (2000) captured the distinction between cooking and cleaning versus such tasks as yard work and auto maintenance by labeling them "inside" versus "outside" domestic tasks. As noted by this research team, women—especially employed women—are doing less
housework than they used to and that men are doing somewhat more and, in fact, the
lines of distinction have definitely become blurred. Based on national time diary studies,
Sayer (2001) reported that American women's time spent on housework declined from 24
hours per week in 1965 to 16 hours in 1985 to 10 hours in 1995, a statistical significant
decline. During that period, employed women not only reduced the time they devoted to
housework but also shifted tasks to the weekends. As a consequence, men's proportionate
contribution to housework has increased.

Historical research and analyses have documented that the marketing of consumer products and services has played a constructive role in shaping gender roles, conceptions of motherhood, and, as a result, the structure of contemporary family lifestyles (Bittman, Matheson, & Meagher, 1999; Brines, 1994; Reskin & Padavic, 1994).

This process of social construction occurred through a series of influences such as the diffusion of consumer products that increasingly individualized housekeeping tasks and the appropriation of home economics by marketing strategists. (Sayer, 2001), among others, concludes from the research that gender parity in the sharing of housework has yet to be reached. As a result, statistical significant attention has been turned toward understanding the role of fairness evaluations in the allocation of households' labor. As noted in the literature, women continue to feel responsible for family members' well-being and are more likely than are men to adjust their work and home schedules to accommodate others. Also, married women are still expected to manage home and family. Not surprisingly, employed wives enjoy less leisure and experience more stress than their husbands do. (Bianch et al, 2000).
Impact of 9/11 Tragedy on Employment of Working Mother

According to a recent press release, the impact of the terrorist attack on the World Trade Center in New York City in monetary terms was estimated between $83 and $95 billion (WTC Impact on NYC, 2002). As a result, the entire nation suffered economically and the ramifications will be felt for many more years in the future. For fiscal year 2003, the report notes, the city of New York will realize a $6 billion deficit. Approximately half of this amount is directly attributed to the attack.

Reuter’s Business Report noted further that the impact on the United States as a whole will be approximately $639 billion (Gralla, 2002). Also, roughly two million jobs have been lost as a direct and indirect result of the air attacks on downtown Manhattan’s World Trade Center. Of these, about 32,000 World Trade Center job positions were forced to relocate. These might never return to New York City, according to the Reuter’s Report, which was one of the first to assess the national economic impact of the disaster (Gralla, 2002).

Clearly, there was and will continue to be a widespread financial and emotional impact from the disaster and financial loss was not limited only to those who lived and worked in the downtown area. According to the city controllers’ office, New York City experienced a 3.1 percent decline in gross city product, the total of goods and services sold. In addition, the city lost 120,000 jobs since that horrendous event just shortly after the September 11th disaster (Gralla, 2002).

The Fiscal Policy Institute (2002) reported that New York City alone would lose a total of 105,200 jobs in the fourth quarter of 2001 as a result of the WTC attacks. Of
this loss, approximately 79,700 were likely to involve layoffs and the remainders – about 25,500 – were likely to be those positions that were relocated outside of the city.

On March 5th of 2002 the New York Labor Department released its annual benchmark revision of the monthly payroll data for New York City. With this data, it was possible for the Fiscal Policy Institute to provide better estimates of the actual job losses occurring during the fourth quarter on a detailed industry basis. The table on the following page presents the updated estimates. The Institute seasonally adjusted benchmarked data at the industry level. As indicated, job losses were heaviest for restaurants, hotels, retail trade, and building services (cleaning, etc.).

The industries shown to be impacted the greatest are also known for employing larger numbers of women as compared to men, especially in certain occupations such as housekeepers, waitresses, night building cleaning crew members, sales persons, and various clerical positions. But no job loss data either before or after the 9/11 disaster could be found for single or married mothers specifically, or for women in general for that matter – other than the annual information contained in U.S. Bureau of Labor Statistics which does not indicate precise impact on this group of working individuals.

Still, it can be deduced from the industry losses themselves that employment of married and single mother’s suffered greater losses than compared to two family households or individual male workers.
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Resources: New York Labor Department, 2002

Table 2

New York City Employment Effects Results From the World Trade Center Attack.

Note: March estimates based on 2001 benchmarked NYS Labor Department data adjusted for FPI estimates of 4th quarter recession related job bases.
Summary

The purpose of this chapter was to review the literature related to the major dependent and independent variables of the present investigation. The first section of the chapter provided an historic overview and demographics of mothers in the workplace, covering the time since World War II up to the present. It was noted that the role and image of working mothers in the marketplace has changed drastically from one decade to the next, depending on the economic imperatives of the country, social/political climate, and social perceptions of what was and what was not appropriate workplace behavior. For example, the working woman in the manufacturing plant became an icon during World War II. Rosie the Riveter became a household image as the ultimate sacrifice and help to the men who were called into the armed forces to serve and die for their country. After the war, however, the image of appropriate workplace behavior changed for women because the government promised military forces that they would not lose their employment on the home front after they served.

Outsourcing problems and costs, especially associated with childcare, were discussed in the next portions of the literature review. For the purposes of the present investigation, outsourcing costs for working mothers are divided and assessed according to three separate categories: childcare, domestic care services, and food away from home expenditures. Of these, however, the more important is outsourcing costs of childcare. The cost of this concern has the greatest impact on working mothers because the majority of working mothers need to provide care for their families because they are employed. For this reason, an important concern of a working mother is to find care that meets her family's needs in terms of quality, the location of the child care, affordability, and
flexible time arrangements, among other issues. Of all the ways in which child care can be provided to the working mother, formal care is the most expensive selection, but the best quality. Nevertheless, this choice does not exist for the working poor – that is, for low income working mothers.

The following section focused on working-mother expenditures and expenditure studies. A number of studies were examined. When note is taken of the differences in income between the genders, it was not surprising to discover that single fathers spend more each quarter on many items such as shelter and utilities, as compared to single mothers. Even so, the two genders spend about the same on a large number of items.

Economic evaluation of households’ domestic work was the topic of concern in the next section. Wage, direct output, and value-added methods were reviewed. Advantages and disadvantages of each were outlined. The value of unpaid household domestic work was also explored. According to the literature, unpaid work in the household fulfills many important functions, which directly and indirectly affect well-being and quality of life. Because most homes today generally need input of both paid and unpaid work, the way in which households fulfill these functions can lead to certain advantages and disadvantages. Research studies also generally concluded that the private and social value of a mother’s unpaid work for whatever work she undertakes has not been included in the system of national income accounts. National Income – a measurement of the production boundary of an economy - is essentially a measure of the money value of the goods and services available to a country as a result of economic activity. In a practical context, it is an indicator of the economic well-being of any given country. When used as a yardstick for measuring well-being, it implies that every item of
commerce adds to our nation’s welfare because it was produced and purchased. But when some income such as a working-mother’s housework is not included in the measurement, the results become skewed.

The next portion of the reviewed was concerned with the impact of public policy and social roles. Labeling activities by gender has and continues to create difficulties in both a social and economic context. Because researchers assign gendered terms in their respective investigations and thus label these terms and the individuals to whom they apply (i.e., masculine task, feminine tasks, and traditionally female), they explicitly acknowledge that gender influences household labors allocation.

Public policy was also noted to be influenced by social views and perceptions of the times. Changes in policy as a result directly and indirectly affect a mother’s ability to find and retain work in the marketplace, which, in turn, affects her ability to purchase child care and domestic services.

The impact of the 9/11 World Trade Towers tragedy on employment was also examined. Although much information could be found regarding the impact to New York City, the nation as a whole, and specific industries, nothing could be found that related specifically to working mothers. However, because the services industries (hotels, restaurants, entertainment, building upkeep, etc.) were the most impacted, it may be concluded that working mothers were also. Specifically, the industries shown to be impacted the greatest are also known for employing larger numbers of women workers as compared to male workers, especially in certain occupations such as housekeepers, waitresses, night building cleaning crew members, sales-persons, and various clerical positions.
This literature review has now laid the foundation for the major dependent and independent variables of the study. The following chapter discusses the methodology and specifically the theoretical orientation of the analysis – that is, the theoretical model that was adapted from the survey’s household production model. This information will then lay the groundwork for the analysis which will follow.
CHAPTER III
RESEARCH METHODOLOGY

Overview

Previous chapters have introduced the problem of concern and reviewed the literature relevant to the major dependent and independent variables of the present investigation. The purpose of this chapter is to present and discuss the methodology of the study and the theoretical background underlying the subsequent analysis. Specifically, this portion of the investigative study describes the methodology employed by this researcher to collect and analyze the data. Before this goal can be achieved, however, it is first necessary to describe the theoretical rationale of the analysis as well as the theoretical model that was adapted from the survey’s household production model. As previously noted, the theoretical framework of the present study derives from a model presented by Haron (2000) which focused on outsourcing of household tasks in 1973, 1983 and 1993 among single-mother and married-mother households.

The data analysis methods included in this research are the descriptive statistic analyses, chi-square analysis, correlation analysis, and multiple regression analysis. For this research study, the level of confidence indicating statistical significance was $p = < .05$.

The next section of the chapter discusses the hypothesized relationship between purchased services expenditures and household type and characteristics. Following sections describe data collection and analysis procedures.
Research Questions

To achieve the purpose of the investigation, resolve the study problem, and meet the major objectives of the present study as stated above, several research questions are posed. The research study was designed specifically to answer these questions. They may now be stated as follows:

1. Is there a statistical significant difference between new purchased service expenditure patterns in 2002 for single and married mother households in the United States as compared to purchased service expenditure patterns for single and married mother households identified in previous years?

2. Is there a statistical significant difference in those to whom the working mother outsourced in 2002 as compared to previous years— that is, in trends that were identified in past studies as a result of the terror attack of September 11, 2001, the new technology of the Internet and/or increasing complexity in the labor force and marketplace?

3. What factors influence household expenditures on purchased services in working married and single parent households, as a result of the effect that marital status of mothers’ market work commitment may have on market purchased services expenditures.

4. What is the income elasticity of demand for purchased services of working mothers, both single and married and has this changed between the years 1973, and 2002?
Research Design

According to Huysamen (1997), "descriptions of quantitative research typically discern a cycle of successive phases of hypothesis formulation, data collection, analysis and interpretation." Using a deductive approach, quantitative research seeks to establish facts, make predictions, and test hypotheses that have already been stated. A large part of the data analysis of quantitative research is statistical, striving to show that the world can be looked at in terms of one reality; this reality, when isolated in context, can be measured and understood, a perspective known as positivism (Gay & Airasian, 1999).

Quantitative researchers are those who find themselves "treating their objects of study as having an existence independent of themselves and without any intrinsic meaning" (Huysamen, 1997). Due to the nature of quantitative research, certain types of research are more likely to be conducted using its methods rather than the methods involved in qualitative research.

Quantitative Method Approaches

Quantitative methods are research methods concerned with numbers and anything that is quantifiable. They are therefore to be distinguished from qualitative methods. Counting and measuring are common forms of quantitative methods. The result of the research is a number, or a series of numbers. These are often presented in tables, graphs or other forms of statistics: (Gay and Airasian, 1999).
1. Descriptive or Survey Research (was done by Department of Labor), this type of research attempts to answer questions about the current status of the subject or topic of study. Usually, this type of research involves studying the preferences, attitudes, practices, concerns, or interests of some group of people. “Two critical issues in descriptive design, both necessary for validity, are the ability to generalize from the sample (which must be large) and the reliability and validity of the observations (measurements)” (Fong, 1992). An example of this type of research would be a pre-election poll to show preferences for a particular candidate or a survey to determine the most popular television shows among teenagers.

2. Correlation Research- This type of research attempts to “determine whether, and to what degree, a relationship exists between two or more variables”. These studies may seek to determine the relationship between standardized test scores and a student’s GPA or may attempt to show whether a student’s socioeconomic status is related to his/her performance in school. In any case, once a relationship is established, it is identified by a correlation coefficient, a number between -1.00 and +1.00. If a correlation is positive, it means that as one variable increases, the other also increases. If a correlation is negative, as one variable decreases, the other also decreases.

3. Causal-Comparative Research- Also called ex post facto research- this type of research seeks to discover a cause-effect relationship between two or more different programs, methods, or groups. The researcher in this type usually does not have control over the causal factor or independent variable because it is
studied after the fact. The effect is called the dependent variable. An example of this type of study would be to determine if using a computer for more than five hours every day causes problems with eyesight.

4. Experimental Research- This type of research also looks for a cause-effect relationship between two or more variables. The difference between this type of research and causal-comparative research is that the researcher has control over the independent variable in experimental research. For example, an experimental researcher may study whether distance education or personalized teacher instruction is more effective for a student’s computational skills.

Quantitative research concerns quantifying relationships between variables so that one can make predictions with a high degree of probability. Another reason is that quantitative research can describe customer’s likes or dislikes of a certain feature in terms of percentage. Quantitative research can even provide an opportunity for those customers to check off one or more reasons underlying that preference (Rabbie, 1990; McCullough, 1997).

