

CHO, SOO EUN, M.S. Clothing Gift Expenditures: The Influence of Gender, Ethnicity, and Age. (2007)

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The study's purpose was to understand better the role of clothing in gift giving, specifically to estimate the probabilities associated between gender, ethnicity, and age and CU (household) clothing and clothing gift expenditures, as well as to identify mean differences between CU clothing and clothing gift expenditures based on the gender, ethnicity, and age of CU heads. The study data were drawn from the 2001 Consumer Expenditure Survey (CEX) and probabilities were estimated using Bayesian statistical analysis. Analysis of variance (ANOVA) was used to test for mean expenditure differences. The findings indicated that male-headed CUs had a higher probability and higher mean expenditures relative to clothing and clothing gifts than female-headed CUs for the adult and infant clothing categories. African-American-headed CUs had the highest mean clothing expenditure for the adult and infant clothing categories, although Caucasian- and Hispanic-headed CUs had higher probabilities for purchasing clothing. CUs with heads 45~54 and 55~64 had the highest mean expenditures for adult clothing, while, CUs with heads 14~19 and 20~24 had the highest mean expenditures for infant clothing. A comparison of the study results and the literature suggests there may be differences between individual and CU expenditure behaviors relative to clothing and clothing gift giving.

CLOTHING GIFT EXPENDITURES: THE INFLUENCE  
OF GENDER, ETHNICITY, AND AGE

by

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To my parents for their love, patience, encouragement, and help during my graduate program—it would not have been possible without their financial and emotional support. Also to my sister, Wooyoun Cho, and my fiancé, Heesun Nam, for their boundless love and encouragement.

APPROVAL PAGE

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## TABLE OF CONTENTS

	Page
LIST OF TABLES.....	vii
LIST OF FIGURES.....	xi
CHAPTER	
I. INTRODUCTION.....	1
The Importance of Research on Gift Giving .....	1
A Background on Clothing Gift Giving.....	2
Study Research Questions.....	6
Study Research Objectives.....	7
Assumptions.....	7
Definition of Study Terms.....	7
Thesis Structure.....	9
II. REVIEW OF THE LITERATURE.....	10
A Brief Overview of Household Expenditures.....	10
Gift Giving Research.....	16
Gaps in the Literature.....	35
Research Questions and Objectives.....	36
III. METHODOLOGY.....	37
Introduction.....	37
Overview of the CEX.....	37
Methodological Approach.....	39
Data Analysis.....	50
Data Preparation.....	52
IV. RESULTS.....	54
Introduction to the Analysis Results.....	54
The Probability of CU Clothing Expenditures.....	55
The Probability of CU Clothing Gift Expenditures.....	57
The Conditional Probability of CU Clothing Gift Expenditures.....	61
ANOVA Test.....	74
V. SUMMARY & CONCLUSIONS.....	97
A Review of the Study Purpose.....	97
Discussion of Key Findings of the Study.....	99

Limitations of the Research.....	102
Future Research Recommendations.....	103
BIBLIOGRAPHY.....	105
APPENDIX A. 2001 CEX CODEBOOK: DATA FORMAT AND CODES RELEVANT TO THE STUDY.....	113
APPENDIX B. PROBABILITY OF CLOTHING EXPENDITURES FOR CUs WITH HEADS OF CERTAIN GENDERS, ETHNICITIES, AND AGES.....	135
APPENDIX C. CONDITIONAL PROBABILITY OF CLOTHING GIFT EXPENDITURES GIVEN THAT CLOTHING EXPENDITURES HAVE BEEN MADE BY CUs WITH HEADS OF CERTAIN GENDERS, ETHNICITIES, AND AGES.....	144
APPENDIX D. ANOVA TEST: SIGNIFICANT MEAN EXPENDITURE DIFFERENCES ON ADULT AND INFANT CLOTHING BY CUs WITH HEADS OF CERTAIN AGES BASED ON CLOTHING PURCHASE EVENT AND ITEM PURCHASED.....	153
APPENDIX E. ANOVA TEST: SIGNIFICANT MEAN EXPENDITURE DIFFERENCES ON ADULT AND INFANT CLOTHING GIFTS BY CUs WITH HEADS OF CERTAIN AGES BASED ON CLOTHING PURCHASE EVENT AND ITEM PURCHASED.....	162



## LIST OF TABLES

		Page
TABLE		
3.1	Purchase Events and Category Share for Adult Clothing Category Expenditures (2001CEX).....	42
3.2	Purchase Events and Category Share for Infants Clothing Category Expenditures (2001CEX).....	43
3.3	Purchase Event and Category Share for Gift Giving Expenditures on Relevant Adult Clothing Categories.....	44
3.4	Purchase Event and Category Share for Gift Giving Expenditures on Relevant Infants Clothing Categories.....	45
3.5	Clothing Purchase Event and Item Purchased for CUs with Heads of Certain Genders (Adult Clothing).....	46
3.6	Clothing Purchase Event and Item Purchased for CUs with Heads of Certain Genders (Infant Clothing).....	46
3.7	Clothing Purchase Event and Item Purchased for CUs with Heads of Certain Ethnicities (Adult Clothing).....	48
3.8	Clothing Purchase Event and Item Purchased for CUs with Heads of Certain Ethnicities (Infant Clothing).....	48
3.9	Clothing Purchase Event and Item Purchased for CUs with Heads of Certain Ages (Adult Clothing).....	49
3.10	Clothing Purchase Event and Item Purchased for CUs with Heads of Certain Ages (Infant Clothing).....	50
4.1	Probability of CU Gift and Non-Gift Clothing Expenditures.....	55
4.2	Probability of CU Clothing Expenditures for CUs with Heads of Certain Genders.....	56
4.3	Probability of CU Clothing Expenditures for CUs with Heads of Certain Ethnicities....	57
4.4	Probability of CU Clothing Expenditures for CUs with Heads of Certain Ages.....	58
4.5	Probability of CU Clothing Gift Expenditures for CUs with Heads of Certain Genders.....	59

4.6	Probability of CU Clothing Gift Expenditures for CUs with Heads of Certain Ethnicities.....	60
4.7	Probability of CU Clothing Gift Expenditures by CUs with Heads of Certain Ages.....	62
4.8	The Conditional Probability of Clothing Gift Expenditures by CUs with Heads of Certain Genders Given the Purchase of a Clothing Gift.....	65
4.9	The Conditional Probability of Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities Given the Purchase of a Clothing Gift.....	65
4.10	The Conditional Probability of Clothing Gift Expenditures by CUs with Heads of Certain Ages Given the Purchase of a Clothing Gift.....	66
4.11	The Conditional Probability of Clothing Gift Expenditures by CUs with Heads of Certain Genders Given a Clothing Purchase .....	67
4.12	The Conditional Probability of Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities Given a Clothing Purchase.....	69
4.13	The Conditional Probability of Clothing Gift Expenditures by CUs with Heads of Certain Ages Given a Clothing Purchase.....	70
4.14	The Conditional Probability of Clothing Gift Expenditures Given the Joint Occurrence of CUs with Heads of Certain Genders and Ethnicities and Given a Clothing Purchase.....	71
4.15	The Conditional Probability of Clothing Gift Expenditures Given the Joint Occurrence of CUs with Heads of Certain Genders and Ages and Given a Clothing Purchase.....	73
4.16	The Conditional Probability of Clothing Gift Expenditures Given the Joint Occurrence of CUs with Heads of Certain Ethnicities and Ages and Given a Clothing Purchase. ..	75
4.17	ANOVA Test: Mean Clothing Expenditures for Gifts/Non-Gifts Based on Clothing Purchase Event.....	76
4.18	ANOVA Test: Mean Clothing Expenditures for Gifts/Non-Gifts Based on Clothing Item Purchased.....	77
4.19	ANOVA Test: Mean Clothing Expenditures by CUs with Heads of Certain Genders (Purchase Event).....	77
4.20	ANOVA Test: Mean Clothing Expenditures by CUs with Heads of Certain Genders (Item Purchased).....	78
4.21	ANOVA Test: Mean Clothing Expenditures by CUs with Heads of Certain Ethnicities (Purchase Event).....	79

4.22	ANOVA Test: Mean Clothing Expenditures by CUs with Heads of Certain Ethnicities (Item Purchased).....	80
4.23	ANOVA Test: Significant Mean Differences on Clothing Expenditures by CUs with Heads of Certain Ethnicities (Purchase Event).....	81
4.24	ANOVA Test: Significant Mean Differences on Clothing Expenditures by CUs with Heads of Certain Ethnicities (Item Purchased).....	82
4.25	ANOVA Test: Mean Clothing Expenditures by CUs with Heads of Certain Ages (Purchase Event).....	83
4.26	ANOVA Test: Mean Clothing Expenditures by CUs with Heads of Certain Ages (Item Purchased).....	84
4.27	ANOVA Test: Significant Mean Differences on Clothing Expenditures by CUs with Heads of Certain Ages (Purchase Event).....	85
4.28	ANOVA Test: Significant Mean Differences on Clothing Expenditures by CUs with Heads of Certain Ages (Item Purchase).....	86
4.29	ANOVA Test: Mean Clothing Gift Expenditures by CUs with Heads of Certain Genders (Purchase Event).....	87
4.30	ANOVA Test: Mean Clothing Gift Expenditures by CUs with Heads of Certain Genders (Item Purchased).....	88
4.31	ANOVA Test: Mean Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities (Purchase Event).....	89
4.32	ANOVA Test: Mean Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities (Item Purchased).....	90
4.33	ANOVA Test: Significant Mean Differences on Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities (Purchase Event).....	91
4.34	ANOVA Test: Significant Mean Differences on Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities (Item Purchased).....	92
4.35	ANOVA Test: Mean Clothing Gift Expenditures by CUs with Heads of Certain Ages (Purchase Event).....	93
4.36	ANOVA Test: Mean Clothing Gift Expenditures by CUs with Heads of Certain Ages (Item Purchased).....	94
4.37	ANOVA Test: Significant Mean Differences on Clothing Gift Expenditures by CUs with Heads of Certain Ages (Purchase Event).....	95