According to Huysamen (1997), “descriptions of quantitative research typically discern a cycle of successive phases of hypothesis formulation, data collection, analysis and interpretation.” (p. 48). Using a deductive approach, quantitative research seeks to establish facts, make predictions, and test hypotheses that have been stated. A large part of the data analysis of quantitative research is statistical, striving to show that the world can be looked at in terms of one reality; this reality, when isolated in context, can be measured and understood, a perspective known as positivism (Gay & Airasian, 1999).
The disadvantage of quantitative research is that issues are only measured if participants are familiar with the issues prior to the beginning of the survey (and, therefore, have been incorporated into the questionnaire). Quantitative research is essentially evaluative, not generative, and is not appropriate as an initial learning phase, or as a method to develop creative ideas. The greatest weakness of the quantitative approach is that it analyzes human behavior in a way that removes the event from its real world setting and ignores the effects of variables that have not been included in the model (Steckler, McLeroy, Goodman, Bird & McCormick, 1992).

**Advantages of Quantitative Research**

According to McCullough (1997), some of the advantages to using quantitative research are as follows:

- The results are statistically reliable. That is, quantitative research can reliably determine if one idea, concept, product, package, etc., is better than the alternatives.
- The results are able to be projected to the population. That is, the proportions of respondents answering a certain way are similar to the proportion of the total population that would have answered that way if they all had been asked.
- Quantitative methods are well-suited to addressing the who, what, when and where of consumer behavior.
- Quantitative multivariate methods have the advantage of allowing researchers to measure and control variables.
Disadvantages of Quantitative Research

- According to Huysamen (1997) there are many advantages to quantitative research, there are also many disadvantages, some of those are as follows:

- Quantitative research is neither appropriate nor cost effective for learning why people act or think as they do. The questions must be direct and easily quantified, and the sample must be quite large (200 is an absolute minimum) so as to permit reliable statistical analysis.

- The primary disadvantage of quantitative research is that issues are only measured if they are known prior to the beginning of the survey.

- Quantitative research requires the advance formulation of specific hypotheses.

- Though occurring in both qualitative and quantitative, a possible disadvantage is researcher bias. Researcher bias tends to result from selective observation and selective recording of information, and also from allowing one’s personal views and perspectives to affect how data are interpreted and how the research is conducted.

- Quantitative research also has “the disadvantage that the resulting theory often fails to take account of the unique characteristics of individual cases.

The main reason for using quantitative research is to determine whether a particular population shares certain characteristics in common. It is meant to be a form of research that is appropriate for using statistical analysis and generalization of descriptions. Quantitative research is appropriate for measuring both attitudes and behavior. Therefore, it is a useful form of research to use in order to determine preferences or beliefs of a population as well. Because in its very nature exists a way of profiling a group of
individuals, it is extremely necessary in the field of instructional technology where individuals and their learning characteristics play a major role in the instructional process.

**Definition of Terms**

The importance of understanding the working mothers' outsourcing purchasing behavior is found in the definition of marketing as a "human activity directed at satisfying needs and wants through human exchange processes." (Zick & Bryant, 1996). From this definition, emerge two keys marketing activities. First, marketers attempt to satisfy the needs and wants of their target markets. Second, marketing involves the study of the exchange process in which two parties transfer resources between each other. (Zick & Bryant, 1996).

In the exchange process, firms and individuals receive money and the working mother receive products and services, giving her more free time to enhance her and her family members' quality of life. For marketers to create a successful exchange, they must understand the factors that influence the working mothers' needs and wants, (Zick & Bryant, 1996).

Indeed, consumer primacy is the principle on which the entire field of marketing rests; this principle insists that the consumer should be at the center of the marketing effort. As Drucker (1954) stated, the well-known management scholar has stated, marketing is the whole business seen from the point of view of its final result, that is, from the customer's point of view.

The influence of gender on the conceptualization of role conflict has also been discussed in the available literature. While some researchers define role conflict as that
which is linearly related to the total amount of time spent in paid and family work, this
definition does not account for the impact of gender on individual perceptions of work
and family conflict. (Milkie and Peltola, 1999) proposed a gender role explanation where
expectations, socially constructed in gender, impact a person’s perceptions both of hours
expended in roles and in perceptions of work-family conflict. Their findings support both
traditional definitions of role conflict and their gender-based definition, suggesting that
perceptions of gender influence role expectations and subsequent feelings of equity in the
division of labor. Additionally, individual perceptions of equity do not always parallel
reported equity of tasks performed.

The problem of balancing work and family arises from work-family conflict,
which reflects a mutual incompatibility between the demands of the work role, and the
demands of the family role. The most prevalent type or form of work family conflict
occurs when the time demands of one role make it difficult or impossible to participate
fully in the other. Schedule conflicts and work-role overload are examples of this form of
work-family conflict. Work-family conflict may also involve some form of interference
between one role and another. This may occur when symptoms of psychological strain
(e.g., anxiety, fatigue, irritability) generated by the demands of the work or family role
intrude or “spill over” into the other role, making it difficult to fulfill the responsibilities
of that role. A third type of work-family conflict arises when the behaviors that are
expected or appropriate in the family role (expressiveness, emotional sensitivity) are
inappropriate or dysfunctional when used in the work role. These types of work-family
conflict can produce difficulties for employees and their families, for employers, and for
society as a whole (Connelly & Kimmel, 2003). Excessive interference of work with
family can have adverse effects on individuals' marital relationships and quality of family life. Chronic interference of family with work responsibilities can jeopardize employees' career progress, and thereby reduce their satisfaction with their work lives. From an employer's perspective, severe work-family conflicts can interfere with employees' concentration on their jobs, increase absenteeism, and in extreme cases, lead to voluntary turnover. Thus, the widespread experience of work-family conflict creates multiple problems that affect different stakeholders in different ways. (Connelly & Kimmel, 2003).

Therefore, to understand working hour arrangements, schedules and the implications for a worker's quality of life, one must acknowledge that statistical significant changes to working life have been and are still occurring worldwide. The traditional understanding of working time arrangements revolving around the ideology of a male breadwinner with a supportive wife at home is outdated (Hochschild, 1997; Redman, 1980, 1996).

Moreover, the notion that working time arrangements can be designed around this premise is now unrealistic. Contemporary working and family life have subsequently changed, shift work and roistering principles need to acknowledge, adjust to and incorporate these changes in the development of new flexible, family friendly schedules.
**Models Format**

This study has three models, all households, married-mother, and single-parent households.

**Independent and Dependent Variables**

The dependent variable is a variable that the researcher measures; it is called a dependent variable because it depends upon (is caused by) the independent variable. It is often a continuous quantitative variable. The independent variable is the one that the researcher may manipulate. (Babbie, 2001).

**Dependent Variables**

Within the services industries services are categorized into consumer services (e.g., household operations), producer or business services (e.g., advertising and engineering), and public sector services (e.g., government services for public safety though the police department), Stanbaek (1979). The focus of this research is on consumer services. Specifically, it investigates the impact of mother’s household type and employment on household demand for purchased services. Since the analysis of outsourcing household tasks is viewed from the perspective of household production, the section of the service categories should reflect those that are considered as time saving services. This is because outsourcing of household tasks is on services that are otherwise done in the household.

In light of previous relevant empirical research (e.g., Bittman et al., 1999; Cohen, 1998; Oropesa, 1993; Weagley and Norum, 1989), and the households production
approach, three major services are selected as market purchased services: food away from home, child care, and house keeping. The dependent variables chosen for the regression were the households’ average annual cost of child care, food away from home, and house keeping.

**Definition of Dependent Variables**

Study has three dependent variables:

1. *Food Away From Home (FAFH)*: fast food, take out, delivery, concession stands, buffet, cafeteria, vending machines, mobile vendor, employer, school cafeteria, board or meal plan food, catered affairs (you pay before eating/drinking) Full-service meals, snacks, drink (you pay after eating/drink).

2. *Housekeeping supplies and services (HKSS)*: average annual spending on service as a payment to the server and supplies as detergents, cleansers, mops, proms, bathroom tissues, paper towels, and light bulbs

3. *Child Care (ChC)*:
   - *Relative*: include mothers, fathers, siblings, grand-parents and other relative
   - *Other Relative*: include aunt, uncle and cousins.
   - *An organized Child Care*: a day care center, nursery school, or a preschool
   - *Family Day Care provider*: is a non relative who care for one or more unrelated children in her/his home
   - *In-Home Baby Sitters*: are none relative who provide care within the child’s home.
None Relative: include in-home baby sitters and family day care providers.

**Independent Variables**

The independent variable consists of both continuous and dummy variables, all independent variables explained are not used in each and every model. Each independent variable is described in the following section.

**Income**

Many other consumption studies utilize household observed income or "current receipts" such as before-tax income (e.g., Foster, 1988; Paulin, 1990) to measure household income. However, according to Friedman (1957), household income is composed of permanent and transitory components. Permanent income refers to the household's "normal receipts" or expected stream of disposable income in every period of their lives, while transitory income is referred to as "accidental" income (Friedman, 1957, p. 21-22). In planning their consumption, so that they can maintain a given level of consumption over time, households base their decisions on what they normally receive and what they currently receive. So households are relatively unresponsive to transitory increases and decreases in income. Based on this theoretical reasoning, many studies have utilized household total expenditure as a proxy for household permanent income to predict household consumption on various goods and services (e.g., Paulin and Riordon, 1998; Sharpe et al., 1995).
This study attempts to analyze the effect of different measures of household income on purchased services. Consistent with the theoretical reasoning total expenditure is used as a proxy for household’s normal receipts or permanent income (Friedman, 1957; Magrabi et al., 1991). At the same time, households’ observed income or current receipts is defined as the summation of the annual market earnings of the fathers and mothers. For single mothers household current income consisted only of mother’s earnings. Transitory income is measured by taking the difference between household current receipts and normal receipts. This value may be positive or negative.

Mother’s Marital Status

This variable is used only in the all-households sample model. Mother’s marital status is a dummy variable used to indicate different household types—either single-mother or married-mother household. Married-mother household is the reference group. Married mothers consisted of those who claim to be married at the time of interview, and spouses’ relevant information is available. Single mothers are those who are widowed, divorced, separated, or never married.

Mother’s Age

The age of the mother is coded as a continuous variable. It is represented by the actual number of years of age.
**Mother’s Education**

Dummy variable categories are created to represent four different levels of mother’s education: less than high school, high school, some college, and college and higher. Mothers receiving less than high school education (i.e., those who never attended school, having elementary education or partially attended high school) are used as the reference group.

**Mother’s Occupational Status**

Mother’s occupational status is represented by a dummy variable indicating whether the mother has a professional or managerial occupation or not. Those who are not in professional and managerial occupations consisted of the following: technical, sales and administrative support, service, agricultural related jobs, precision and repair, laborer, armed forces, self employed and not working. The non-professional occupation group is used as the reference group.

**Mother’s Share of Income**

The particular variable is used only in the married-mother household sample to measure the relative (economic) power of mothers in the household, which may influence household decisions on purchased service expenditures. Mother’s share of income is coded as continuous variable. It is calculated by dividing mother’s annual earning with the household’s current income. This variable is also related to as mother’s relative earning contribution throughout the study.
**Household Age Composition**

In place of household size, this study uses four different age groups to reflect different supplies of a demand for household resources-money, time and labor within a household. Household age compositions are represented by the number of household members in four different age groups, each treated as a continuous variable: (1) Infant and preschooler (age 0 to 5); (2) elementary scholar and early teenager (age 6 to 15); teenager at driving age (and 16 to 17); (4) adult (age 18 to 64).

**Mother’s Race (Proportion)**

The mother’s race for married-mother households, mother’s race for single-mother households. It is coded as a dummy variable indicating white, Black, or Hispanic mother.

**Housing Tenure**

The variable for housing tenure is represented by two dummy variables indicating housing ownership: renters, owners with mortgage, or owners without mortgage. Renting is used as the reference group, renters consisted of the following groups: renters, residents who pay non-cash rental payment, and occupants of student housing. Owners with mortgage are defined as those owners with reported and unreported mortgage.
Theoretical Rational Assumptions

Household production has been defined in the early work of Reid (1934) as "those unpaid activities carried on by and for the members of the household which activities might be replaced by market goods or by paid services if circumstances such as income, market conditions and personal inclination allowed the service to be delegated to someone outside the household group" (p.11). This rational was later refined by Becker (1965).

Two major orientations are contained in Reid's (1934) definition. First, his theory emphasizes the potential of outsourcing household tasks such as washing, ironing, and physical and other care of family members. Second, the household unit is perceived from the viewpoint as both a producing and consuming industry. As noted by Kotler (1992), an industry may be defined "as a group of firms that offer a product or class of products that are close substitutes of each other" (p. 235). This theoretical rationale can be modified for the outsourcing household production unit to read, a group of outside members (outsourcers) in the market that offer a service or class of services that are close substitutes for the family member services.

Beautler and Owen (1980) cautioned, however, that substitution for household-produced services with those purchased from the market requires the production of such goods and services to be "separable" from the household. In other words, they can conceivably be delegated to a paid worker with equal or better results than would be obtained from production by the household. A study conducted by Weagley and Norum (1989) empirically tested to determine if household production activities were separable. The researchers examined the Marginal Rate of Substitution (MRS) between market
goods and home produced commodities. If a home producible commodity was perfectly separable, market purchased (i.e., market substitute) goods and services and home produced commodities were perfect substitutes for each other. In this case, the consumer has a straight-line indifference curve, with an MRS slope of -1. This means that the consumer will consume the least costly goods and services (i.e., leading to corner solution) when consideration is given to the consumer preferences and budget (i.e., full income) constraint and the reality that the costs of market goods and home produced commodities are not the same. Thus, it may be concluded that the consumer’s budget constraint is steeper and the greatest utility will be realized by exhausting her income on market goods, if the increase in wage rate leads to higher cost of producing home produced commodities relative to market goods. This can be visualized by placing market goods on the Y axis and households produced goods on the X axis.

The basic theoretical foundation for this study is thus adopted from Becker’s household production model. Household expenditures in the selected categories (childcare, domestic services care, and food away from home) are modeled as a function of market hours of mothers, mother’s contribution to household income, working mother characteristics (education and age), and household characteristics (household composition, race, and region).

**Theoretical Model**

The study uses the household production model developed by Becker (1965) and elaborated upon by Bryant (1990). Becker’s work on household production theory (1965)
hypothesized that a spouse’s decision (in this case, the working mother) to work in the labor market or to specialize in household production is determined by:

- Her labor market productivity;
- Her household productivity;
- The wage rate of the household head (a measure of her labor market productivity);
- The level of income which the household derives from non-labor sources such as interest, dividends, and government transfer payments; and
- The availability of certain types of household capacity.

The household production function model, as presented by Becker (1965), treats a family as a quasi-firm engaged in the production of household commodities. The family combines resources such as purchased goods, household labor, and human capital to produce commodities for the consumption of family members. For example, in producing the family meal, purchased ingredients are combined with the time and knowledge of a household member such as the working mother. Within bounds, the working mother has the ability to substitute these resources. In the example above, when producing a meal, the single or married working mother can rely on a skilled member (such as herself, her husband, or a child) starting from scratch, or on an unskilled member using purchased commodities such as frozen dinners, or another person or persons to purchase commodities and prepare the meal.

The household production model has been used to analyze a variety of household issues. Topics have included the decision on the part of household members to volunteer their time, the role of parents in ensuring quality public education, household
labor in agricultural families, the female labor force participation rate, outsourcing 
activities of single and married working mothers, and the production of religiosity and 
charitable commodities of a nonreligious nature. Of particular interest is the relationship 
between these commodities in the maximization of utility. The relationship between 
inputs (time and money) in the production of these commodities is also of interest. The 
present study uses the household production model in the same manner and for the same 
purpose as Haron (2000), but carries the analysis forward further in time to extend 
through the year 2002 to determine if trends and directions have remained the same or 
have changed as a result of the ever changing and more globalizes economic marketplace.

As previously noted, three separate models are considered in the present research 
investigation. These include all households, married-mother, and single-parent 
households in 1994-2002. Although the household production model used in this study 
basically applies the generalized model, some modifications of some assumptions and 
variables are made in some of the individual models. These are duly noted at the 
appropriate time. In all other instances, variables are defined as they were in the 
generalized model used in Heron’s investigation and were chosen for the same reasons.

In the married-mother and the single-parent households’ model, factors that 
determine households on purchased services are of central interest. In addition, in this 
research, they will be analyzed for the period 1994 through 2002. However, the all 
household model focuses on how different these two groups are with respect to their 
expenditure behavior on purchased services. Therefore, in this model the question of 
concern is whether or not a mother’s marital status affects demand for purchased 
services. Hypotheses on variables representing income, market work hours and, mother’s
and households characteristics are expressed in terms of how they influence the household demand for purchased services. This hypothesis is tested in both models. To avoid redundancy, descriptions of the hypothesized relationships between income variables (i.e., INC1 and INC2) and environmental factors or preference shifters (E), will only be presented in details in the all-household models. Unless otherwise stated, hypotheses involving mothers and household characteristics in married-mother and in single-mother household are as previously explained in the all-household model.

Holding other factors constant, the strength of mothers’ commitment to the labor force (i.e., longer market hours worked per week) is hypothesized to positively relate to expenditure on purchased services. This study also examines how other socio-economic and demographic characteristics of the household affect purchased expenditures for single-mother and married-mother households. These independent variables are household income and environmental factors, considered to be preference shifters. They include household income, mother’s age, mother’s education and occupation, household age composition, and other related factors.

**Hypothesis**

Hypotheses on variables representing income, market work hours and mother and household’s characteristics will be expressed in terms of how they influence the household demand for purchased services. The independent variables (family income, age, average number of persons, children under 18, earners, housing tenure, race, education, average of annual expenditure, work status) will be presented in all three models, (1) all household, (2) married- mother household, and (3) single-parent
As pertains to the expenditure patterns of single-parent families, there is a statistical significant body of literature examining single-parent families from different points of view. An early study conducted by Lino (1989) examined the allocation of expenditures of single-parent households and used the 1984–85 Consumer Expenditure Survey. His findings indicated that these particular households spent 35 percent (the largest share) of their total expenditures on housing, 20 percent on transportation, and 13 percent on food at home. He also concluded from his data that single-parent households spent five percent of their total expenditures on entertainment, three percent on health care, and two percent on education.

Expenditures of single-parent families by marital status were also examined by Lino (1989). According to his results, the total expenditures of single-parent families maintained by a widowed parent were roughly $16,426, and those maintained by a never-married parent amounted to $7,741. Shares of total expenditures for all categories compared in the investigation were similar for the divorced or separated families and the widowed families. However, they differed statistically significantly for never-married parents with respect to the categories of housing, transportation, and food.

In addition, Lino reported on factors influencing the housing, transportation, food, and clothing expenditures of single-parent households, also using data from the 1984–85 Consumer Expenditure Survey. He concluded from his research data that household size, automobile ownership (for transportation), and the gender, age, race, education, and employment status of the single parent were statistical significant factors.
affecting expenditures. Not surprisingly, he also found that the larger the family size, the
greater were the expenditures on transportation and food. The following other statistical
significant socioeconomic characteristics of single-parent households were revealed in
Lino’s study:

- Households headed by women spent 148 percent more on clothing than did
  households headed by men- all else held constant;
- The higher the educational level of the single parent, the greater were the
  expenditures on housing- all else held constant; and
- Whether a single-parent household resided in an urban or a rural area had no
  statistical significant effect on expenditures for housing, transportation, food, or
  clothing.

Although Lino found that homeownership had no statistical significant effect on
housing expenditures for single-parent households, he also found that those who owned
an automobile had transportation expenditures higher than did those who did not own an
automobile- all else held constant. A year later, using the 1987 Consumer Expenditure
Survey, Lino examined child-rearing expenses in single-parent families. In the database,
91 percent of single-parent households are headed by a woman. The findings indicate that
child-rearing expenses increase with the age of the child and with family income. Lino
also found that single-parent households spent slightly more per child than did married-
couple households in the same income group. Estimated total expenditures for the
younger child in a two-child, single-parent household ranged from $3,800 to $5,650 per
year for households in the lower income group and from $7,830 to $10,030 per year for
households in the higher income group. For both income groups, the largest proportion
of child-related expenditures was allocated to housing, while the second-largest proportion was allocated to transportation. This was also the case within each income group, regardless of the age of the child. The smallest share was allocated to health care in each group. The other categories Lino considered were food; clothing; and education, child care, and other expenditures, but no clear patterns emerged for these expenditures.

Another early study conducted by Horton and Hafstrom (1985) examined single and two-parent families in terms of expenses. The researchers compared differences in consumption expenditures between families headed by a single mother (families maintained by a woman without a husband present). The authors modeled total expenditures and expenditures on six consumption categories (total food, food at home, shelter, household expenses, clothing and cleaning, and recreation and reading) as functions of current and permanent income. The major focus of the study was to examine whether families headed by a single mother would change their expenditures on selected items by the same percentage as two-parent families, given the same percentage increase in income for each type of family. The major finding was that only the two families’ expenditures for shelter differed statistically significantly. That is, the authors estimated that married couples would increase their expenditures for shelter by a larger percentage (0.60 percent), given a one percent increase in (current) income, than would single mothers (0.26 percent). However, the authors also found that, for each of the two types of family, a one-percent increase in current income was associated with a one percent increase in expenditures for recreation and reading. Lino’s study, which included single-parent families maintained by fathers and used data from the more recent 1984–85 Consumer Expenditure Survey, found that families maintained by single fathers did not
have different expenditure patterns for housing, transportation, or food, all else held equal, than did families maintained by single mothers. However, Lino did find a statistical significant gender difference in expenditures for clothing. (Families headed by single mothers spent more.).

A more recent investigation by Mohamed Abdel-Ghany and Schwenk (1993) examined differences in consumption patterns of single-parent and two-parent families for six major expenditure categories. The major hypothesis of their study was similar to that of Horton and Hafstrom (1985) - - that is, that the consumption patterns of single- and two-parent families differ as regards major expenditure categories. However, Abdel-Ghany and Schwenk analyzed more recent data that were obtained from the 1989 Consumer Expenditure Survey. They compared the influence of permanent income, family size, geographical region, race, gender, age, and education of the head of the family on the major expenditure categories. Using the Chow test for equality of the entire set of single-parent and two-parent regression coefficients, they found that the five expenditure categories of total food, food at home, household expenses, apparel, and recreation and reading had a statistical significant F-statistic. This means that the consumption patterns of the two groups with regard to those five categories were statistical significantly different. (Only expenditures for shelter were found to be essentially the same.) This finding contrasts with Horton and Hafstrom's that only expenditures for shelter differed statistically significantly between the two groups. The discrepancy may lie in the fact that Horton and Hafstrom compared one specific determinant of expenditures (income), whereas Abdel-Ghany and Schwenk compared models as a whole, through the Chow test.
In summary, several studies by Lino, (1989), Lino, (1987), Hafstrom, (1985) Abdel-ghany and Schwenk, (1993), were reviewed that analyzed the expenditures of single-parent families, and a number of studies have compared differences in consumption expenditures between families headed by single mothers and two-parent families. Yet, despite the fact that single parenting has become commonplace, only limited scholarly attention has been paid to the expenditure patterns of single fathers compared with those of single mothers. Nevertheless, the gender of single parents may play a critical role in a family’s expenditure patterns. Understanding the differential expenditures between the genders is of significance and importance, especially given the increasing number of single-father households. Indeed, one study suggests that using the characteristics of female-headed single-parent families to represent all single-parent families is no longer possible, considering the rapid increase in the number of single-father families during the past two decades; single fathers are much more likely than single mothers to own their homes. In fact, the numbers are almost exactly opposite with regard to owning and renting: nearly two-thirds of single fathers (64 percent) own their homes, while nearly two-thirds of single mothers (63 percent) rent their homes. Like income, homeownership is an important measure of economic well-being. For example, because owners can build equity in their property, they have greater access to loans in case of emergency or even planned-for events, such as their children’s education. Income is an important measure of the ability of parents to provide basic goods and services for their children.

The research investigation found that the income distribution by gender was quite different for single mothers and single fathers. Men were underrepresented in the
two lowest quintiles, with slightly more than one-fourth of single fathers reporting incomes placing them there. By contrast, five-eighths of single mothers are found in that part of the distribution. Single fathers also are about 3 times as likely (47 percent) to appear in the highest two quintiles than are single mothers (15 percent).

Similarly, single fathers report almost twice as much income ($44,634) as do single mothers ($23,188). Also, while single fathers report more income from employment (wages and salaries or self-employment) and savings and investment (interest, dividend, rental, and other property income), single mothers report much more income from assistance sources (for example, unemployment, workers' compensation, public assistance, alimony, and child support). Whereas, on average, about 1 percent of single fathers' total income comes from assistance sources, nearly 18 percent of single mothers' total income comes from these sources.

There are several factors that may explain these differences, according to the researchers. First, the likelihood of having at least one earner is quite different (although the average number of earners is similar for single fathers and single mothers. Less than two percent of consumer units headed by single fathers have no earner, compared with 15 percent of consumer units headed by single mothers. Also, families headed by single fathers are more likely to have multiple earners (16 percent) than are families headed by single mothers (11 percent). Second, single fathers have a higher level of educational attainment than single mothers. About 61 percent of single fathers have at least attended college, compared with about 49 percent of single mothers. Similarly, one in six single mothers has not graduated from high school, compared with one in ten single fathers. Lower levels of education may also explain lower incomes for single mothers. When note
is taken of the differences in income between the genders, it is not surprising that single fathers spend more each quarter on many items such as shelter and utilities, as compared to single mothers. Even so, the two genders spent about the same on a large number of items.

**Hypotheses for the All-Household Model**

For this study, the relationship between mother’s marital status (that defines different family types) and household outsourcing through market purchased services expenditure is of special interest. So the effect of the presence or absence of a spouse in the household to purchased-service expenditures was examined.

*H1a*: considering other socioeconomic and demographic variables, mother’s marital status (being single-mother vs. married-mother households) is not associated with purchased services expenditures.

*H1b*: holding other factors constant, the strength of mothers’ commitment to the labor force (i.e., longer market hours worked per week or working vs. non-working) is not related to expenditure on purchased services.

*H1c*: holding other variables constant, household current (observed) income is not influential to household expenditure on purchased services.

**Hypotheses for Married-Mother Household Model**

In the married-mother household model emphasis is given to the dynamics within families that influence household outsourcing.
H2a: holding other factors constant, the strength of married-mother’s commitment to the labor force (i.e., longer market hours worked per week or working vs. non-working) is not related to expenditures on purchased services.