4.38	ANOVA Test: Significant Mean Differences on Clothing Gift Expenditures by CUs with Heads of Certain Ages (Item Purchased).....	95
D.1	ANOVA Test: Significant Mean Differences on Adult Clothing Expenditures by CUs with Heads of Certain Ages (Purchase Event).....	154
D.2	ANOVA Test: Significant Mean Differences on Infant Clothing Expenditures by CUs with Heads of Certain Ages (Purchase Event).....	156
D.3	ANOVA Test: Significant Mean Differences on Adult Clothing Expenditures by CUs with Heads of Certain Ages (Item Purchased).....	158
D.4	ANOVA Test: Significant Mean Differences on Infant Clothing Expenditures by CUs with Heads of Certain Ages (Item Purchased).....	160
E.1	ANOVA Test: Significant Mean Differences on Adult Clothing Gift Expenditures by CUs with Heads of Certain Ages (Purchase Event).....	163
E.2	ANOVA Test: Significant Mean Differences on Infant Clothing Gift Expenditures by CUs with Heads of Certain Ages (Purchase Event).....	165
E.3	ANOVA Test: Significant Mean Differences on Adult Clothing Gift Expenditures by CUs with Heads of Certain Ages (Item Purchased).....	167
E.4	ANOVA Test: Significant Mean Differences on Infant Clothing Gift Expenditures by CUs with Heads of Certain Ages (Item Purchased).....	169

## LIST OF FIGURES

FIGURE	Page
2.1 Average Annual Household Expenditures: Apparel Categories 1992-2001.....	14
2.2 Average Annual Household Expenditure for Apparel Share: Major Categories 1992-2001.....	15
2.3 The Processing of Gift-Giving.....	25
B.1 Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (14~19).....	136
B.2 Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (20~24).....	137
B.3 Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (25~34).....	138
B.4 Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (35~44).....	139
B.5 Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (45~54).....	140
B.6 Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (55~64).....	141
B.7 Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (65~74).....	142
B.8 Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (75+).....	143
C.1 Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (14~19).....	145
C.2 Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (20~24).....	146
C.3 Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (25~34).....	147

C.4	Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (35~44).....	148
C.5	Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (45~54).....	149
C.6	Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (55~64).....	150
C.7	Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (65~74).....	151
C.8	Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (75+).....	152

## CHAPTER I

### INTRODUCTION

Chapter I presents seven major sections: (1) The Importance of Research on Gift Giving; (2) A Background on Clothing Gift Giving; (3) Study Research Questions; (4) Study Research Objectives; (5) Assumptions; (6) Definition of Study Terms; and (7) Thesis Structure.

#### **The Importance of Research on Gift Giving**

Gift giving is a widespread and embedded activity in human society in which something is given to give pleasure, to obtain pleasure, or to meet social expectations, thereby expressing and maintaining social ties (Belk, 1976, 1979; Lowes, Turner, & Wills, 1968; Mauss, 1954). In carrying out social exchange, however, gifts also entail economic exchange. According to Garner and Wagner(1991), in the United States alone \$78 billion on average is spent annually for extra-household gift giving, i.e., gifts for those outside the household. When charitable contributions are included, gift giving has been estimated to account for an additional two percent of the household budget (Lamale & Clorety, 1959). Belshaw (1965) estimated that conservatively 10 percent of retail sales in North America are for gift giving, contributing significantly to increasing sales. More recently, *Household Spending* (2004) estimated that over \$110 billion are spent each year in the United States for gifts. Clearly, gift giving represents an important topic both socially and economically, and it has been estimated that an average of 2.5 percent (\$1,007) of household expenditures were for gifts in 2003 (*American Generations*, 2005). Of that 2.5 percent (\$1,007), 22.34 percent (\$225) of those gift expenditures were for clothing, suggesting that 20 to 25% of gifts on average is clothing gifts (*Household Spending*, 2006).

A gap in the literature exists, however, because little research has been done on the probabilities associated with households purchasing specific clothing items for gift giving. Furthermore, this issue has not been addressed for the increasingly diverse and ethnically-driven consumers of America. To address this gap, it is important to provide a background on clothing expenditures in general and clothing expenditures for gift giving specifically.

### **A Background on Clothing Gift Giving**

#### **Clothing Expenditures**

Food, clothing, and shelter—three of the most basic human needs—have been tracked as household expenditures in the United States since the late 1800s (Abdel-Ghany & Schwenk, 1993). Information on clothing expenditures has been more limited than the other expenditure areas in the past, however, for a number of reasons, including a more limited number of studies on clothing expenditures being conducted, the interest in clothing expenditures occurring later than other expenditure categories, a focus on aggregate data, and, unlike many other expenditure categories, relatively little interest in the effects of demographic variables. Since 1945, the interest in clothing expenditure studies has grown and a number of studies have focused specifically on this area (Dardis, Derrick, & Lehfled, 1981). Some studies have investigated how the household life cycle affects clothing consumption patterns (Wagner & Hanna, 1983; Wilkes, 1995).

A complete demand system approach was used by Fan, Lee and Hanna (1996) to analyze household expenditures on clothing, and several researchers exploring clothing expenditures have utilized socio-demographic factors as independent variables and average annual household expenditures for clothing as a dependent variable. Interestingly, average annual household expenditures on clothing and services have demonstrated a slightly different pattern from shelter and food expenditures between 1984 and 2001. According to *Household Spending* (2005),



spending on clothing increased continuously from \$1,319 in 1984 to \$1,735 in 1991. However, clothing expenditures fluctuated between 1992 and 2001. Unlike food and housing, average clothing and services expenditures per household did not increase substantially, and the proportion of clothing and services expenditures to total expenditures has decreased significantly from 6 percent in 1984 to 4.41 percent in 2001 (*Household Spending*, 2004). According to Dardis and colleagues (1981), “the impact of increased discretionary expenditures is uncertain because clothing may be regarded as both a necessity and a luxury.”

The Consumer Expenditure Survey (CEX) provides the major and most reliable tracking of household expenditures in the United States (Attanasio, 1994; Dynan, Skinner, & Zeldes, 2004). The CEX categorizes clothing and service items into six groups: (1) women’s clothing, 16 and over; (2) men’s clothing, 16 and over; (3) girls, clothing, 2 to 15; (4) boys’ clothing, 2 to 15; (5) children’s clothing, under 2; and (6) footwear. According to *Household Spending* (2005), the women’s clothing category, comprised of individuals and 16 and older, demonstrates the highest expenditures per household. In 1984, each household spent \$444 on average for women’s clothing. This increased to \$607 in 2000 and decreased to \$562 in 2001. Footwear expenditures showed the largest increase among clothing items from \$185 in 1984 to \$302 in 2001. Clothing expenditures for men, girls, boys, and children under two years of age have increased at a slower rate than women’s clothing and footwear expenditures.

Based on CEX data, the portion of spending on the clothing category decreased 18 percent between 1990 and 2001, despite the fact that average annual household expenditures increased 6.0 percent on average during each of those years. Totally, the average annual household expenditures for the United States from 1990 to 2001 increased from \$37,273 to \$39,518 (*Household Spending*, 2004). Consequently, based on the *Household Spending* (2004) data, had spending not decreased 18 percent each household theoretically could have spent

\$7113.24 ( $= .18 \times \$39,518$ ) more on clothing in 2001. This means that an additional \$785,294,582,760, ( $= \$7113.24 \times 110,399,000$  US households) would have been spent on clothing in the United States in 2001.

In 1989, Winakor noted a decline in US consumers' clothing budgets. She presented and examined several possibilities for this downturn, identifying three major issues for researchers to address: 1) the necessity of cross-sectional data that provides more complete data at the household level, 2) the need to note changes in clothing quality and the price index limitations, and 3) how to address clothing expenditures and their effects on other commodities. Extant studies have tended to overlook these issues and researchers have based clothing expenditure studies largely on data from cross-sectional household surveys or total time-series data from national income accounts.

A major review of research on clothing expenditures was conducted by Dardis and colleagues (1981). The main objective of their research was to examine the determinants of clothing expenditures in the United States. They analyzed the relationship between household characteristics and expenditure shares for clothing based on the US Bureau of Labor Statistics 1972~73 CEX. According to their study, income had a significantly positive impact on expenditures of clothing. Also, expenditures on clothing declined during the later stages of the family life cycle, and both education and occupation had a positive relationship with clothing expenditures. Interestingly, Dardis and colleagues (1981) found that households headed by Whites spent 20 to 30 percent less on clothing than households headed by Blacks.

Although expenditure studies on clothing have differed relative to their main objectives at times, most have sought solutions and understanding of social and economic problems. Furthermore, because of a lack of survey data, most early studies did not include price effects but did provide detailed family income, expenditures, and characteristics information.

## **Clothing Expenditures for Gift Giving**

Over the past 80 years or more, a significantly large number of researchers have studied gift giving behavior, although interest in this research topic has increased substantially since the 1970s. The focus of this research has varied over time, including economic impact, gender roles, the impact of age, and culture. The majority of gift-giving studies, however, has focused on Christmas which is the most economically impactful holiday event in the United States (Cleveland Mark, Babin Barry J., Laroche Michel, Ward Philippa & Bergeron Jasmin, 2003; Beatty & Smith, 1985; Belk, 1979; Brunel, Otnes, & Ruth, 1999; Buttle, 1992; Caplow, 1982; Jolibert & Fernandez-Moreno, 1983; Fisher & Arnold, 1990, 1994; Lowes et, al, 1968; Otnes, Lowrey, & Kim, 1993; Roberts & Wortzel, 1982; Schaninger & Allen, 1981; Schudson, 1986; Sherry, 1983; Sherry & McGrath, 1989; Sternthal, 1986; Zeithaml, 1985).

As to who spends the most for gift giving, it varies. For gift-giving of infants' clothing, young married couples appear to spend the most, while elders who have grandchildren spend the second largest amount of their household income on infant clothing gifts (*Best Customers*, 2005). Married couples consistently spend more than singles, and people in the Midwest spend the most on infants' clothing as gifts (*Best Customers*, 2005). As income goes up, expenditures for gifts of women's and girls' clothing, as well as men's and boys' clothing, increase (*Best Customers*, 2005). Also, older people, ages 55 to 64, spend the most on gift giving in both adult and infant clothing categories (*Best Customers*, 2005). Households spend more on clothing gifts as education levels increase (*Best Customers*, 2005). For women's and girls' clothing gifts, people in the Northeast of the United States spend more than any other geographic area (*Best Customers*, 2005). On the other hand, people in the Midwest have been found to spend more on gifts for men's and boys' clothing than other geographic areas in the United States (*Best Customers*, 2005).

### **Study Research Questions**

Building on previous research in the clothing area, this study first asks what the probability is that households (defined in this study as CUs, that is, consumer units—see Definition of Terms at the end of Chapter I) headed by persons of different ethnicities, ages, and genders will purchase either adult or infant clothing as gifts. It does so by calculating joint and conditional probabilities between key socio-demographic variables—ethnicity (European, Hispanic, African American, Asian/Pacific Islander, and All Others), age (15-19, 20-24, 25-34, 35-44, 45-54, 55-64, 65-74, and 75 and above), and gender (male and female)—and CU expenditures for adult (ages 14 and over) clothing (calculated using fourteen adult clothing categories: coats, jackets, and furs; sport coats and tailored jackets; suits; vests; sweaters and sweater sets; pants, slacks, and jeans; shorts and short sets; dresses; skirts; shirts, blouses and tops; undergarments; nightwear and loungewear; accessories; and active sportswear) and CU expenditures for infant (ages under two) clothing (calculated using six clothing categories: infant coats, jackets, or snowsuits; infant dresses and other outerwear; infant underwear and diapers, including disposable; infant sleeping garments; layettes; and infant accessories). Second, the study asks what mean differences exist between clothing and clothing gift expenditures based on the specific CU making those purchases.

Clothing for ages between three and 13 was excluded from this study, because, it was felt that clothing expenditures for this age group are more focused on intra-household uses rather than gifts. Where many households would purchase infant clothing for celebratory reasons, children three through 13 often prefer to be given non-clothing gifts, such as Nintendo, GameBoy, PlayStation, and other electronic products. Also, gift cards have become very popular for this age group. Furthermore, clothing gifts for infants can be purchased knowing that the baby will grow into whatever size is purchased, and clothing gifts for adults have the advantage of the adult not changing sizes in the short term.

## **Study Research Objectives**

The research objectives of this study are:

1. To test the study research questions using CU expenditure data from the 2001 CEX (interview survey and detailed expenditure files);
2. To use a Bayesian statistical approach to estimate probabilities;
3. To estimate probabilities for CU purchasing of adult clothing gifts and infant clothing gifts given different genders, ethnicities, and ages of the CU heads; and
4. To determine mean differences in CU expenditures on clothing gifts using ANOVA.

## **Assumptions**

This study makes the following assumptions:

1. The CEX is an appropriate source of data for a study of this type;
2. The CEX interview survey is more appropriate for this purpose than the CEX diary survey, because 90-95 percent of all CU expenditures are collected in the interview survey;
3. Because infant clothing expenditures are not tracked by the CEX as gift/non-gift (adult clothing expenditures are), infant clothing items purchased for those outside of the CU are treated as gifts and those purchased for those inside the CU are treated as non-gifts; and
4. A CU's decisions about expenditures on clothing for gift-giving are independent of its decisions about expenditures on other commodities.

## **Definition of Terms**

### ***CEX***

The commonly used abbreviation for the Consumer Expenditure Survey, a US government survey that collects information annually from the nation's households and families on their buying habits (expenditures), income, and household characteristics.

<b><i>Clothing</i></b>	Most frequently used to describe enclosures that cover the body and generally omits body modifications such as tattooing and piercing (Roach-Higgins, Eicher & Eilen, 1992)
<b><i>Consumer Unit (CU)</i></b>	All members of a particular household who are related by blood, marriage, adoption, or other legal arrangement. A person living alone or sharing a household with others or living as a roomer in a private home or lodging house or in permanent living quarters in a hotel or motel, but who is financially independent. Two or more persons living together who use their incomes to make joint expenditure decisions (Rogers, 1997)
<b><i>Dress</i></b>	An assemblage of modifications of the body and/or supplements to the body (Roach-Higgins, Eicher & Eilen, In press) “A gender-neutral collective noun to designate either a social group’s body modifications and supplements (e.g., American dress, military dress, occupational dress, human dress) or those of an individual (q.g., that boy’s dress, that girl’s dress)” (Roach-Higgins, Eicher & Eilen, 1992)
<b><i>Education of Reference Person</i></b>	The highest grade of formal education completed by a reference person. If at time of the interview the reference person is currently enrolled in the educational system, the level that he or she is presently in will be recorded. Anyone not reporting educational information will be classified as having no school or not reported (US Department of Labor, Bureau of Labor Statistics, 2002)
<b><i>Expenditure</i></b>	The cost of a transaction, including sales and excise taxes of goods, services, and gifts acquired during the interview or record keeping period, even if the payment in full has not been completed on the purchase date. Purchases or portions of purchases used for business and periodic installment payments or services already acquired should be excluded (US Department of Labor, Bureau of Labor Statistics, 2002).
<b><i>Ethnicity</i></b>	Membership in a particular group, especially a national group by heritage or culture but residing outside its national boundaries.
<b><i>Gift Giving</i></b>	A widespread and embedded activity in human society in which something is given to give pleasure, to obtain pleasure, or to meet social expectations, thereby expressing and maintaining social ties (Belk, 1976, 1979; Lowes et al., 1968; Mauss, 1954) (generally, charity is not classified as a part of social gift exchange and consumer behavior).
<b><i>Interview Survey</i></b>	That section of the CEX that collects and compiles information on major expenses, household specifications, and income. The expenditures included in the survey are larger purchases and regular

household expenses, such as real estate, automobiles, rent, insurance, and utilities. Items that are not included are household supplies, nonprescription drugs, and other personal items. Approximately 90-95% of household expenditures are noted in the interview survey, including monies for food (US Department of Labor, Bureau of Labor Statistics, 2002).

***Race*** A group of people united or classified together on the basis of common history, nationality, or geographic distribution.

***Secondary Data*** Information that already exists somewhere, having been collected for another purpose. For example, if a government department has conducted a survey of family food expenditures, then a food manufacturer might use this data in the organization's evaluations of the total potential market for a new product. Secondary data sources include census reports, trade publications, and subscription services.

***Total Expenditures*** The sum of all transaction costs for given time periods, including taxes of services and goods acquired during the interview period, plus estimates on expenditures for gifts, contributions, and payments for pensions and personal insurance (US Department of Labor, Bureau of Labor Statistics, 2002).

### **Thesis Structure**

The details of this research are presented in four remaining chapters: Chapter II, Literature Review; Chapter III, Methodology; Chapter IV, Results; and Chapter V, Summary and Conclusion. Chapter II presents the findings from previous household expenditure research based on CEX data. Chapter III presents the methodological handling of the data set and provides the details of the analysis procedures. Chapter IV presents the statistical results. Chapter V summarizes and discusses the objectives of the research, the study findings, the study limitations, and future research recommendations.

## CHAPTER II

### REVIEW OF THE LITERATURE

Chapter II presents a review of the pertinent research that has investigated gift giving. It contains four major sections: (1) A Brief Overview of Household Expenditures; (2) Gift Giving Research; (3) Gaps in the Literature; and (4) Research Questions and Objectives.

#### **A Brief Overview of Household Expenditures**

##### **A Definition of Expenditures**

This study is interested in exploring gift giving expenditures on clothing by US households or consumer units (CUs). Consequently, expenditures are defined using the US government definition. Expenditures are defined as the cost of a transaction, including sales and excise taxes of goods, services, and gifts acquired during the interview or record keeping period, even if the payment in full has not been completed on the purchase date—with purchases or portions of purchases used for business and periodic installment payments or services already acquired excluded (US Department of Labor, Bureau of Labor Statistics, 2002). Total expenditures are defined as the sum of all transaction costs for given time periods, including taxes of services and goods acquired during the interview period, plus estimates on expenditures for gifts, contributions, and payments for pensions and personal insurance (US Department of Labor, Bureau of Labor Statistics, 2002). Household expenditures are those expenditures made by the household or CU.

##### **General Household Expenditure Research**

According to *Household Spending* (2004), income growth between 1990 and 2001 was 13 percent, while average household spending grew only 6 percent during those years after adjusting for inflation. One of the reasons for this is demographic change. During this period of time,



population growth was more rapid than previous years, and the baby-boomer generations reached their peak earning age which affected primary economic growth. Understandings of this nature, i.e., the state of household expenditures and their changes, have been of major economic importance to the government, economists, and researchers over the course of US history.

According to Abdel-Ghany and Schwenk (1993), studies related to empirical household budgets have been conducted since the 1800s. Zimmerman and Frampton (1935) noted that the founder of modern empirical household budgetary analysis was Frederick Le Play (1806-1882). Le Play's work pointed out the functional relationship between household income and expenditures. Ernest Engel (1821-1896), one of Le Play's students, developed a famous study exploring the relationship between household income and the monies dedicated to food. Engel showed that as the consumer's income level changed his/her service and goods consumption level also changed. The Engel curve shows this graphically. Normal goods, any goods for which demand increases when income increases, have a positive slope which means that the consumption of these goods increases as income increases. However, the demand for inferior goods, ones for which demand decreases when income rises, have a negative slope which means better goods are attainable and will replace the need for inferior goods (Wikipedia, The Free Encyclopedia). Within most of the Engel studies, it was assumed that apparel expenses were not considered by the consumer in the decision making process of commodity expenditures. According to Zimmerman and Frampton (1935), in relationship to Engel's survey, as overall household income increased the percentage of money spent on food decreased, the percentage of income spent on housing, utilities, and clothing stayed the same, and sundries increased.