H2b: holding other factors constant, the strength of father’s commitment to the labor force (i.e., longer market hours worked per week or working vs. non-working) is not related to expenditure on purchased services.

Hypotheses for Single-Parent Household Model

In this model, how other socio-economic and demographic characteristic of the household affect market-purchased services expenditures by single-parent households was examined.

H3a: holding other factors constant, single-mothers’ stronger commitment to the labor force (i.e., longer market hours worked per week or working vs. non-working) is not related to expenditure on purchased services.

In summary, the theoretical basis for this study is adopted from Becker’s household production model. Household expenditures for purchased services categories (child care, food away from home, and domestic services) are modeled as a function of market hours of mothers, market hours of fathers, mother’s relative contribution to household income, mother’s characteristics (education, age, and occupational status) and household’s characteristics (household composition, race of the household head, home ownership and region).
Data Collection

Data that were used in the present investigation derived from the Consumer Expenditure Survey (CES) fielded by the Bureau of Labor Statistics (BLS) in 1984 through 2002. These data sets from this particular source were selected for two important reasons. First, this information represented the newest data sets available. Second, the employment status of women, women's employment commitment, family structure, and the availability of purchased services in the Market has changed dramatically since 1991.

The interview survey used for this study was designed, reputed and collected by U.S. Department of Labor to obtain information on the types of expenditures which respondents can be expected to recall for a period of three months, such as rent. This survey collected detailed data on an estimated information collected represents about 90 to 95 percent of total family expenditures, all data collected in both diary and interview surveys are subject to Census and BLS confidentiality requirements, which prevent the disclosure of the respondents' identities. (U.S. Bureau of Labor Statistics). In order to use the data set for the empirical analyses of this study, the CES raw data were converted to SPSS data sets.

Data Availability

Data and information from the Consumer Expenditure Survey are available in bulletins, reports, tables, analytical papers, and on public-use tapes, CD-ROMs and diskettes. Data is also available on the Internet, the World Wide Web, and the BLS fax on-demand service. Publications may be obtained through the BLS Office of Publications.
and Special Studies, the Chicago regional office of BLS, or from the Government Printing Office. Information on public-use tapes, CD-ROMs, and diskettes can be obtained from the BLS Division of Consumer Expenditure Survey. Publications from the Consumer Expenditures Survey generally include tabulations of average expenditures and income arrayed by family characteristics.

Data and Information Can Be Obtained by Contacting

- U.S. Bureau of Labor Statistics. Division of Information Services, Suite 2860, Massachusetts Avenue, NE. Washington, DC 20212-0001
- http://www.bls.gov/opub/hom/
- phone: [redacted]
- fax: [redacted]

Data Structure

Despite variations in some aspects, such as the variable locations and sometimes the variable definitions, the basic structures of the 1984-2002 data sets are quite similar. The survey 1984-2002 consisted of five processing files and four interview data files, the CU characteristics and income file (FMLY), member characteristics and income file (MEMB), "Detailed Expenditure" or (MTAB) and income (ITAB) files. The MTAB and ITAB files provide monthly expenditures and CU characteristics, and income data respectively. Both files contain information at the UCC level for each CU, the family (FMLY) file is composed of information on consumer unit characteristics, the earning of the reference person and spouse of the reference person, and population weight. The information on characteristics and income is provided at the CU level. The CU
information covers a period of three months (a quarter). The income data are collected using a 12-month recall period. Other information such as age and family size, however, refer to the point at which the CU was interviewed. CU information on this file could change from one quarter to another.

The member file (MEMB) file contains information about selected characteristics and earnings for each individual CU member. Similar to FMLY file, MEMB files contain CU information for a period of three months (a quarter) and can change from one quarter to another. The variable CU-CODE specifically identifies a person's relation to the reference person—i.e., if the person is the reference person, spouse, child or adopted child, grandchild or in-law.

Data Construction

In order to use the data set for the empirical analyses of this study, the CES raw data are converted to SPSS data, this section explains several necessary steps in the manipulation of the data set and the reasons behind them.

As this study utilizes CES data from the year 1984 to 2002, therefore, the most important step in the data construction process was to obtain consistent and comparable data sets for the analysis; in the surveys, the identification of racial groups is done in a more detailed manner than in earlier ones.

Population

According to U.S. Department of Labor, number of consumer units used for the study (household units) in thousands for FAFH and HKSS was as follow: 1984 (90,223),
The purpose of this study was to examine expenditures on purchased services by married-mother and single-mother households, and to analyze the effect of marital status (different household types) on such services. Therefore, two household types, married-mother and single-mother households were of particular interest. To qualify for inclusion in the study, a household must contain a non-retired woman (less than 65 years old) with at least one child less than 18 years old, whose household does not include persons other than parents and their children and is a complete income reporter. For married-mother household, their husbands must be less than 65 years old and currently employed. The combined total sample consists of about 5,000 households each year from 1984-2002, the majority of the sample is married-mother households, since married-mother and single-mother households can also be called families, in this study, the term household and family are used interchangeably.

Sample Design

The consumer Expenditure Survey is a national probability sample of households designed to represent the total civilian non-institutional population. The
selection of households begins with the definition and selection of primary sampling unit (PSU'S), which consist of counties (or parts thereof), groups of counties, or independent cities. The set of sample PSU's used for the survey consists of 101 areas, of which 87 urban areas have also been selected by BLS for the Consumer price index program.

The population of interest is the total U.S. civilian population. Within this framework, the eligible population includes all civilian non-institutional persons (for example, those living in houses, condominiums, or apartments) and all people residing in group quarters such as housing facilities for students and workers. Military personnel living on bases are not included.

**Interview Survey**

The interview survey was designed by U.S. Department of Labor to collect data on the types of expenditures which respondents can be expected to recall for a period of 3 months or longer. In general, expenses reported in the interview survey are either relatively large, which occur on a fairly regular basis, such as rent. Each occupied sample unit is interviewed once per quarter for five consecutive quarters. After the fifth interview, the sample unit is dropped from the survey and replaced by a new household unit. For the survey as a whole, 20 percent of the sample is dropped and a new group added each quarter. New families are introduced into the sample on a regular basis as other families complete their participation. Another feature of the survey is that data collected in each quarter is considered independently, so that estimates are not dependent upon a family participating in survey for a full five quarters.
For the interview, information is collected on demographic and family characteristics and on the inventory of major durable goods of each consumer unit. Expenditure information is also collected in interviews, using a 1-month recall, but is used, along with the inventory information, solely for bounding purposes, i.e., to classify the unit for analysis and to prevent duplicate reporting of expenditures in subsequent interviews.

**Errors of the Sample Survey**

Sample surveys are subject to two types of errors, no sampling and sampling. No sampling errors can be attributed to many sources, such as definitional difficulties, differences in the interpretation of questions, inability or unwillingness of the respondent to provide correct information, mistakes in coding or recording the data obtained, and other errors of collection, response, processing, coverage, estimation for missing data, and interviewer variability.

**Statistical Estimation**

This study utilized statistical methods to investigate the level of relationship between the independent and the dependent variables. A total of four different types of analysis methods were used in this study. They were:

- Descriptive statistics,
- Chi square analysis, correlation analysis and
- Multiple regression analysis.

In this study, the regression equation takes the form as below:
\[ Y = f(X_1 + X_2 + X_3 + X_4 + X_5 \ldots X_n) + e \]

where \( Y \) is the dependent variable.

- \( X_1 \) = Independent variable 1 (income after tax 2002$).
- \( X_2 \) = Independent variable 2 (consumer unit size).
- \( X_3 \) = Independent variable 3 (number of children less than 18 years old).
- \( X_4 \) = Independent variable 4 (number of earners).
- \( X_5 \) = Independent variable 5 (age of reference person).
- \( X_6 \) = Independent variable 6 (health insurance expenditure 2002$).
- \( X_7 \) = Independent variable 7 (income from public sources 2002$).

\( N \) is the number of variables

\( E \) is the error term

**Summary**

Prior studies indicate that single-parents and two-parent families are different when it comes to expenditure behavior patterns in most expenditure categories, single-parent households to have lower total expenditures for the overall and/or for each consumption category, due to their lower financial resources than their married-mother counterparts, and due to the absence of expenditures for a husband.

The next chapter (chapter 4) was designed to add to currently available literature on single and married mother household’s expenditure behavior by comparing the household demand for outsourcing household tasks among the two groups as an update for Haron (2000) study. The theoretical basis used in this study is presented in the following chapter.
The next chapter (chapter 4) was designed to provide the statistical analyses of each of the variables, using stepwise regression technique in SPSS software program to produce values, levels of statistical significant different, tables and graphs. This study was looking to answer the research questions, using data from 1984 to 2002 were obtained from Bureau of Labor Statistic (BLS). Previous study analyses were conducted on data from 1973 through 1993. Prior versus new data are demarcated on charts by a dashed line at 1993.
CHAPTER IV
FINDING

Overview
Three categories of purchased service expenditures were investigated in this analysis as primary response variables:

1. Food Away From Home (FAFH) average expenditure per consumer unit
2. Housekeeping Supplies and Service (HKSS) average expenditure per consumer unit
3. Childcare (ChC) average expenditure per consumer unit.

Data from 1984 to 2002 was obtained from tabulated results of the Consumer Expenditure Survey (CES), published by the Bureau of Labor Statistics (BLS). Previous analyses were conducted on data through 1993. Prior versus new data are demarcated on charts by a dashed line at 1993.

To facilitate comparisons over time, nominal income and expenditure data were converted to real 2002 dollars using the Consumer Price Index (CPI). For example, nominal Food Away from Home expenditure in 1999 was converted to 2002 dollars using the following formula:

\[
FAFH_{1999R} = \frac{FAFH_{1999N}}{CPI_{2002}} \cdot CPI_{1999}
\]

Thus, all financial figures quoted are in real 2002 dollars. Table 5 of the CES summarizes the data by consumer unit structure. Data were extracted for the following groups:

1. Husband and wife, oldest child less than 6 years old (Young Family)
2. Husband and wife, oldest child between 6 and 17 years old (Mature Family)

3. Husband and wife, oldest child greater than 18 (Adult Children Family)

4. Husband and wife, other (Other Family)

5. Single Person, at least one child less than 18 (Single Parent Family)

Consumer units in Groups 1 through 4 all contain a married mother (MM), while consumer units in Group 5 are primarily (88%) single females with children, i.e. single mothers (SM).

These data were used to answer the research questions as described below.

**Analyses Research Question One**

Is there a statistical significant difference between purchased service expenditure patterns in 2002 for single and married mother households in the United States as compared to purchased service expenditure patterns for single and married mother households identified in previous years?

**Finding 1**

Research Question 1 was answered separately for each of the three primary response variables. Note that overall results are shown first to provide context before the data is analyzed by subgroups to evaluate the impact of consumer unit structure (married vs. single mothers). Results are shown below.

**Finding 1a: Food Away From Home (FAFH)**

As shown in Figure 3, FAFH expenditures have increased 26.6% overall since 1984. The average annual expenditure by all participants in the CES on FAFH (2002$) in 1984 was $2,286. This increased by 15.8% to $2,647 in 1993, and in 2002 had climbed
an additional 9.3% to reach $2,894. Over the same time period, total expenditures on food, including both foods at and away from home, climbed 20.7%, from $5,697 to $6,881. While the average proportion of food expenditure spent on FAFH has fluctuated around 40% from 1984 to 2002, both food and FAFH expenditure rose significantly from 1988 to 1991. The 2002 total, however, represents a 2.1% decrease since 1993, when food expenditures were decreasing from their 1989 peak of $7,546. FAFH also peaked in 1989 at $3,147. This increase corresponds in time to an increase in the number of earners per consumer unit, which went from 1.4 to 1.7 in 1988 and peaked at 1.8 from 1989 through 1991, before reaching a plateau at 1.7, where it remains through 2002.

Since 1993, the proportion of food budget spent on FAFH has climbed from 37.7% to 42.1% in 2002. However, average expenditure per earner is fairly constant over time for both total food and FAFH, as shown in Figure 4. Descriptive statistics for FAFH are shown in Table 3.

Explanation of the households expenditure sharp rising and decline between 1987-1992 because of increase the average number of earners per consumer unit as shown in figure 3 was explained under the section “Analyses Research Question Two, Finding 2, B” on page number 111.
Figure 3

Total Food vs. Food Away From Home Expenditure.
Figure 4

Food and Food Away From Home Expenditure per Average Number of Earners per Consumer Unit.
<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Standard Errors Of the Mean</th>
<th>Standard Deviation</th>
<th>Min</th>
<th>Median</th>
<th>Max</th>
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<td>$184</td>
<td>$1,181</td>
<td>$1,572</td>
<td>$1,947</td>
<td>$766</td>
</tr>
</tbody>
</table>

**MM** – Aggregate of Groups 1-4 (N = 76). All other groups (N = 19).

Table 3

**FAFH Expenditure (2002$) by Consumer Unit Structure**

**Note.**
1. Husband and wife, oldest child less than 6 years old (Young Family)
2. Husband and wife, oldest child between 6 and 17 years old (Mature Family)
3. Husband and wife, oldest child greater than 18 (Adult Children Family)
4. Husband and wife, other (Other Family)
5. Single Person, at least one child less than 18 (Single Parent Family) (SP)

Consumer units in Groups 1 through 4 all contain a (married mother) (MM), while consumer units in Group 5 are primarily (88%) single female with children, i.e. “single mothers” (SM).