According to Abdel-Ghany and Schwenk (1993), in 1875 Carroll Wright conducted the most significant American household expenditure survey up to that time. This survey included detailed information on family income, expenditures, and characteristics. Even though household

expenditure studies became more organized, increased in quantity, and improved in quality by the 1870s, it was not until the 1930s that income was analyzed in a systematic way based on economic principles (Abdel-Ghany & Schwenk, 1993). Allen and Bowley (1935) revived Engel's work and showed the basic monies spent were directly related to total household expenses. Crocket and Friend (1960) examined relationships between income and expenditure categories using data from the US Bureau of Labor Statistics' 1950 Consumer Expenditure Survey (CEX). They concluded that three linear segments using three income levels was the best way to present a complete Engel curve that relates expenditures on a given commodity to total household expenditures. According to Prais and Houthakker (1971), the rate of increase of expenditure on luxuries is greater than the rate of increase of income, but that this was not representative of all household expenditures.

### **Clothing Expenditure Research**

In general, clothing expenditure studies have been relatively scarce, were late to be examined relative to other expenditure categories, have been primarily investigated in the aggregate, and, unlike many other expenditure categories, have often not accounted for the effects of demographic variables. For example, according to Abdel-Ghany and Schwenk (1993), the Carroll Wright study (1985), one of the most significant early American household expenditure surveys, included detailed information on family income, expenditures, and characteristics, but did not include price effects on clothing. According to Fan, Lee, and Hanna (1996), most time-series studies have focused on the estimation of clothing consumption as a single consumption category. Houthakker and Taylor (1970) and Blanciforti, Green, and King (1986) conducted a comprehensive demand analysis of different categories of consumption goods. However, these studies did not explore the effects of demographic variables on clothing categories and shoes.

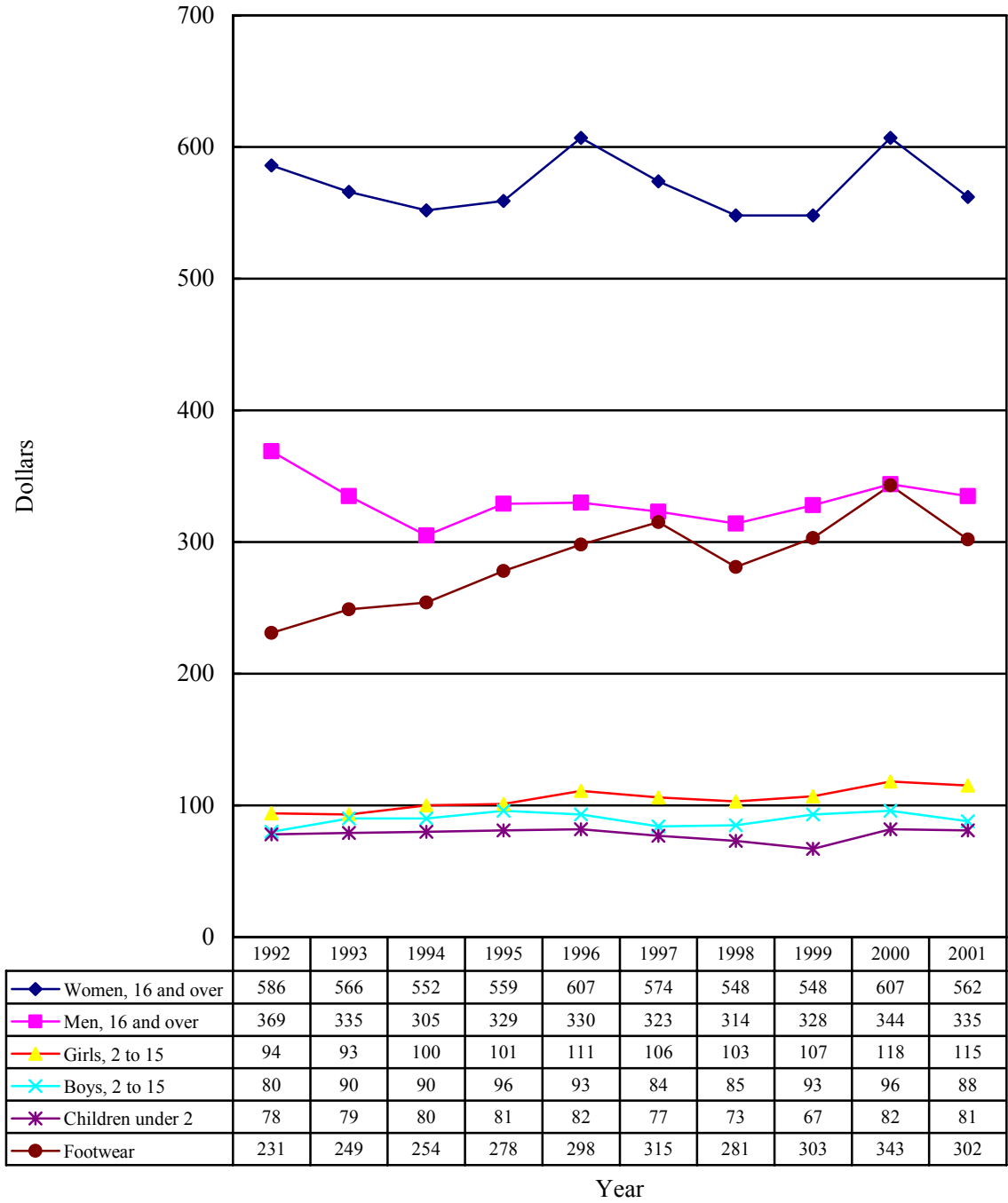
Recent research has been more sensitive to the context of clothing expenditures. Fan, Lee, and Hanna (1996) characterized a complete set of cross sectional and price index data using time-series analysis. The other part analyzed apparel expenditures using a complete demand system, taking into consideration the existence of various household decisions. Kim (2003) focused his research on analyzing US aggregate demand by median age and race in a time-series framework, using the almost ideal demand system developed to analyze US consumers' budget allocation patterns. That ideal demand system gives "an arbitrary first-order approximation to any demand system; satisfied the axioms of choice exactly; aggregates perfectly over consumers without invoking parallel linear Engel curves; has a functional form which is consistent with known household-budget data; simple to estimate, largely avoiding the need for non-linear estimation; can be used to test the restrictions of homogeneity and symmetry through linear restrictions on fixed parameters" (Deaton & Muellbauer, 1980, p.312). Kim (2003) discovered an increase in the US aggregate non-durable budget for men's and boy's clothing and footwear as the median age of the population increases. However, the same relationship was not significant for women's and children's clothing. Additionally, Kim noted that Whites allocate less of their expenditure budgets to clothing and shoes than non-Whites.

The Abdel-Ghany and Schwenk (1993) study showed the relationship between expenditure on apparel and permanent income and concluded that with an increase of one dollar in the consumer's permanent income only three cents of that dollar were spent on clothing.

Several publications track clothing expenditures on a yearly basis based on CEX data, including *Best Customers* and *Household Spending*. According to *Best Customers* (2005), a 25 percent decrease in average annual spending for clothing occurred between 1990 and 2002, that is, from more than \$2,200 in 1990 to \$1,749 in 2002 after adjusting for inflation. During the period between 1997 and 2002, the pattern of clothing expenditures changed very quickly due to cheaper

Figure 2.1

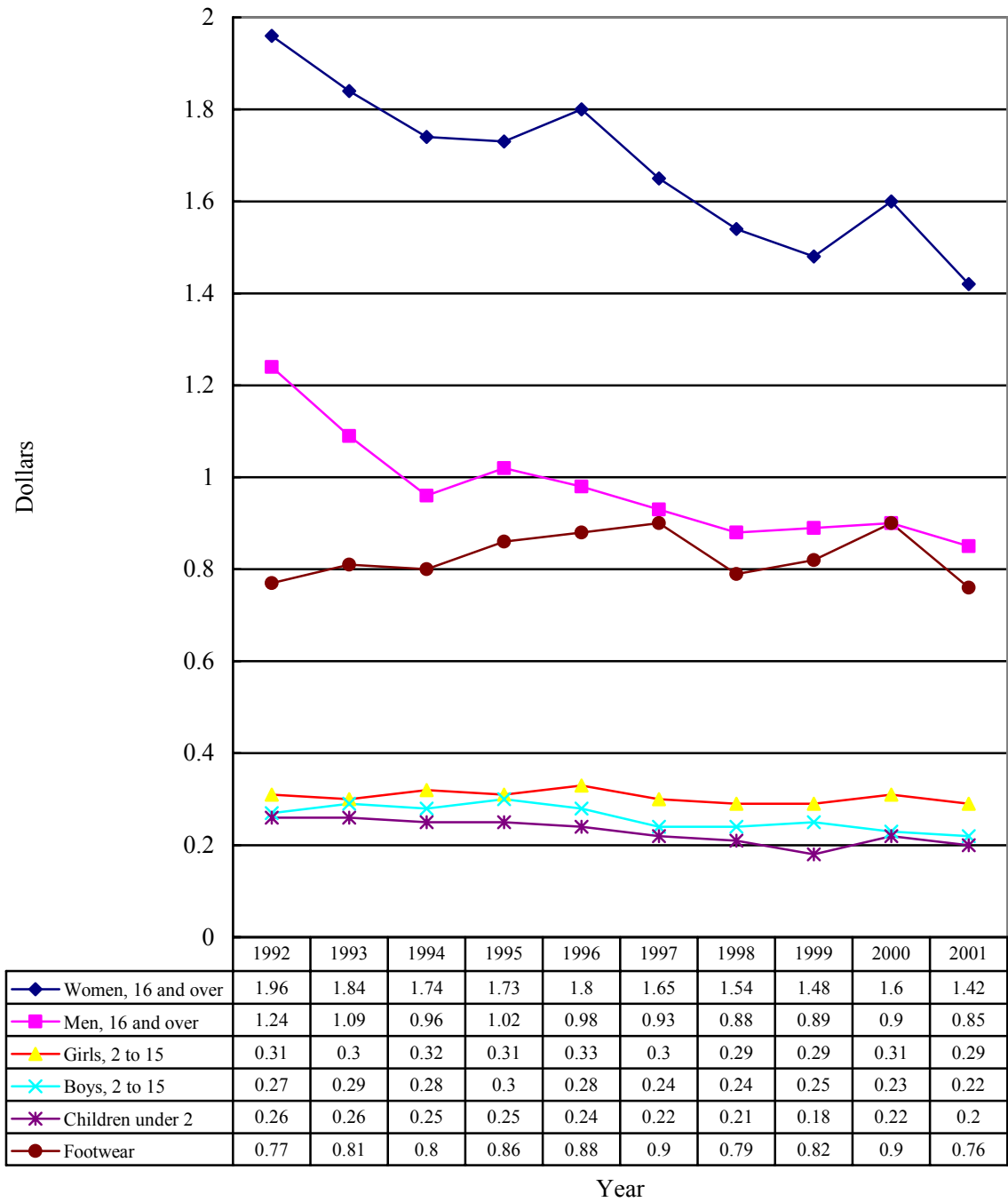
Average Annual Household Expenditures: Apparel Categories 1992-2001