An analysis of variance (ANOVA) was done to evaluate the difference between groups 1 through 5 with respect to FAFH per person expenditure, blocking by year. Both terms (FAFH expenditure vs time) are highly statistically significant, with model p-values < 0.001. This model has an adjusted R-squared of 92.87%, indicating that 92.87% of the variation in the data is explained by year-to-year variation and the consumer unit structure. Individual confidence intervals were calculated for each group mean. Groups 4 and 5 were not statistically different, since the intervals overlap. All other groups,
however, were statistical significantly different from these two and each other. Results are summarized in Table 4.

Married mothers represented by Groups 1 through 4, show statistical significant different expenditure patterns with respect to FAFH over time relative to Single Mothers (Group 5), as shown in Figure 5. Single mothers spent the least on FAFH of all groups. Expenditures increase with the maturity of the family. Group 4, other nontraditional Husband/Wife Families, showed more financially conservative characteristics, falling between the Young and Mature families in the amount of their expenditures.
Figure 5

Food Away From Home Expenditure Over Time (2002$).

Note.
Group 1: Young family. (husband and wife with children less than 6 years old).
Group 2: Mature Family. (husband and wife with children from 6-17 years old).
Group 3: Adult Children Family (husband and wife with children < 18 years old).
Group 4: Other Husband/Wife Family.
Group 5: Single Parent Family (with children 1-18 years old).

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<thead>
<tr>
<th>Source</th>
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</tr>
<tr>
<td>Consumer Unit Structure</td>
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<td>Error</td>
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<td></td>
</tr>
<tr>
<td>Total</td>
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<td></td>
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</tbody>
</table>

\[ S = 40.49 \quad \text{R-sq = 94.54\%} \quad \text{R-sq (adj) = 92.87\%} \]

Table 4

ANOVA Output: Analyses of Variance for FAFH/CU Size Model by Year and CU Structure.
A similar analysis was done for the proportion of food budget spent on FAFH over time; both terms (by consumer unit structure and over time) are highly statistical significant, with model p-values < 0.001. This model has an adjusted R-squared of 85.14%, indicating that 85.14% of the variation in the data is explained by year-to-year variation and the consumer unit structure. Individual confidence intervals were calculated for each Group mean. Groups 4 and 5 are not statistically different, since the intervals overlap. Likewise for Groups 1 and 2 (Mature and Adult Children Families). Young Families, however, spend a statistically significantly higher proportion of their food budget on FAFH than Single mothers and Husband/Wife-Other Families, but statistical significantly less than more mature families with older children. Results are summarized in Table 5. Data are shown in Figure 6.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
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<td>Year</td>
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<tr>
<td>Consumer Unit St</td>
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</tr>
<tr>
<td>Total</td>
<td>95</td>
<td></td>
</tr>
</tbody>
</table>

Significant = 0.01515  R-sq= 99.62%  R-sq (adj) = 85.14%

Table 5
ANOVA Output: Analyses of Variance for FAFH/Food Model by Year and CU Structure.
Finding 1b: Housekeeping Supplies and Services (HKSS)

As shown in Figure 8, HKSS expenditures have increased 41.7% overall since 1984. The average annual expenditure by all participants in the CES on HKSS (2002$) in 1984 was $532. This increased by 27.8% to $680 in 1993, and by 2002 had climbed an additional 10.9% to reach $754. The largest single-year change in HKSS expenditure was a 30.4% increase from 1987 to 1988. Annual expenditure on housekeeping supplies and services (HKSS) prior to 1988 averaged $533 (2002$). Since 1988, HKSS expenditure averaged $705 (2002$), an increase of approximately 32%. This increase corresponds in time to an increase in the number of earners per consumer unit, which went from 1.4 to 1.7 in 1988 and peaked at 1.8 from 1989 through 1991, before reaching
a plateau at 1.7, where it remains through 2002, as shown in figure 7. However, average expenditure per earner has fluctuated around $400 (2002$) over time for HKSS, as shown in Figure 9.

![Figure 7](image)

**Figure 7**

**HKSS Expenditure Relative to Average Number of Earners per Consumer Unit.**

When separated by consumer unit structure, married versus single mother households show a distinct separation in terms of HKSS expenditure over time, as shown in Figure 9, single mother households (Group 5) are largely constant. Average HKSS expenditures in 1984, 1993, and 2002 are $336, $332, and $337, indicating an overall change from 1984 to 2002 of +0.3%, despite some year-to-year fluctuations. Married-
mother households with young children show the strongest trend, decreasing 24% from $727 in 1984 to $552 in 2002.

HKSS expenditures for the single-mother households are on average 52% those for the other groups, averaging $379 relative to an aggregate mean of $729 for married mother households (Groups 1 through 4), as summarized in Table 6.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Se Mean</th>
<th>St Dev</th>
<th>Min</th>
<th>Median</th>
<th>Max</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$646</td>
<td>$15</td>
<td>$65</td>
<td>$548</td>
<td>$646</td>
<td>$798</td>
<td>$250</td>
</tr>
<tr>
<td>2</td>
<td>$739</td>
<td>$10</td>
<td>$42</td>
<td>$668</td>
<td>$745</td>
<td>$831</td>
<td>$163</td>
</tr>
<tr>
<td>3</td>
<td>$796</td>
<td>$10</td>
<td>$42</td>
<td>$709</td>
<td>$798</td>
<td>$856</td>
<td>$147</td>
</tr>
<tr>
<td>4</td>
<td>$735</td>
<td>$13</td>
<td>$56</td>
<td>$646</td>
<td>$721</td>
<td>$866</td>
<td>$220</td>
</tr>
<tr>
<td>MM</td>
<td>$729</td>
<td>$12</td>
<td>$75</td>
<td>$548</td>
<td>$728</td>
<td>$866</td>
<td>$318</td>
</tr>
<tr>
<td>5-SP</td>
<td>$379</td>
<td>$12</td>
<td>$54</td>
<td>$295</td>
<td>$380</td>
<td>$412</td>
<td>$117</td>
</tr>
</tbody>
</table>

MM – Aggregate of Groups 1-4 (N = 76). All other groups (N = 19).

Table 6
Figure 8

HKSS Expenditure per Average Number of Earners per Consumer Unit.
Finding 1c: Child Care (ChC), Distribution of Children by Race

This section deals with outsourcing child care (ChC), nursery plus kindergarten school enrollment of 3 to 6 years old children by mother’s labor force status (five categories of status) six subcategories of mother’s education, ten family income groups, and three racial groups.

The distribution of the total number of children by race is 70% of all children under this study are White, just over 15% Hispanic and under 15% Black as explained in figure 10.
Figure 10

Distribution of Children Under Care by Race (ChC).

By definition, R-square is the proportion of variation in the dependent variable that is explained by independent variable(s). For married-mother expenditure: R-square = 71.54% of total variation in the expenditures of married mother in 2002. Similarly, 61.82% of total variation in the expenditures of single mother in 2002.

Comparing these two, results may say that $X_1$ and $X_2$ are good predictors of $Y_1$ and $Y_2$ respectively. However, $X_1$ predicts $Y_1$ more accurately than $X_2$ predicting $Y_2$. In a similar way, one may interpret other R-squares. White mother’s education is a very good predictor of the corresponding proportion of children whereas mother’s education is not a statistical significant predictor for other races. The same conclusion holds for income. However, mother’s labor force appears to be statistical significant for all three
races with high R-square for white race compared to other races (table 7, figures 15, 16, 17 and 18).

<table>
<thead>
<tr>
<th>Reference</th>
<th>Figure #</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of children by mother education (ChC)</td>
<td>15</td>
<td>0.886</td>
</tr>
<tr>
<td>White mothers</td>
<td>0.191</td>
<td></td>
</tr>
<tr>
<td>Black mothers</td>
<td>0.0724</td>
<td></td>
</tr>
<tr>
<td>Hispanic mothers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Proportion of children by mothers labor force (ChC) | 16 | |
| White mothers | 0.6549 | |
| Black mothers | 0.4949 | |
| Hispanic mothers | 0.5238 | |

| Proportion of children by family income (ChC) | 17 | |
| White mothers | 0.579 | |
| Black mothers | 0.2212 | |
| Hispanic mothers | 0.0492 | |

| Married and single parents expenditure (ChC) | 18 | 0.7154 |
| Married-mother expenditure: 2002 vs Previous years | |
| Single-parents expenditure: 2002 vs Previous years | 0.6182 | |

Table 7
R² of Married and Single-Mothers Expenditure, Proportion of Children by Mothers Labor Force, Education and Family Income.

**Analyses Research Question Two**

Is there a statistical significant difference in those to whom the working mother outsources in 2002 as compared to previous years – that is, in trends that were identified in past studies – as a result of the terror attack of September 11, 2001, the new technology of the Internet, and/or the increasing complexity in the labor force and marketplace?
Finding 2

A. There are no statistically significant changes in FAFH, HKSS, and ChC in 2002 as compared to the previous years-that is, in trends that were identified in the past study, as a result of the new technology of the internet, nor increasing complexity in the labor force and market place from 2000 to 2002 (before and after September 11, 2001 terror attack) relative to historic year-to-year variation, as shown in Table 8, and Figure 18. Values would be statistically significant at approximately the 95% level of confidence if the difference for this time period exceeded the standard deviation of 2-Interval differences by a factor of 2 or more. Since all 2002-2000 differences are less than the standard deviation, this factor is low, indicating an overall lack of significance.

B. Average annual expenditure on FAFH and HKSS per household significantly increased from the year 1987-1989, then start to declined from 1989-1992, but to a higher point than the starting rising point, and looking for reasons, the following were found:

During 1990/1991, in the globalization era that we live, inflation rates reported by the International Monetary Fund ranged from negative numbers to an annual rate of more than 1,400 percent. Countries like Poland, Argentina, Yugoslavia, and Brazil, where the reported annual rate of inflation was above 1,000 percent, all had experienced high money growth, more than 2,000 percent in Yugoslavia and more than 4,000 percent in Argentina in 1998, Meltzer, 2002. And Desert Storm. The uncertainty of the war outcome may have cause long/short-term effects on the mind-set of business managers. They may see a market of uncertainty, which may influence companies to make cost reductions part of their permanent process (Landsberger, Rubinstein, Wolfstetter and Zamir, 1999).

Unemployment rate started to decline from the year 1987 to 1989 (figure 11), driving households expenditure on FAFH and HKSS to rise in the same period, 1987-
1989, then when the unemployment curve started to rise from 1989-1992, sending negative reaction and causing decline of household expenditures on FAFH and HKSS, but to a higher point than the starting rising point.


Figure 11

<table>
<thead>
<tr>
<th></th>
<th>Average Expenditure</th>
<th></th>
<th></th>
<th></th>
<th>Standard Deviation of 2-Interval Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>FAFH $2,641</td>
<td>$2,779</td>
<td>$2,747</td>
<td>$106</td>
<td>$200</td>
</tr>
<tr>
<td>strom Groups</td>
<td>HKSS $650</td>
<td>$667</td>
<td>$621</td>
<td>-$29</td>
<td>$51</td>
</tr>
<tr>
<td></td>
<td>Childcare $6859.5</td>
<td>$6867.5</td>
<td>$6883.5</td>
<td>$24</td>
<td>N/A</td>
</tr>
<tr>
<td>Groups 1-4</td>
<td>FAFH $2,882</td>
<td>$2,987</td>
<td>$3,012</td>
<td>$130</td>
<td>$217</td>
</tr>
<tr>
<td>(Married</td>
<td>HKSS $716</td>
<td>$727</td>
<td>$692</td>
<td>-$24</td>
<td>$45</td>
</tr>
<tr>
<td>Parents)</td>
<td>Childcare $7036</td>
<td>$7043</td>
<td>$7060</td>
<td>$24</td>
<td>N/A</td>
</tr>
<tr>
<td>Group 5</td>
<td>FAFH $1,680</td>
<td>$1,947</td>
<td>$1,688</td>
<td>$8</td>
<td>$192</td>
</tr>
<tr>
<td>(Single Parents)</td>
<td>HKSS $384</td>
<td>$427</td>
<td>$337</td>
<td>-$47</td>
<td>$96</td>
</tr>
<tr>
<td></td>
<td>Childcare $6683</td>
<td>$6692</td>
<td>$6707</td>
<td>$24</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Table 8
Standard Deviation of All-Groups, Married and Single-Parent Households

Analyses Research Question Three
What factors influence household expenditures on purchased services in working married and single parent households, as a result of the effect that marital status of mothers' market work commitment may have on market purchased services expenditures?

Finding 3
Research question 3 was answered separately for each of the three primary response variables. However, aggregate results affecting all three independent (the three models, FAFH, HKSS and ChC) variables are shown first.

113
General demographic characteristics of the five subgroups are shown in Table 9. Data are averaged over the 1984 to 2002 time frame. Values shown in the table are the mean level for these 19 years. Values in parentheses below are standard errors of the mean calculated from the 19 annual observations.

A statistical significantly higher proportion of Group 5 members have a female reference person (88%) than for the Husband/Wife Groups 1 through 4. These Group 5 households typically have a single earner (average of 0.99) and an average of 1.8 children. A larger proportion of Group 5 households is black (average of 31.3%) and rent their homes rather than own (average of 65.1%).

Each group can be distinctly identified by these characteristics. The distinctive clustering of observations into separate groups that is particularly obvious signifies that each subgroup can be identified on the basis of these independent variables. These data indicate that these household structures have been largely consistent over time.

A higher degree of variation is associated with Group 4, nontraditional households headed by a husband/wife pair, with respect to consumer unit composition.

In Table 9, a very clear distinction can be seen between the single-parent households (Group 5) and the married-parent households (Groups 1 through 4). That size and maturity of the household is important and can be seen by the clustering within the married household subgroups. Single-parent households are primarily single mother households. The reference person for the married subgroups was the wife only 20% of the time on average, as compared to the single subgroup, where the reference person / head of the household is a single parent 88% of the time. Single-parent households are more likely to rent their residences than married households. They are also more likely to
identify themselves as African-American. Other nontraditional married households are also more likely to be African-American, relative to the traditional family structure. These two subgroups, single parent and married nontraditional, are also less likely to have achieved a college education.

<table>
<thead>
<tr>
<th>Group</th>
<th>RP Age (years)</th>
<th>RP Female (%)</th>
<th>RP Black (%)</th>
<th>RP Renter (%)</th>
<th>CU Size</th>
<th>Number Children &lt; 18</th>
<th>Number Earners per CU</th>
<th>Number Seniors per CU</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>31.2 (0.18)</td>
<td>19.3% (2.4%)</td>
<td>6.3% (0.2%)</td>
<td>34.2% (1.1%)</td>
<td>3.47 (0.01)</td>
<td>1.47 (0.01)</td>
<td>1.67 (0.01)</td>
<td>0.00</td>
</tr>
<tr>
<td>2</td>
<td>39.1 (0.12)</td>
<td>18.9% (2.5%)</td>
<td>8.2% (0.2%)</td>
<td>22.4% (0.4%)</td>
<td>4.17 (0.01)</td>
<td>2.17 (0.01)</td>
<td>1.87 (0.01)</td>
<td>0.00</td>
</tr>
<tr>
<td>3</td>
<td>51.9 (0.13)</td>
<td>17.3% (2.3%)</td>
<td>8.1% (0.4%)</td>
<td>12.1% (0.4%)</td>
<td>3.88 (0.01)</td>
<td>0.59 (0.01)</td>
<td>2.65 (0.01)</td>
<td>0.20</td>
</tr>
<tr>
<td>4</td>
<td>48.6 (0.21)</td>
<td>20.7% (2.3%)</td>
<td>15.1% (0.6%)</td>
<td>23.4% (0.5%)</td>
<td>4.96 (0.01)</td>
<td>1.53 (0.01)</td>
<td>2.38 (0.01)</td>
<td>0.51</td>
</tr>
<tr>
<td>5</td>
<td>36.0 (0.18)</td>
<td>88.0% (0.5%)</td>
<td>31.3% (0.5%)</td>
<td>65.1% (0.8%)</td>
<td>2.93 (0.01)</td>
<td>1.79 (0.01)</td>
<td>0.99 (0.02)</td>
<td>0.00</td>
</tr>
</tbody>
</table>

CU = Consumer Unit. Seniors are defined as individuals greater than 65 years in age. RP = Reference Person

Table 9

General Demographic Characteristics of the Five Subgroups.

Average income and expenditure levels by these groups are shown in Table 10. Data are averaged over the 1984 to 2002 time frame. Values shown in the table are the mean level for these 19 years. Values in parentheses are standard errors of the mean calculated from the 19 annual observations. Group 5 has on average less than half the income after tax (measured in real 2002$) compared to any of the other groups. They receive more income from public sources, e.g. welfare, food stamps, unemployment, etc. than other groups. Group 5 is also the only group where the average annual expenditure
exceeds their income after tax. They spend less on FAFH by a factor ranging from 1.4 to 2.3, less by a factor of 1.7 to 2.1 on HKSS.

Another trend noticeable from the chart is that Groups 1 through 3 show a steady increase in both income and expenditure levels as the family matures. The increase in average FAFH and HKS expenditures is largest as the children age from younger than 6 years old to between 6 and 17 years old; the increase in income is largest as the children age from between 6 and 17 years old to over 18.

<table>
<thead>
<tr>
<th>Group</th>
<th>Income After Tax</th>
<th>Income From Public Sources*</th>
<th>Annual Average FAFH Expend</th>
<th>HKSS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M2002$</td>
<td>SE $</td>
<td>M2002$</td>
<td>SE $</td>
</tr>
<tr>
<td>1</td>
<td>52,892</td>
<td>1,355</td>
<td>539</td>
<td>47</td>
</tr>
<tr>
<td>2</td>
<td>58,140</td>
<td>1,191</td>
<td>684</td>
<td>49</td>
</tr>
<tr>
<td>3</td>
<td>64,060</td>
<td>1,060</td>
<td>768</td>
<td>41</td>
</tr>
<tr>
<td>4</td>
<td>54,694</td>
<td>1,009</td>
<td>1,362</td>
<td>93</td>
</tr>
<tr>
<td>5</td>
<td>23,867</td>
<td>395</td>
<td>2,460</td>
<td>168</td>
</tr>
</tbody>
</table>

SE$ = standard errors of the mean in dollars  
M2002$ = mean level in 2002 dollars

Table 10

Average Income and Expenditure Level for The 19 Years, 1984-2002 (FAFH, HKSS).

Note
Public Sources include Unemployment and workers’ compensation, veterans’ benefits, public assistance, supplemental social security income, and food stamps.

Findings 3a: Food Away From Home (FAFH)

A multiple regression model was built to identify factors explain predict FAFH expenditure. Tabulated annual CES data from 1984 to 2002, 19 years, was used to fit the model, where the data were summarized by consumer unit structure (Groups 1 through 5 as discussed previously). Data is graphically depicted in Figure 12.
Independent variables initially considered for entry into the model are listed in Table 13, however; multicollinearity is a concern because of the high degree of correlation between some of the predictors. Because of this, Annual Expenditure was omitted because of its high correlation with Income after Taxes (p = 0.974, P value < 0.001). Likewise, Vehicles were omitted due to its high correlation with Earners (p = 0.976, P value <0.001). Stepwise regression was then used to identify the best-fit model. The ANOVA table resulting from the best-fit model is shown in Table 11 and 12.
The Result Regression Equation Is

\[ FAFH (2002$) = -1488 + 0.0354 \times X1 - 672 \times X2 + 949 \times X3 + 1244 \times X4 + 54.0 \times X5 - 1.07 \times X6 - 0.103 \times X7 \]

All terms are highly statistically significant with p-values < 0.001 except for X7, Income from Public Sources, which is of moderate significance. Excluding this term from the model results in a slightly lower adjusted-R-squared value. Model coefficients are interpreted as the increase in FAFH expenditure that is predicted for a one-unit change in the independent variable. Thus, for example, each additional child under 18 years old is associated with an additional $949 in FAFH expenditure.
<table>
<thead>
<tr>
<th>Sources</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P (Signif of F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>7</td>
<td>49262694</td>
<td>7037528</td>
<td>229.03</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual Error</td>
<td>87</td>
<td>2673339</td>
<td>30728</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>94</td>
<td>51936033</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P-value < 0.05 – Statistical Significant.  **P-Value < 0.01 - Highly Statistical Significant

<table>
<thead>
<tr>
<th>Predictor</th>
<th>SE Coefficient</th>
<th>STD Coefficient (BETA)</th>
<th>t</th>
<th>P (Signif of t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>208.5</td>
<td>-1487.5</td>
<td>-7.13</td>
<td>0.000</td>
</tr>
<tr>
<td>Income after tax (2002$)</td>
<td>0.005353</td>
<td>0.035448</td>
<td>6.62</td>
<td>0.000**</td>
</tr>
<tr>
<td>CU Size</td>
<td>111.7</td>
<td>-672.2</td>
<td>-6.02</td>
<td>0.000**</td>
</tr>
<tr>
<td>Children &lt;18</td>
<td>123.7</td>
<td>949.1</td>
<td>7.67</td>
<td>0.000**</td>
</tr>
<tr>
<td>Earners</td>
<td>269.3</td>
<td>1244.2</td>
<td>4.62</td>
<td>0.000**</td>
</tr>
<tr>
<td>RP Age</td>
<td>7.445</td>
<td>54.029</td>
<td>7.26</td>
<td>0.000**</td>
</tr>
<tr>
<td>Health Insurance (2002$)</td>
<td>0.1368</td>
<td>-1.0718</td>
<td>-7.84</td>
<td>0.000**</td>
</tr>
<tr>
<td>Income from public sources</td>
<td>0.05346</td>
<td>0.10348</td>
<td>-1.94</td>
<td>0.056</td>
</tr>
</tbody>
</table>

*P-value < 0.05 – Statistical Significant.  **P-Value < 0.01 - Highly Statistical Significant

Significant = 175.294  R-Sq = 94.9%  R-Sq (adj) = 94.4%

Table 11

ANOVA Analyses of Variance and Linear Regression Results for All 19 Years 1984-2002 (2002$), All-Households, FAFH.

Note.
DF: Degrees of freedom
SS: Sum of squares
MS: Mean square
F: Mean square regression divided by mean square residual.
SIGNIF F: Likelihood that this result could occur by change
BETA: The B-value for standardized scores of the variable
t: B divided by the standard error of B
SIGNIF t: Likelihood that this result could occur by chance
REGRESSION: Statistics relating to the explained portion of the variance.
<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Input Value of Explanatory Variable</th>
<th>Predicted</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X1</td>
<td>X2</td>
<td>X3</td>
</tr>
<tr>
<td>1 (MM)</td>
<td>$52,892</td>
<td>3.47</td>
<td>1.47</td>
</tr>
<tr>
<td>2 (MM)</td>
<td>$58,140</td>
<td>4.17</td>
<td>2.17</td>
</tr>
<tr>
<td>3 (MM)</td>
<td>$64,060</td>
<td>3.88</td>
<td>0.59</td>
</tr>
<tr>
<td>4 (MM)</td>
<td>$54,694</td>
<td>4.96</td>
<td>1.53</td>
</tr>
<tr>
<td>5 (SP)</td>
<td>$23,867</td>
<td>2.93</td>
<td>1.79</td>
</tr>
</tbody>
</table>

MM = Married-Mothers   SP = Single-Parents

Table 12

Predicted Results at Average Levels for Each Group

Findings 3b: Housekeeping Supplies and Services (HKSS)

A multiple regression model was built to identify factors that help predict HKSS expenditure. Tabulated annual CES data from 1984 to 2002, 19 years, was used to fit the model, where the data were summarized by consumer unit structure (Groups 1 through 5 as discussed previously). Data is graphically depicted in Figure 13.

Independent variables considered for entry into the model are listed in Table 13. Stepwise regression was used to identify the best-fit model. The independent variable considered was Total HKSS expenditure (2002$).

The ANOVA table resulting from the best-fit model is shown in Table 14 and 15.
<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>Income After Taxes (2002$)</td>
</tr>
<tr>
<td>X2</td>
<td>Consumer Unit Size</td>
</tr>
<tr>
<td>X3</td>
<td>Number of Children less than 18 years</td>
</tr>
<tr>
<td>X4</td>
<td>Number of Earners</td>
</tr>
<tr>
<td>X5</td>
<td>Age of Reference Person</td>
</tr>
<tr>
<td>X6</td>
<td>Health Insurance Expenditure (2002$)</td>
</tr>
<tr>
<td>X7</td>
<td>Income from Public Sources (2002$)</td>
</tr>
</tbody>
</table>

Table 13
Independent Variables (FAFH and HKSS).