Note: Calculated using the 1992-2001 CEX Survey.

Figure 2.2

Average Annual Household Expenditure for Apparel Share: Major Categories 1992-2001.



Note: Calculated using the 2001 CEX.

Total Household Expenditures=100%

imports that allowed people to buy more for less and the shift toward more casual dress in the workplace and at social functions. Among the 10 categories related to clothing tracked by *Best Customers* (2005)—women’s clothing, men’s clothing, girls’ clothing, boy’s clothing, infants’ clothing, jewelry, watches, shoes, dry cleaning, watches, and coin-operated laundry—the women’s clothing category accounted for the largest share of clothing expenditures, 34 percent, compared to a 12% share for men’s clothing (2002 data).

### **Gift Giving Research**

#### **Definition of Gift Giving**

Over the past 80 years or more, a significantly large number of researchers have studied gift giving behavior, although interest in this research topic has increased substantially since the 1970s. According to Cohn and Schiffman (1996), gift giving may be defined as the process of gift exchange between givers and recipients. Belk (1979) refines this concept by including that a gift is defined as a good or service given to recipients which may or may not be voluntarily provided. In this study, gift giving is defined as a widespread and embedded activity in human society in which something is given to give pleasure, to obtain pleasure, or to meet social expectations, thereby expressing and maintaining social ties (Belk, 1976, 1979; Lowes et al., 1968; Mauss, 1954). It should be noted that charity is not included as a part of the gift-giving definition for this study, because it is generally not classified as a part of social gift exchange and consumer behavior. Gift giving research has looked at both one-way gift giving, as well as two-way gift exchange, i.e., giving something to a recipient in return for something received within the relationship (Belk and Coon, 1993). Gift giving and the concept of exchange, or reciprocity, have historically been embedded in social structures around the world and, not surprisingly, have been viewed from a variety of perspectives, including economic, socio-economic, sociological, psychological, and anthropological.

## **The Economic Perspective on Gift Giving**

Due to the significant amounts of money spent on gift giving, a key perspective has been the economic perspective. According to Garner and Wagner (1991), at least \$78 billion are spent on average annually for extra-household gift giving. According to *Household Spending* (2005, p.715), an expenditure is defined as “the transaction cost including excise and sales taxes of goods and services,” including purchases of gifts but excluding purchases directly for business purposes and periodic credit or installment payments on goods and services. Gift giving is often categorized into two areas: extra-household expenditures for gifts and intra-household expenditures for gifts. Extra-household gifts are expenditures used to buy gifts for others who are not household members, while intra-household gift expenditures are the monies used to buy gifts for household members. When charitable contributions are included gift giving is estimated to account for an additional two percent of household budgets (Lamale & Clorety, 1959).

According to another source, *Household Spending* (2003), over \$110 billion are spent each year in the United States for gifts. Davis (1972) found that people spend more than four percent of their household budget on gifts in the United Kingdom. Belk (1979) noted that at least one third of the gifts purchased by a household are for non-family members (extra-household). Belshaw (1965) estimated that conservatively 10 percent of retail sales in North America are for gift giving. Shama and Thompson (1989) also suggest that gift giving contributes to the economy by increasing sales. Therefore, studies of gift giving from an economics perspective represent an important stream of research.

Some researchers such as Burling (1962) and Cancian (1966) have focused on the economic perspective of gift giving. According to Burling (1962), the meaning of ‘economics’ is “the study of the material means to man’s existence; the study of the allocation of scarce means to alternative ends.” Similar to this idea, Burling (1962) and Cancian (1966) explained that people

want to gain maximum benefit from selling and buying exchanges. Buyers want to buy products at the cheapest price, while sellers want to sell products at the highest price. An economic gift giving perspective suggests that gift giving operates in the same manner as economic exchange. Gift receivers may have different expectations about gifts based on their relationships with givers. Givers and receivers often feel the value of the gift should be equal to maintain their relationship. As in economics, people want to maximize the benefits received from gift exchanges. Supporting Burling (1962) and Cancian (1966) found that people try to select and exchange gifts that reflect the value placed on the relationship.

Ekeh (1974) mentioned that many people view gift giving in their social lives as a symbol of their economic worth. Belk and Coon (1993), Thibaut and Kelly (1959), and Gouldner (1960), using an economic exchange model, made the following assumptions: (1) gift giving is a social behavior that satisfies a person's needs or goals as an economic being; and (2) gift giving requires balanced reciprocity by returning the gift-giving gesture in order to keep healthy relationships with givers. As Sahlins (1972) mentioned, this returning of gifts must be done as soon as possible.

Research shows that if income increases, extra-household gift giving increases, while, when income is decreased, people reduce extra-household gift expenditures (Douglas & Isherwood, 1979). Furthermore, the proportional increase of gift giving is greater than the proportional increase in income because of the elasticity of extra-household gifts (Garner & Wagner, 1991). This reflects the economic impact of Becker's theory of social interaction.

### **The Socio-Economic Perspective on Gift Giving**

Gift giving creates many social interdependencies, and these are linked to key variables associated with the resources of givers and recipients. To give a gift to someone is to express how givers are relevant to gift recipients. By creating a network of contacts, social relationships are continually developed. Gift giving, with its expectation of reciprocity creates a kind of social



contract. In most socio-economic research on gift giving, family size and life cycle, education, ethnicity, gender, income, and other demographic variables have been analyzed to see how these variables impact gift expenditures (Garner & Wagner, 1991). The probability of gift giving and the value of gift expenditures may differ relative to each variable and these variables connect the economics of gift giving with social contexts.

### ***Family***

The amount of money spent on gift giving appears to be negatively correlated with family size (Belk, 1975; Garner & Wagner, 1991). In other words, in large families, most gift giving is with household members (Garner & Wagner, 1991), a finding supported by Becker (1974), Belk (1979), Caplow (1982), and Cheal (1988). Also, large families tend to have a lower probability of engaging in gift giving, and they value gift giving less than small families. However, the number of gifting occasions is positively related to the number of female adults in a household (Garner & Wagner, 1991).

Several studies show differences in gift expenditure behavior based on the family life cycle (Sherry, 1983). Garner and Wagner (1991) found that mature and older people with no children spend more on gifts than young single adults. This behavior is associated with income. Because financially mature or older people with no children do not have to care for children, they have more opportunities to spend their income on gifts for other social partners. This means, also, young single adults spend more on extra-household gifts than young married adults.

The decision on how much money to spend on gifts is related to the givers' total household income. Supporting this, Ryans (1977) suggests that the purchase rates for gifts in department stores by urban households are higher than rural households. Also, Cheal (1986) suggests that the value of the gifts given is positively correlated with givers' income. Garner and Wagner (1991) also suggest that the allocated proportion of gift expenditures increases as household income

increases. This means, if a household has decreased income, the family tends to reduce its expenditures on extra-household gifts first. However, sometimes even low-income families have a large percentage of gift giving because of anticipated benefits from reciprocal gifts (Garner & Wanger, 1991; Homans, 1961; Mauss, 1967).

Steinberg and Wilhelm (2003) have identified a number of interesting relationships between age and gift giving. According to their research, as people age, they tend to give more gifts than their younger counterparts. In addition, the average gift cost rises in relationship to the gift giver's age. A simple reason is that the average older person is wealthier than the average younger person. Also, the older person has a more active social life and wider acquaintances than younger people. Older people are also more likely to give gifts to religious organizations than younger people.

### ***Education***

Highly educated people have been found to be more likely to spend money on gifts (Douglas & Isherwood, 1979; Young & Willmott, 1973). This would appear to be a simple function of income. Normally, higher education results in higher income. However, according to Garner and Wagner (1991), givers who have high school diplomas have the highest probability of gift giving in their households (intra-household). Education is also related to the value of extra-household gift expenditures. In Garner and Wagner's (1991) study, people with a college education or an undergraduate degree exhibit the second highest probability to buy gifts, and people with some college, undergraduate degrees, or postgraduate education spend more money on each gift. This suggests that education is an important variable influencing gift giving (Coleman, 1983).

According to Arndt (2000), bachelors have the second largest percentage of total household expenditures allocated to gift giving, next to household heads with high school diplomas. The respondents in this study that had bachelor's degrees were at the early stage of their careers, were

under 40 and single. Even if bachelors have the second largest percentage of gift giving, Arndt (2000) suggests that people who have a bachelor's degree spend a substantial amount of money on gifts because of high discretionary or flexible income. He also suggests that people with bachelor's degrees spend a little more than newly married couples, solitary survivors, older singles, as well as couples under 40 with young children. This appears to be related to their life cycle. Compared to married couples who have children, household heads with bachelor degrees do not have to consider the expenditures needed to care for a family.

### ***Race***

Studies by Alden and Green (1998), Jolibert and Fernandez-Moreno (1983) and Ma (1985) show that African-Americans are less likely to spend on extra-household gifts than non-African-Americans. King (1977) suggested that Anglo-Saxons, obsessed with social decorum, committed to noblesse oblige, and craving emotional detachment, are probably more likely to spend their budgets on extra-household gifts. However, African-Americans and Europeans do engage in a significant amount of gift giving (Garner & Wagner, 1991). Asians were found to have the lowest probability of gift giving in Garner and Wagner (1991)'s study. This may be because the sample of households did not include enough Asian participation. Compared with American men, European men appear to exhibit more facility in addressing gift exchange with romantic partners. According to Cancian (1966), compared with other peoples, Americans tend to have more concerns about equality of gifts in the gift giving exchange.

Jolibert and Fernandez-Moreno (1983) compared gift giving habits between the French city of Grenoble and the Mexican city of Puebla. In their study, they suggest that Mexican husbands engage in a higher proportion of gift giving to their families than French husbands. Also, Mexican couples apparently spend more of their average monthly income for Christmas gifts than French couples. Moreover, the researchers noted that the French city of Grenoble spends less on

Christmas gifts than the Mexican city of Puebla. During the Christmas season, French couples spend 10 percent or less of their monthly discretionary income on Christmas gifts, while Mexican couples spend approximately 70 percent.

### ***Gender***

Gender is an important demographic variable which influences gift giving. Just as male and female household members have different perceived responsibilities for their share of house work, cooking or house repair, their gift giving behavior also differs by gender. Caplow (1982), Cheal (1986), and Fischer and Arnold (1990) found that women engage in the highest rate of gift giving; however, men engage in more expensive gift giving. Interestingly, among households giving gifts, the number of female adults does not appear to affect expenditures, although it affects the number of gifts given (Garner & Wagner, 1991).

Many theorists suggest that because of the previous gift exchange responsibilities of women in their families that women tend to do more gift giving than men (Areni, Kiecker, & Palan, 1998). As gift giving is defined as symbolizing a relationship, it can strengthen existing good relationships or reward a strained relationship (Carrier, 1991; Areni, Kiecker, & Palan, 1998). Areni, Kiecker, and Palan (1998) found that people can help others with gift giving when they are in difficult situations.

Men tend to have more difficulty in expressing their emotions verbally than women. However, they tend to express themselves in gift giving by preparing gifts in advance and surprising the recipients, especially women (Reis, Senchak, & Solomon, 1985; Areni, Kiecker, & Palan, 1998). Men also tend to want to prepare “perfect” gifts for women, for example something expensive and very nice. Women, on the other hand, prefer to receive gifts that can symbolize the relationship, things that are personal historical items such as old family photos or a baseball cap their significant other wore as a child. Women also prefer to receive family-related gifts and gifts

with personal history or family meaning from their parents.

### ***Total Household Income***

Household income has been investigated as a determinant of household expenditures in a number of consumer expenditure studies (Deaton & Muellbauer, 1980). One of the early studies using US Bureau of Labor Statistics data on expenditures by wage of clerical earners from 1934 to 1936 showed average clothing expenditures by sex and age (Williams & Hanson, 1941.) Hamburg (1950) explored the demand for urban household clothing consumption using income and other independent variables given the effects of occupation, education, and race. He found that whites spend less on clothing than blacks at every income level. According to Hamburg (1950), white-collar workers spend more on gifts than blue-collar workers because of different income levels. Supporting Hamburg (1950), Form and Stone (1955) noted that clothing expenditures were influenced by occupation, demonstrating a mind-set by both white-collar and blue-collar workers. Erickson (1968) found that the Northeast has the highest income level with the highest spending on clothing while the South has the lowest of both income level and spending on clothing, based on 1960-1961 CEX data.

However, based on previous studies, the estimation of the consumption function's income variable has been argued, because of the lack of available and reliable data on income as an independent variable (Cramer, 1969; Crockett & Friend, 1960; Dardis, Derrick, & Lehfeld, 1981; Houthakker & Taylor, 1970.) According to Cramer (1969), improper income levels would have a negative impact on expenditure studies. Crockett and Friend (1960) noted that excluding relevant explanatory variables may result in an upward bias when income is the only explanatory variable. For these reasons, total expenditures have often been used as an approximation for permanent income (Dardis et al., 1981; Houthakker & Taylor, 1970; Nelson, 1992; Paris & Houthakker, 1957; Winakor, 1962.)

The two most popular income variables have been: (1) disposable personal income; and (2) total current consumption expenditures. Both of these have been used in academic research to estimate household expenditures (Crockett & Friend, 1960; David, 1962; Dardis, Derrick, & Lehfeld, 1981; Nelson, 1992; Prais & Houthakker, 1957; Winakor, 1962.)

## **The Sociological/Psychological/Anthropological Perspective on Gift Giving**

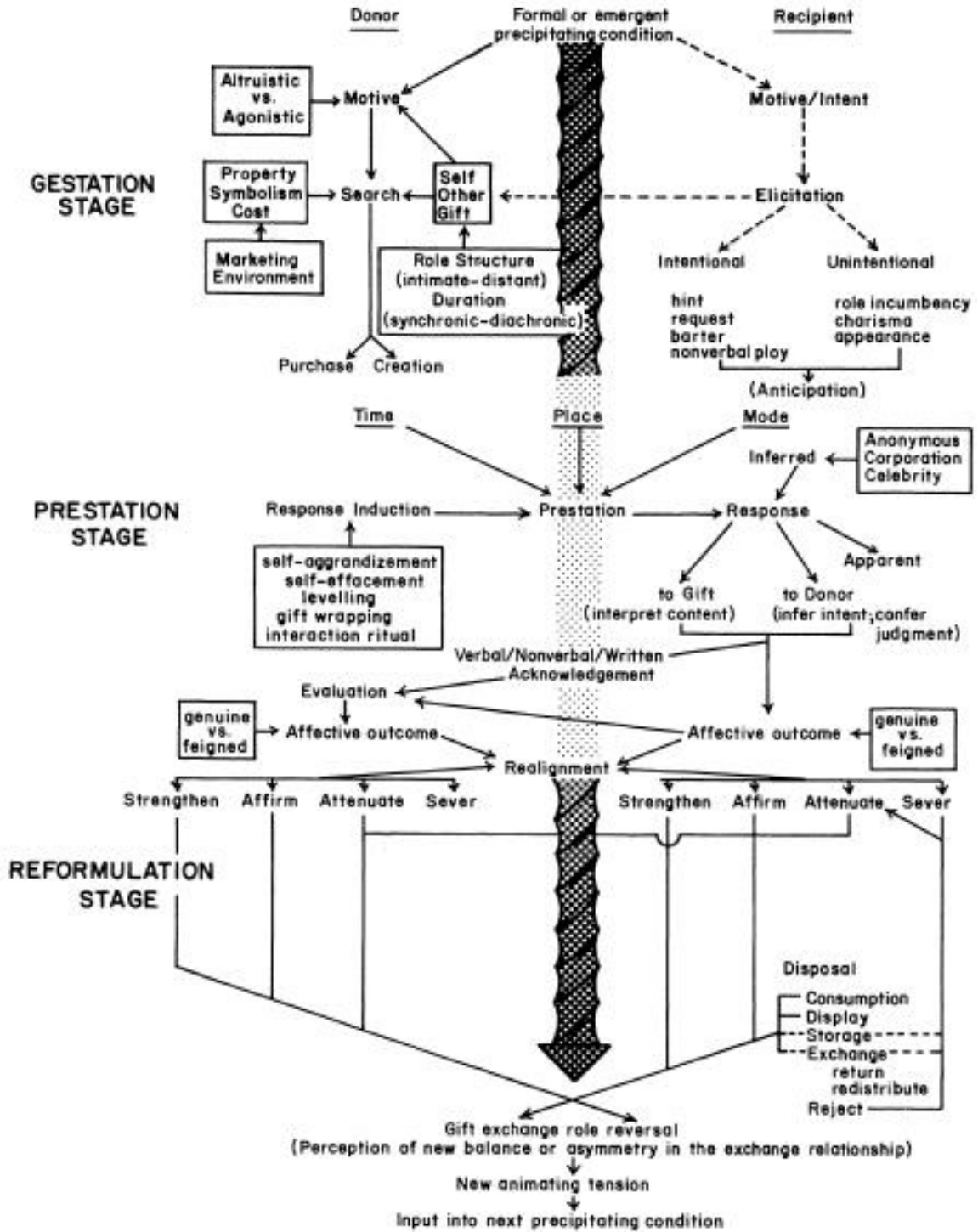
### ***Overview***

In addition to the economic and socio-economic perspectives, three other academic views have been taken in gift giving—sociology, psychology, and anthropology. Gift giving is an area of long standing interest to anthropologists, psychologists, and sociologists (Levi-Strauss, 1965; Mauss, 1954), as well as consumer researchers (Banks, 1979; Belk, 1976; Sherry, 1983). According to Lowes and colleagues (1968), there are three primary motivations for gift giving: (1) to give pleasure or show friendship (42%); (2) to obtain pleasure (27%); and (3) to meet social expectations (15%) (the remaining motivations for gift giving total 16%).