The Regression Equation Is

\[
\text{HKSS (2002$)} = -499 + 0.00831 \times X_1 + 611 \times X_2 + 26.6 \times X_3 + 84.4 \times X_4 - 1.98 \times X_5
\]

All terms are highly statistically significant with p-values ≤ 0.001 except for

X5 Number of Children under 18 years old, which is of moderate significance. Excluding this term from the model results in a slightly lower adjusted-R-squared value. Model coefficients are interpreted as the increase in FAFH expenditure that is predicted for a one unit change in the independent variable. Thus, for example, each additional child under 18 years old is associated with an additional $26.58 in HKSS expenditure.
Source | DF | SS     | MS     | F       | P(Signif of F) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>5</td>
<td>2112861</td>
<td>422572</td>
<td>167.15</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual</td>
<td>89</td>
<td>224997</td>
<td>2528</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>94</td>
<td>2337858</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P-value < 0.05 - Statistical Significant. **P-Value < 0.01 - Highly Statistical Significant

<table>
<thead>
<tr>
<th>Predictor</th>
<th>SE (Coefficient)</th>
<th>STD Coefficient (BETA)</th>
<th>t</th>
<th>P</th>
<th>(Signifi of t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>229.1</td>
<td>-499.1</td>
<td>-2.18</td>
<td>0.032</td>
<td></td>
</tr>
<tr>
<td>Income after tax (2002$)</td>
<td>0.001815</td>
<td>0.008314</td>
<td>4.58</td>
<td>0.000**</td>
<td></td>
</tr>
<tr>
<td>Ratio of expenditures/income</td>
<td>169.5</td>
<td>611.4</td>
<td>3.61</td>
<td>0.001**</td>
<td></td>
</tr>
<tr>
<td>Children &lt; 18</td>
<td>14.26</td>
<td>26.58</td>
<td>1.86</td>
<td>0.066</td>
<td></td>
</tr>
<tr>
<td>Earners</td>
<td>25.59</td>
<td>84.43</td>
<td>3.30</td>
<td>0.001**</td>
<td></td>
</tr>
<tr>
<td>RP Female</td>
<td>0.3276</td>
<td>-1.9820</td>
<td>-6.05</td>
<td>0.000**</td>
<td></td>
</tr>
</tbody>
</table>

*P-value < 0.05 - Statistical Significant. **P-Value < 0.01 - Highly Statistical Significant

S = 50.2798 R-Sq = 90.4% R-Sq (adj) = 89.8%

Table 14

ANOVA Analyses of Variance and Linear Regression Results for All 19 Years, 1984-2002 (2002$), All-Households, HKSS.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Input Value of Explanatory Variable</th>
<th>Predicted HKSS</th>
<th>Actual HKSS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X1</td>
<td>X3</td>
<td>X5</td>
</tr>
<tr>
<td>1 (MM)</td>
<td>$52,892</td>
<td>0.9234</td>
<td>1.47</td>
</tr>
<tr>
<td>2 (MM)</td>
<td>$58,140</td>
<td>0.9401</td>
<td>2.17</td>
</tr>
<tr>
<td>3 (MM)</td>
<td>$64,060</td>
<td>0.9079</td>
<td>0.59</td>
</tr>
<tr>
<td>4 (MM)</td>
<td>$54,694</td>
<td>0.9518</td>
<td>1.53</td>
</tr>
<tr>
<td>5 (SP)</td>
<td>$23,867</td>
<td>1.1836</td>
<td>1.79</td>
</tr>
</tbody>
</table>

Table 15

Predicted Results at Average Levels for Each Group (HKSS).
Findings 3C: Child Care (CHC)

A multiple regression model was built to identify factors that help predict ChC expenditure. Tabulated annual CES data from 1984 to 2002, 19 years, was used to fit the model, where the data were summarized by consumer unit structure (Groups 1 through 5 as discussed previously). Data is graphically depicted in Figure 14.

Enrollment data from 2002 were analyzed. The total number of children enrolled in nursery school and kindergarten were analyzed using the Chi-Square test. Results of comparisons within race are summarized in Table 16 and 16a. Results of
comparisons between races are summarized in Table 17 and 17a. Within a given race, comparisons could be made relative to Mother’s Employment Status, Mother’s Education, and Household Income, significance of this test indicates that there is a difference in the number of children enrolled per classification between these categories shown in Figure 14.

<table>
<thead>
<tr>
<th>Race</th>
<th>Subgroup</th>
<th>Chi-Square Test Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Mother’s Employment Status</td>
<td>2754.6</td>
</tr>
<tr>
<td></td>
<td>Mother’s Education</td>
<td>2936.7</td>
</tr>
<tr>
<td></td>
<td>Household Income</td>
<td>4298.4</td>
</tr>
<tr>
<td>Black</td>
<td>Mother’s Employment Status</td>
<td>731.3</td>
</tr>
<tr>
<td></td>
<td>Mother’s Education</td>
<td>503.1</td>
</tr>
<tr>
<td></td>
<td>Household Income</td>
<td>172.8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>Mother’s Employment Status</td>
<td>511.4</td>
</tr>
<tr>
<td></td>
<td>Mother’s Education</td>
<td>243.2</td>
</tr>
<tr>
<td></td>
<td>Household Income</td>
<td>30.6</td>
</tr>
</tbody>
</table>

Table 16

Chi-Square: Mother by Race (ChC).

<table>
<thead>
<tr>
<th>Race</th>
<th>Subgroup</th>
<th>Levels of Sig (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Mother’s Employment Status</td>
<td>&lt;0.0001**</td>
</tr>
<tr>
<td></td>
<td>Mother’s Education</td>
<td>&lt;0.0001**</td>
</tr>
<tr>
<td></td>
<td>Household Income</td>
<td>&lt;0.0001**</td>
</tr>
<tr>
<td>Black</td>
<td>Mother’s Employment Status</td>
<td>&lt;0.0001**</td>
</tr>
<tr>
<td></td>
<td>Mother’s Education</td>
<td>&lt;0.0001**</td>
</tr>
<tr>
<td></td>
<td>Household Income</td>
<td>&lt;0.0001**</td>
</tr>
<tr>
<td>Hispanic</td>
<td>Mother’s Employment Status</td>
<td>&lt;0.0001**</td>
</tr>
<tr>
<td></td>
<td>Mother’s Education</td>
<td>&lt;0.0001**</td>
</tr>
<tr>
<td></td>
<td>Household Income</td>
<td>0.0004**</td>
</tr>
</tbody>
</table>

*P-value < 0.05 – Statistical Significant. **P-Value < 0.01 - Highly Statistical Significant

Figure 16a

Levels of Statistical Significant: Mother by Race (ChC).
Table 17
Chi-Square: Race by mother’s Comparison (ChC).

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Chi-Square Test Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race by Mother’s Employment Status</td>
<td>327.0</td>
</tr>
<tr>
<td>Race by Mother’s Education</td>
<td>890.6</td>
</tr>
<tr>
<td>Race by Household Income</td>
<td>1016.2</td>
</tr>
</tbody>
</table>

Table 17a
 Levels of Statistical Significant: Mother by Comparison (ChC).

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Subgroup</th>
<th>Levels of Sig (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race by</td>
<td>Mother’s Employment Status</td>
<td>&lt;0.0001**</td>
</tr>
<tr>
<td>Race by</td>
<td>Mother’s Education</td>
<td>&lt;0.0001**</td>
</tr>
<tr>
<td>Race by</td>
<td>Households Income</td>
<td>&lt;0.0001**</td>
</tr>
</tbody>
</table>

*P-value < 0.05 – Statistical Significant. **P-Value < 0.01 - Highly Statistical Significant.
All were highly statistical significant, indicating that these 3 factors are highly influential in predicting the number of children enrolled per category. Limited childcare expenditure data were available from the U.S.Census Bureau, Bureau of Labor Statistics published from 1995 through 2002. Data is broken out for married vs. single head of household and by age of child. Additional tables were available for certain subgroups of the married demographic, such as by income and by region of the U.S., but these data are
not available for the single demographic and so could not be directly compared. Data are shown in Figures 15 through Figures 18.

Data were analyzed using Analysis of Variance. Results are shown in Table 18. Both income and child age group factors are highly statistically significant, indicating that both income and child age group influence the average annual expenditure on child care expense for a household in the U.S.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P (Signif of F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>6</td>
<td>33183548</td>
<td>5530591</td>
<td>100.14</td>
<td>0.000**</td>
</tr>
<tr>
<td>Age of child</td>
<td>5</td>
<td>30220634</td>
<td>6044127</td>
<td>109.4</td>
<td>0.000**</td>
</tr>
<tr>
<td>Household income</td>
<td>1</td>
<td>2962914</td>
<td>2962914</td>
<td>53.7</td>
<td>0.000**</td>
</tr>
<tr>
<td>Residual Error</td>
<td>89</td>
<td>4915133</td>
<td>55226</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>38098681</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P-value < 0.05 - Statistical Significant.  **P-Value < 0.01 - Highly Statistical Significant = 235.0  R-Sq = 87.1%  R-Sq(adj) = 86.2%

Table 18

ANOVA Analyses of Variance Results for Married-Mother Households (ChC).
Figure 15

Proportion of Children by Mother’s Education and race (ChC)

Note.
E 0-8: Elementary 0-8 years old
HS 9-11: High school 9-11 years old
HSG: High school graduate
<BS: Less than bachelor degree
BS+: Bachelor degree or more old
NLMW: Not living with mother
Figure 16

Proportion of Children by Mother Labor Force and race (ChC)

Note.
UE: Mother unemployed
NLMW: Not living with mother
PT: Mother employed part-time
NLF: Mother not in labor force
FT: Mother employed full-time
Figure 17

Proportion of Children by Family Income and race (ChC).
Figure 18

Child Care Annual Average Expenditure for All-Household (A-H), Married-Mothers (MM) and Single-Parents (SP) Over Time (2002$) ChC
Analyses Research Question Four

4. What is the income elasticity of demand for purchased services of working mothers, both single and married, and has this changed between the years 1973 and 2002?

Finding 4: The income elasticity of demand $\eta_i$ is a measure of the percentage change in consumption relative to a percentage change in income. Income elasticity is calculated as

$$\eta_i = \left( \frac{\partial Q}{\partial I} \right) \cdot \left( \frac{I}{Q} \right),$$

Where the consumption function is $Q = f(I)$ and $\frac{\partial Q}{\partial I}$ is the first derivative of Q with respect to I. The consumption function Q models the expected consumption of households with respect to the independent variables, e.g. income, number of children, number of earners, etc. Expenditures with an estimated elasticity over one are considered luxury items, whereas expenditures with an estimated elasticity less than one are considered necessities. Elastic ties were evaluated at mean values for all relevant variables for the all-households model.

Average FAFH, HKSS, and Childcare expenditures are shown in Table 19 as a proportion of Total Average Annual Expenditures. This updates Table 5.5 and 5.8 of Haron (2000), which analyzed similar data through 1993. In all cases, these expenditures have increased as a percentage of annual total expenditures.

In summarizing the elasticity estimates, results were calculated from household current income. The total income elasticity indicates the percentage change in expenditure on every purchased service (FAFH, HKSS and ChC), and the result is elastic if the total elasticity is equal or more than 1, and inelastic if the curve is less than one (McCracken and Brandt, 1987).
Elastic vs Inelastic

Equal or more than one. In this case, the quantity demanded is relatively elastic, meaning that a price change will cause an even larger change in quantity demanded.

Less than one. In this case the quantity demanded is relatively inelastic, meaning that a price change will cause less of a change in quantity demanded.

Degree of necessity or luxury. Luxury products tend to have elasticity, and necessity products tend to have inelasticity.

Result of the Elasticity Estimations: All-Household

FAFH: Total elasticity for FAFH in 1973 is greater than one, indicating that FAFH is considered a luxury good in this particular year. However, FAFH is considered as a necessity good in 1983, 1993 and 2002 as their total elasticity are less than one (Table 19 and Figure 19).

HKSS: Housekeeping supplies and services are considered a luxury good in 1973, 1983 and 1993, but not in 2002 where it was considered a necessity. However, it is interesting to note that total elasticity for this expenditure is consistently getting smaller between 1973 and 1993 (Table 19 and Figure 19).

ChC. Childcare was under 1, inelastic (necessity) in all four periods, 1973, 1983, 1993 and 2002. However, 2002 was more necessity than 1973, 1983, and 1993 (Table 19 and Figure 19).

Trends. During the prior study by Haron (2000), FAFH was changed from luxury in 1973 to necessity in 1983, less necessity in 1993, to lesser necessity in this study, 2002.

HKSS was luxury during the prior study by Haron (2000), then trend move to necessity in this study with total elasticity of 0.839. ChC trend was necessity all the time.
during the prior study and this new study. However, in the new study, 2002, child care was more necessity than the rest of the periods (Table 20 and Figure 25).
<table>
<thead>
<tr>
<th>Year</th>
<th>Quantity Elasticity</th>
<th>Enter/Exit Elasticity</th>
<th>Total Elasticity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FAFH</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1973</td>
<td>0.883</td>
<td>0.581</td>
<td>1.464</td>
</tr>
<tr>
<td>1983</td>
<td>0.396</td>
<td>0.238</td>
<td>0.635</td>
</tr>
<tr>
<td>1993</td>
<td>0.484</td>
<td>0.229</td>
<td>0.714</td>
</tr>
<tr>
<td>2002</td>
<td>0.575</td>
<td>0.357</td>
<td>0.932</td>
</tr>
<tr>
<td><strong>HKSS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1973</td>
<td>0.589</td>
<td>1.178</td>
<td>1.767</td>
</tr>
<tr>
<td>1983</td>
<td>0.214</td>
<td>1.418</td>
<td>1.632</td>
</tr>
<tr>
<td>1993</td>
<td>0.430</td>
<td>1.161</td>
<td>1.591</td>
</tr>
<tr>
<td>2002</td>
<td>0.518</td>
<td>0.321</td>
<td>0.839</td>
</tr>
<tr>
<td><strong>ChC</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1973</td>
<td>0.196</td>
<td>0.256</td>
<td>0.452</td>
</tr>
<tr>
<td>1983</td>
<td>0.109</td>
<td>0.150</td>
<td>0.259</td>
</tr>
<tr>
<td>1993</td>
<td>0.158</td>
<td>0.160</td>
<td>0.318</td>
</tr>
<tr>
<td>2002</td>
<td>0.101</td>
<td>0.137</td>
<td>0.238</td>
</tr>
</tbody>
</table>

Table 19


Note.
The total elasticity is the sum of the quantity and market participation (entry/exit) elasticity.
The elasticity are evaluated at the mean values for all relevant variables for the all-households models by the specified level of the independent variables.
Data for the year 2002 were resourced from U.S. Census Bureau, Bureau of Labor Statistics (2004).
Estimates for prior years were obtained from Table 6.13 of Haron (2000)
Other Miscellaneous Findings

Since 1988, average annual expenditures have exceeded income after taxes by an average margin of 20%. In 2002, this margin had decreased to 12%. In 1988, the average number of earners per consumer unit increased from 1.4 to 1.7, peaking at 1.8 from 1989 through 1991. This 23% average increase in earning capacity is not associated with an increase in either income before or after tax, however; there is instead a 29% average increase in average annual expenditures.