The first academic treatise on gift-giving was written by Mauss (1920), a noted French sociologist. After his seminal book, gift-giving theory developed systematically. Belk (1979)'s gift-giving model, regarded as the very first powerful influence in modern research on gift-giving theory, did not explain a complete theory of gift-giving. Today, the most commonly used model for gift-giving is Sherry's (1983) model. He suggested that gifts may be used as a sign of social group or social distance. His model described the process of gift giving in detail (see Figure 2.3). In his model, he explained that gift giving may strengthen, affirm, attenuate, or sever social bonds. He divided the gift giving process into three stages; gestation, prestation, and reformulation stage. The spiral in the model illustrated the relationships between partners and the broken spiral indicated secondary or background considerations such as possible previous circumstances or consequences of thoughts, feelings or actions (Sherry, 1983, p.162).

Figure 2.3

The Processing of Gift-Giving



Note: Sherry, 1983.

Sherry defined the gestation stage as the period in which gifts may be transferred from thought to the material realm. Also, he suggested that the gestation stage is the preparation for making or strengthening the social bond. In this stage, givers may think about the appropriate gifts related to their budget.

Sherry defined the actual gift exchange stage as occurring during the pre-station period. As the final stage of gift giving, during the reformulation stage Sherry saw people focusing on the effect of the gifts. This suggested that social relationships may be more influenced by this stage (Sherry, 1983). To develop his model, Sherry (1983) used corporate groups rather than individuals as the donors and recipients of gifts. He suggested that the measurement of the relationship and status of each donor and recipient must be compared to the other in order to distinguish the meaning of the gift giving exchange from the structure of the gift giving itself. He also suggested that the meaning of gifts may be “altruistic, where the donor attempts to maximize the pleasure of the recipient, and agonistic, where the donor attempts to maximize personal satisfaction” (Sherry, 1983, p.160).

Many researchers have described gift giving as a way of expressing and maintaining social ties that serves as a means of symbolic communication in social relationships (Belk, 1976, 1979; Caplow, 1982; Cheal, 1988). Gift giving was demonstrated as communication, social exchange, economic exchange, and socialization by Belk (1979). When gift giving has involved social exchange, it has established qualitative relations between subjects while economic exchange has established quantitative relationships between objects (Gregory, 1982). Most sociological studies about gift giving have been giver-centric, focusing on the giver as opposed to the recipient of the gift (Otnes, Lowrey, & Kim, 1993).

From a psychological perspective, consumers' personality or lifestyle characteristics have been researched in relationship to their behavior in buying and using products (Lastovicka &



Joachimsthaler, 1988). However, gathering consumers' personality traits and buying and use behavior has been difficult and required multiple item measurement. Additionally, it has been time-consuming. Lastovicka and Joachimsthaler (1988) for their consumer behavior research used a single-item measurement of gift giving behavior. Using this method, Lastovicka and Joachimsthaler (1988) found that consumers' purchase items and behavior are different depending on lifestyle.

Situational conditions such as physical or social surroundings between givers and receivers may also influence gift exchanges (Belk, 1975; Johnson, 1974; Kakkar & Lutz, 1981). According to Belk (1975), situational conditions improved the relationship of the exchange partners. Befu (1980) suggested that both sociologists and psychologists have been interested in motivations for individual strategies and decision making rather than cultural rules. Within the sociological and psychological approach three key research streams have developed: Christmas gift giving, gift giving and romance, and the dark side of gift giving.

### ***Christmas Gift Giving***

As Belk (1979) and Sherry (1983) suggest, Christmas gifts are particularly valuable in serving diverse social, economic, and personal purposes. As with many western cultures, the United States has been heavily influenced by the Christian tradition. This means Christmas is one of the most important holidays, which also makes Christmas gift giving a large issue both economically and socially (Beatty & Smith, 1985; Brunel, Otnes, & Ruth, 1999). For retailers, manufacturers and advertisers, the Christmas season is significantly important for sales reasons (Babin et al., 2003). In Caplow's (1982, p. 383) study, he described Christmas gift giving as "a major feature of American culture that involves nearly the entire population, accounts for an appreciable fraction of all consumer spending, and engages a vast amount of human effort." A key reason for the importance of Christmas gift giving is its ability to establish and strengthen

social relationships (Schudson, 1986).

A large number of researchers have found gender differences in Christmas shopping behavior such as Fischer and Arnold (1994), Zeithaml (1985), and others. Buttle (1992) also noted men and women have different perspectives on buying gifts. Women usually have the responsibility in families to buy gifts (Fischer & Arnold, 1990). This can be explained by a traditional stereotype in which family care has been regarded as women's work (Babin et al., 2003).

According to Jolibert and Fernandez-Moreno (1983), the decision to purchase Christmas gifts is made mostly by women in Mexico. Also, Sherry and McGrath (1989) supported that the family purchasing event is generally women's traditional work. This may reflect that women are more sensitive than men when they buy goods because they manage the majority of shopping events for their families for other items such as groceries or clothing (Buttle, 1992).

In modern society, women still have a tendency to buy more gifts than men. However, no matter who the givers are, men or women, if they have more socially-oriented traits, they have a tendency to buy more gifts than those who are not socially-oriented (Fischer & Arnold, 1990). Also, women who have jobs give more gifts than those who are not working outside the home. According to Caplow's study (1982), women are more likely to give ornaments, craft objects, food, plants and flowers, while men give items such as appliances and sports equipment for Christmas.

Furthermore, men tend to buy more expensive Christmas gifts if they don't know the recipients well, while women spend more time considering what gifts would be most appropriate for the recipients (Fischer & Arnold, 1990; Otnes, Lowrey, & Kim, 1993). Sternthal (1986) added that men focus on one idea or aspect of that product's information while women consider all information about the product including their budget limitations related to the receivers'

relationship. According to Babin and colleagues (2003), women tend to spend less on clothing gifts for Christmas than men. They also suggest that women tend to buy more Christmas gifts, visit more stores in order to find the “right” gift, and start earlier to buy Christmas gifts than men. This supports the findings of Fischer and Arnold (1990), and Otnes, Lowrey, and Kim (1993).

Women’s gift giving is also largely dependent on their possession of a job (Roberts & Wortzel, 1982; Schaninger & Allen, 1981). According to Babin and colleagues (2003), working women are likely to have less time for shopping. When the nature of employment is considered, full-time working women tend to start shopping earlier in the year for Christmas gifts than part-time working women. They also suggest that higher income level women tend to start earlier in the year and spend more on gifts.

### ***Gift Giving and Romance***

Gift giving in dating is also an interesting component of gift giving and has an economic perspective. Rusbult (1980) and Rusbult, and Zembrodt (1983) explained in their studies, that in dating long-term relationships are possible only when the value of gifts that people receive equals the value of gifts that they give. Usually, men are not willing to buy expensive gifts for short term relationships (Camerer, 1988). Sexual favors are considered a significant fact in dating (Belk and Coon, 1993). Women tend to attempt to place a high price on their sexual favors while men strive to attain them at the lowest possible price (Blau, 1964). This is because many people think sex is a part of the gift that women can offer to their partners in dating. For this reason, many women feel men should pay for everything during the date (Belk & Coon, 1993). When people think of their relationships only economically, they can experience conflict when expectations of a balance in gift giving are not met, even if they are lovers (Belk & Coon, 1993).

Gifts in marriage are also important. Generally, through marriage people can increase their access to commodities relative to those available to them when single. The production of these

commodities benefits from increased specialization by the family members. According to Parkman (2004, p. 494), “the problems associated with the efficient production of gifts have contributed to some spouses’ dissatisfaction with their marriage.” Also, because of inadequate access to psychological gifts the divorce rates are increasing. Possibly, frequent gift giving between two spouses may reduce the divorce rates.

Over the years, Valentine’s day has become a worldwide phenomenon. Ebenkamp (1999) suggests that people celebrate Valentine’s day more than Mother’s day or Father’s day. Wooten (2000) noted that Valentine’s day gift giving involves romantically-involved relationships expressing their love. Today, men are more often gift givers in relationships than women (Jackson, 1992; Goodwin, 1990; Areni et al., 1998). However, Rugimbana and colleagues (2003) suggest that marketers often target younger couples. They also suggest that all respondents of their research believed gift giving on that day is necessary in a romantic relationship. They noted Valentine’s day gift giving may avoid conflict within their relationships.

### ***The “Dark Side” of Gift Giving***

Positive exchange between individuals or groups is perhaps the most common emotive state in gift giving. However, there is a side of gift giving that has been addressed in a number of studies. Sherry, McGrath, and Levy (1993) found that when people tend to think that returning gifts is not important, this may result in damaged relationships. Otnes, Lowrey, and Kim (1993) explain how the building of relationships between givers and recipients influences Christmas gift giving. In their study, they also explained gift giving may produce negative effects to donors and recipients because of their relationships, not just because of the gift.

As Caplow (1982, 1984) mentioned, most Christmas gift giving takes place among close family members such as fathers, mothers, and siblings. Mostly, givers buy gifts that recipients might wish or would be happy to receive. However, if givers do not know the recipients well,

they tend to buy what they like or the same type of gift as given in previous years (Otnes, Lowrey, & Kim, 1993). Between employers and employees, money is often considered to be an appropriate Christmas gift (Caplow, 1982).

Sherry (1983) also suggests that gift exchange may adjust the desired degree of relationship between givers and receivers. According to Garner and Wagner (1991), givers may expect returning gifts from receivers to be the equivalent of the original gift in terms of value. They also found that people have too much anxiety and too many expectations associated with receiving gifts. This is because they, usually women, want to boast about what they received from the givers. Also, people tend to have too many expectations of gifts when they are splendidly wrapped, which can result in disappointment with the gifts once opened (Sherry, McGrath, & Levy, 1993). Supporting this, Sherry (1983) suggests that gift selection is determined by the giver and receiver's relationships. He explained in detail the direction of gift giving and the effect of relationships in his gift giving model. Also, the value of gifts has been associated with the relationship between givers and receivers. Thus, if relationships change, the gift value will likely change (Shurmer, 1971).