Average annual expenditures were largely flat from 1990 through 1998, but had increased approximately 6% by 2002, from $49,273 to $52,334. Average income after
taxes has also increased during this time frame, but at a greater rate. Average income after taxes increased by approximately 17% since 1998, from an average of $40,105 to $46,934. The ratio of expenditures to income after tax has decreased from a peak of 1.25 in 1993 to 1.12 in 2002 as shown in figure 20.

![Annual Income and Expenditures Relative to Average Number of Earners per Consumer Unit](image)

Figure 20.

Annual Income and Expenditures Relative to Average Number of Earners per Consumer Unit Over Time (2002$).

All groups show a steady decrease in the ratio of expenditures to income after tax, but the rate of decrease depends on whether the consumer unit is a Husband/Wife
combination vs. a Single Parent. For groups 1 through 4 (Husband/Wife), the ratio has been decreasing at a roughly linear rate of 0.0091 (~1%) per year. For group 5 (Single Parents), this rate has been decreasing at 0.0037 (~0.4%), statistically significantly slower as shown in table 21 and figure 21.

The regression model that describes this relationship is shown below:

\[ Ratio = 19.1 - 0.00910 \cdot Year - 10.6 \cdot C + 0.00544 \cdot C \cdot Year \]

where Ratio is the ratio of annual expenditure to income after tax, Year = 1984..2002,

and \( C = \begin{cases} 0 & \text{if Married} \\ 1 & \text{if Single} \end{cases} \). Therefore, for Married households, the equation becomes \( Ratio = 19.1 - 0.00910 \cdot Year \); while, for Single Parent households, the equation becomes \( Ratio = 8.5 - 0.00366 \cdot Year \)
Figure 21.

Ratio of Annual Expenditure to Income After Tax Over Time (2002$)

<table>
<thead>
<tr>
<th>Model Term</th>
<th>SE Coef</th>
<th>STD Coefficient (BETA)</th>
<th>T</th>
<th>P (Signif of t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.455</td>
<td>19.058</td>
<td>13.10</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Year</td>
<td>0.0007302</td>
<td>-0.0090956</td>
<td>-12.46</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Marital Status</td>
<td>3.254</td>
<td>-10.581</td>
<td>-3.25</td>
<td>0.002</td>
</tr>
<tr>
<td>Interaction</td>
<td>0.001633</td>
<td>0.005436</td>
<td>3.33</td>
<td>0.001</td>
</tr>
</tbody>
</table>

*P-value < 0.05 – Statistical Significant. **P-Value < 0.01 - Highly Statistical Significant

Table 20

ANOVA Analyses of Variance and Linear Regression Results for Husband/Wife vs Single-Parent Expenditure For 19 Years 1984-2002
CHAPTER V
DISCUSSION AND CONCLUSIONS

Overview

Chapter five presents a summary of the findings in this study about household expenditure on outsource. The chapter is divided into three main sections: The first section contains the summary and conclusions of the study, followed by implications and future research.

Summary and Conclusions

Research Questions

Four research questions address the purposes of this study. These questions are as follows:

1. Is there a statistical significant difference between new purchased service expenditure patterns in 2002 for single and married-mother households in the United States as compared to purchased service expenditure patterns for single and married mother households identified in previous years?

2. Is there a statistical significant difference in those to whom the working mother outsourced in 2002 as compared to previous years— that is, in trends that were identified in past studies as a result of the terror attack of September 11, 2001, the new technology of the Internet and/or increasing complexity in the labor force and marketplace?
3. What factors influence household expenditures on purchased services in working-
mariated and single-parent households, as a result of the effect that marital status 
of mothers’ market work commitment may have on market purchased services 
expenditures.

4. What is the income elasticity of demand for purchased services of working 
mothers, both single and married and has this changed between the years 1973, 
and 2002?

Summary of Research Question One

Research question 1 aims to look if there is a difference between new purchased 
service expenditure patterns in 2002 for single and married-mother households in the 
United States as compared to purchased service expenditure patterns for single and 
marrwed mother households identifed in previous years. The summary of the results as is 
follows:

Food away From Home

- Expenditures have increased 26.6% overall since 1984.
- Both food and FAFH expenditure rose statistical significantly from 1988 to 1991. 
This increase corresponds in time to an increase in the number of earners per 
consumer unit.
- The difference between married-mother and single-parent households with respect 
to FAFH per person expenditure, blocking by year, are highly statistical 
significant, with model p-values < 0.001.
Married-mother household (groups 4) and single-parent household (group 5) are not statistically different, since the intervals overlap. All other groups, however, are statistically significantly different from these two and each other.

Proportion of food budget spent on FAFH for married-mother and single-parent household over time is highly statistical significant, with model p-values < 0.001.

Individual confidence intervals were calculated for each group mean. Married-mother (group 4) and single parent (group 5) are not statistically different, since the intervals overlap.

Married-mother household (group 1), spend a statistically significantly higher proportion of their food budget on FAFH than single-parent household, but statistically significantly less than more mature families with older children.

**Housekeeping Supplies and Services (HKSS)**

- Expenditures have increased 41.7% overall since 1984.

- The largest single-year change in HKSS expenditure was a 30.4% increase from 1987 to 1988.

- Expenditures rose statistic significantly for married and single parent by approximately 32% from 1988 to 1991. This increase corresponds in time to an increase in the number of earners per consumer unit, which went from 1.4 to 1.7 in 1988 and peaked at 1.8 from 1989 through 1991, before reaching a plateau at 1.7, where it remains through 2002.

- Married mother households with young children show the strongest trend, decreasing 24% from $727 in 1984 to $552 in 2002.
Child Care (ChC)

- White mother’s education is a very good predictor of the corresponding proportion of children under care whereas mother’s education is not a statistical significant predictor for other races. The same conclusion holds for income.
- Mother’s labor force appears to be statistical significant for all three races with high R-square for white race compared to other races.

Summary of Research Question Two

Research question 2 aims to look if there is any expenditure difference in those to whom the working mother outsourced in 2002 as compared to previous years – that is, in trends that were identified in past studies – as a result of the terror attack of September 11, 2001, the new technology of the Internet, and/or the increasing complexity in the labor force and marketplace. Summary of the result indicates there are no statistical significant changes in FAFH, HKSS, and ChC in 2002 as compared to the previous years – that is, in trends that were identified in the past study, as a result of the new technology of the internet, nor increasing complexity in the labor force and marketplace from 2000 to 2002 (before and after September 11, 2001 terror attack).

Summary of Research Question Three

Research question 3 aims to look into the factors that influence household expenditures on purchased services in working-married and single-parent households, as a result of the effect that marital status of mothers’ market work commitment may have on market purchased services expenditures. A summary of the results as is follows:
• A very clear distinction can be seen between the Single parent households (Group 5) and the married-parent households (Groups 1 through 4).

• Single-parent household (group 5) spent more money on FAFH, HKSS, and ChC than married-mother household (groups 1 to 4).

• Single-parent households are more likely to rent their residences than married households. They are also more likely to identify themselves as African-American.

• Other nontraditional married-mother households are also more likely to be African-American, relative to the traditional family structure. These two subgroups, single parent and married nontraditional, are also less likely to have achieved a college education.

• Single-parent households have on average less than half the income after tax (measured in real 2002$) compared to any of the other married-mother household groups. They receive more income from public sources, e.g. welfare, food stamps, unemployment, etc. than other groups.

• Single-parent household is also the only group where the average annual expenditure exceeds their income after tax. They spend less on FAFH by a factor ranging from 1.4 to 2.3, less by a factor of 1.7 to 2.1 on HKSS.

• Married-mother household groups 1 through 3 show a steady increase in both income and expenditure levels as the family matures. The increase in average FAFH and HKS expenditures is largest as the children age from younger than 6 years old to between 6 and 17 years old; the increase in income is largest as the children age from between 6 and 17 years old to over 18.
- For both, married and single-mother household, Annual Expenditure on FAFH has a high correlation with Income after Taxes ($\hat{\rho} = 0.974, p-value < 0.001$).

- For both, married and single-mother household, number of vehicles per household has a high correlation with number of Earners per household ($\hat{\rho} = 0.976, p-value < 0.001$)

- Relative to single-parent and married-mother’s employment status, mother’s education, and household Income. All were highly statistical significant, indicating that these 3 factors are highly influential in predicting the number of children enrolled in child care facilities (ChC) per category.

**Summary of Research Question Four**

Research question 4 aims to analyze the income elasticity of demand for purchased services of working mothers, both single and married, and has the following changed between the prior study by Haron (200) and this new study, between the years 1973-2002 indicate that FAFH in 1973 and HKSS in 1973, 1983, 1993 was luxury goods. FAFH and ChC became necessity in the year 2002 during the new study. For ChC during all time in prior to this study indicates that it is considered a necessity good.

**Implications of the Study**

The finding of this study can play useful future roles for private service providers to project future demand for market purchased services based on the new household expenditure behavior. Result may help the service providers for better use of resources, discover new business opportunities, better understanding and better planning. Results of
the study can educate the working mothers for the benefits of them and their families. Study may provide updated household expenditure analyses for policy makers for better decisions. For example, knowledge of food-away-from-home household expenditure behavior might be useful in designing nutritional education and assistance programs for specific groups of the population.

**Recommendation for Future Research**

1. Further study could be conducted to examine if there is any influence of food away from home expenditure behavior on overweight and obesity trends in the United States.

2. Further research could be conducted to consider working mother expenditures comparisons across countries like U.S.A., England, Australia and Canada.

3. Future research could be conducted on the level of guilt, anxiety and life satisfaction for mother with children.

4. Further study can be conducted to consider the quality of childcare, supplies and services.

5. Further research could be conducted looking to see if children lose (health and education or one of them) when mothers work?
Conclusions

This study found a tight link between the expenditure behavior of the working mothers of America and the independent variable (the 7Xs for FAFH and HKSS and the 3Xs for ChC) that was used to analyze the results. The study reveals that child care represents the largest share of both married and single mothers in both studies present and previous with statistical significant expenditure increase in the new study, but food away from home and housekeeping supplies and services were steady during both present study and previous study.

Expenditures have been consistently and positively associated with mother’s annual income, employment commitment, level of education, race, household unit structure and marital status. Purchased goods and services by one mother are derived from the work and time of someone else. Expenditure of a household is an income for another household or households. So, when this study provides results of household expenditure, at the same time it gives a broad picture about an income of another group of households and businesses, it may benefit both ends, suppliers and purchasers.
REFERENCES


Anelauskas, Valdas (1999). *Discovering America as it is*. Atlanta, GA: Clarity Press.


APPENDIX A

General Demographic Characteristics of the Five Subgroup Households

Consumer Unit Composition
Matrix Plot of Consumer Unit Composition

Group 1: Young Family
Group 2: Mature Family
Group 3: Adult Children Family
Group 4: Other Husband/Wife Family
Group 5: Single Parent Family
APPENDIX B

General Demographic Characteristics of the Five Subgroup Households

Consumer Unit Demographics
Matrix Plot of Consumer Unit Demographics

- Group 1: Young Family
- Group 2: Mature Family
- Group 3: Adult Children Family
- Group 4: Other Husband/Wife Family
- Group 5: Single Parent Family

Legend:
- ◆ Group 1: Young Family
- ● Group 2: Mature Family
- ■ Group 3: Adult Children Family
- ▲ Group 4: Other Husband/Wife Family
- ▶ Group 5: Single Parent Family
APPENDIX C

The Five Subgroup Households vs Expenditure

By Consumer Unit Composition

FAFH
Group 1: Young Family
Group 2: Mature Family
Group 3: Adult Children Family
Group 4: Other Husband/Wife Family
Group 5: Single Parent Family
APPENDIX D

The Five Subgroup Households vs Expenditure

By Consumer unit Demographic Variables

FAFH
Group 1: Young Family
- Group 2: Mature Family
- Group 3: Adult Children Family
- Group 4: Other Husband/Wife Family
- Group 5: Single Parent Family
APPENDIX E

The Five Subgroup households vs Expenditure

By Consumer unit Composition

HKSS
Group 1: Young Family
Group 2: Mature Family
Group 3: Adult Children Family
Group 4: Other Husband/Wife Family
Group 5: Single Parent Family
APPENDIX F

The Five Subgroup households vs Expenditure

By Consumer unit Demographic Variables

HKSS
HKSS vs. Consumer Unit Demographic Variables

- Group 1: Young Family
- Group 2: Mature Family
- Group 3: Adult Children Family
- Group 4: Other Husband/Wife Family
- Group 5: Single Parent Family
APPENDIX G

Institutional Review Board Approval
April 8, 2004

Mahmoud Mahmoud Khaial

Re: IRB Review 2004-013

Dear Mr. Khaial:

The Institutional Review Board has reviewed your proposal entitled “Outsourcing household tasks for 1973-2002 among married-mother and single-parent households”. Your request for an exemption has been granted.

If you have any questions, contact me at [redacted]

Sincerely,

[redacted]

Farideh Farazmand, Ph.D.
Institutional Review Board, Chair

Cc: Dissertation Chair, Dr. Dambowski