Shama and Thompson (1989) suggested that receiving a gift or benefit results in being socially indebted to the giver. They also suggested those receiving would remain in debt until they repay in like kind or value. According to Shurmer (1971), the first gift exchanged between two people sometimes may involve social or material risk, because receivers may conclude that givers are of a different social level based on the gift. Recipients may also have certain expectations for gifts relative to the gift givers. As Sherry (1983) suggested in his research, if expectations of both givers and receivers are not matched, their relationship can be negatively influenced.

As a person grows up, his/her roles in life may change with different circumstances such as being an employee or employer. So, appropriate gifts are needed to maintain appropriate relationships. Gifts that are too much, too little, or too late may result in bad relationships and undermining of important social roles (Sherry, 1983; van Baal, 1975). Shama and Thompson (1989) noted an expensive gift may be given in order only to bribe or flatter. Also, Johnson (1974) suggests that the number of gifts as well as the value of the gifts exchanged may influence the relationships of givers and recipients, bringing them closer or distancing them.

Ruth, Otnes, and Brunel (1999) also said people can realign their bad relationships by meaningful gift giving, but the gifts do not have to be expensive. Supporting Sherry (1983), they mentioned gift giving may negatively affect the social bond in both short and long-term relationships. In this case, from the recipient's point of view, the problem is primarily due to a lack of giver effort, an undesirable message, or the manner of giving the gift. This pushes relationship boundaries and future expectations in undesired directions as a result of the recipient's perception (Ruth, Otnes, & Brunel, 1999).

### ***Cultural Gift Giving***

A fourth perspective on gift giving comes from anthropology which focuses primarily on the cultural aspect of gift giving and distinguishes between gift cultures and monetary exchange cultures. Gift cultures differ from exchange cultures in that exchange cultures are characterized by scarcity, while gift cultures are characterized by abundance. A majority of research from the anthropological perspective has looked at cultural differences within monetary exchange cultures.

Blaxter (1971) suggests that keeping balance between giving and receiving is important. In his study of French states, Blaxter (1971) emphasized equal reciprocation of gifts, and Bailey (1971) suggested that gifts are also a part of communication. Through gifts donors may convey their mind to recipients. As with all communication, sometimes there are certain

misunderstandings. Gifts also can give somewhat different messages to different recipients.

A new way of looking at cross-cultural gift giving is through the global access to the Internet with the development of high-technology. Internet networking, it has been argued that software development is founded on gift relationships, in which pieces of code are shared in the form of gifts to a community of open source developers. Rheingold (1994) described the concept of understanding the virtual community's custom of giving away as a cultural perspective on gift giving. In his study, he suggests two kind of information-sharing practices are related with culture. The first information sharing practice is finding people who are interested in new cultural phenomena that have led them to explore different virtual worlds. They can share information about almost everything through their network. But sharing can also mean emotional support. The second information sharing practice consists of professionals who rely on having information constantly at their disposal. This kind of giving away is based on a hunger for intellectual companionship, initially found most commonly among professionals who work more or less independently (Rheingold, 1994).

Additionally, Kollock (1999) added the character of digital information as an explanation for the intensive sharing of work, social experiences and other forms of knowledge among members of the community, an explanation of the kind of gift culture that encompasses different online communities. A relationship is created online between givers and receivers as a form of charity. As gifts do not imply a monetary compensation, virtual community gift giving is managed through some form of acknowledgement. The giver is 'paid' by the community by receiving a certain amount of fame and respect. For example, right now the personal mini homepage is very popular in South Korea. Young people want to receive e-money as a gift with which they can buy e-products to decorate their homepage.

In gift cultures, Raymond (1999) argues, social status is determined ‘not by what you control but by what you give away.’ Gift cultures are based on gift economies, in which social relations are not regulated by the possession or exchange of money or commodities. Gift cultures are characterized by the creation and maintenance of social relationships based on the economy of gift exchange. Differences in cultural characteristics may result in different styles and meanings in gift giving for different countries and cultures. Mauss (1966) explains the two most frequently studied forms of ritualized gift giving in anthropology, the potlatch system of the Indians of the American Pacific Northwest and the kula ring structures of the Pacific Islands. Both systems represent the exchange of goods through social networks. He explains potlatch as a form of gift exchange related to the Kwakiutl of the Pacific Northwest. In that system, the head of the tribe collects tribal goods from the society and stores them. After enough goods are gathered, the head invites other tribes and gives away the goods. The extent of gift giving symbolizes the power of the tribal head. On the other hand, the kula ring system is a form of exchange in which donors expect social advantages from the recipients until the gift has been repaid. Through this gift exchange, islanders establish their social boundaries with other islanders.

Henry (1951) describes the circulation of essential commodities in the South American Pilaga, and Herskovits (1952) does the same for tribes in rural India. The important thing that Herskovits (1952) suggests is that the gift exchanges around the ceremony and the ritual event make it an important social event, as well as an economic event. Eglar (1960), in his study of gift exchanges in Pakistan, states that gift giving can be an exciting social game to expand one’s social relationships. He also suggests that the donors must consider the danger of overextension related to reciprocity and equilibrium.



### ***Summary***

As research on gift giving geared up in the 1970s, most previous studies in gift giving were based on western countries. To extend the study for non-western countries, Burling (1962) and Cancian (1966) explained that economic theories, norms, and strategies must be maximized. According to their study, differences in culture and the meanings of gift giving make it difficult to compare western ways to those of non-westerners. According to Befu (1980), anthropologists focus on cultural issues for gift giving research rather than pursuing sociologists' and psychologists' interest in motivations. Sherry (1983) has observed that the anthropological perspective on gift giving may be explored and improved with ethnographic feedback, experimental design and treatment manipulations.

### **Gaps in the Literature**

Given that Belshaw (1965) estimated that gift giving is about 10 percent among retail sales in North America, it is important to know more about gift giving expenditures. Many studies have focused on the economic perspective of gift giving (Belk, 1979; Belshaw, 1965; Burling, 1962; Cancian, 1966; Davis, 1972; Ekeh, 1974; Shama & Thompson, 1989), while many studies have explored the impact of socio-demographic factors; family, education, race, gender, and household income, on gift giving. Also, several studies have focused on Christmas gift giving both economically and socially (Beatty & Smith, 1985; Brunel, Othnes, & Ruth, 1999). A majority of these studies have looked at people and behavior in the West (Bailey, 1971; Blaxter, 1971; Kollock, 1999; Raymond, 1999; Rheingold, 1994). Although previous studies have focused on gift giving or clothing consumption, little research has been done bringing these two areas together, that is, expenditures on clothing as gifts.

### **Research Questions and Objectives**

Many gaps exist in the expenditure literature relative to gift giving and clothing, and the literature base would be enriched by understanding more about these areas. The overall research question for this study is what are the clothing and clothing gift expenditures of different CUs. Specifically, the objectives of the research included (1) estimating the probability of giving gifts of clothing relative to all expenditures on clothing; (2) estimating the probability of giving gifts of clothing (aggregate clothing expenditures for adult clothing and infant clothing) by gender, ethnicity, and age; and (3) testing for mean differences in clothing expenditures and clothing gift expenditures based on CU gender, ethnicity, and age. Chapter III presents the methodological details.

## CHAPTER III

### METHODOLOGY

Chapter III presents the following five sections: (1) Introduction; (2) Overview of the CEX; (3) Methodological Approach (Sample/Data Collection/Measures); (4) Data Analysis; and (5) Data Preparation.

#### **Introduction**

In order to answer the research question of the probabilities associated with gift-giving expenditures by CU, Bayesian statistical concepts were used to analyze data from the Consumer Expenditure Survey (CEX) 2001. A Bayesian statistics approach was selected because of its ability to estimate the probability of reciprocity. The CEX was selected as a data source because the CEX is one of the best sources of product consumption data for consumer units in the United States (Attanasio, 1994). In order to answer the research questions regarding mean differences between CU expenditures, ANOVA was conducted. The expenditure categories included in the study are clothes for adults (ages 14 and over) and infant clothing (ages under two). Clothing expenditures for ages between three and 13 were excluded, because, it was felt that clothing expenditures for this age group are more focused on intra-household uses rather than gifts.

#### **Overview of the CEX**

The data set used in this study was drawn from the Consumer Expenditure Survey (CEX) 2001. In the 1870s, the first expenditure surveys in the United States were conducted by the Massachusetts Bureau of Labor Statistics out of concern for the welfare of working families in times of rapid social and economic change. At that point in time family income and expenditures were investigated with an interest in production cost. Between 1888 and 1891 the first national

expenditure survey provided data for tariff negotiations between European countries and the United States. Then, a food expenditure survey was first conducted during the 1901 survey. From 1917 to 1919, the CEX began to cover many other detailed categories of family expenditures. With these early surveys, the living conditions and economic status of the working man were a major focus. Also, these surveys were designed to assess the living costs of factory workers (Jacobs & Shipp, 1990.)

The 1935-1936 survey included demographic variables to provide broad information including both urban and rural populations. During that period, analysis of expenditures based on income, region, occupation, family composition, race, and degree of urbanization began. The demographic variables, however, were limited to native born, white, and husband-wife families only. It should be noted that the 1935-1936 survey was the first systematic and comprehensive survey which included all goods and services. During the early 1940s, the Department of Agriculture cooperated to provide information on governmental decisions affecting the civilian economy during World War II. After that, alternative techniques and methodologies for the CEX were tested in selected cities in the late 1940s. These tests included surveys through both a diary survey and an interview survey, a method that continues to be used. According to Rogers (1997), weekly diary surveys asked participants to keep a diary of their everyday expenditures. At the end of the survey period, all diaries were collected to analyze the patterns of consumption or expenditure within each income range. The interview surveys were conducted during four consecutive quarters, and interviewers asked the head of the household how the household had spent money on major purchases during the prior quarter (Rogers, 1997).

The survey form of the 1950s was based on the interview survey. The interviews were held for a seven-day period with an average interview length of eight hours. The respondents were asked to record their consumption for the seven days following the interview then to return the

form by mail. A mail survey was introduced in the 1960s based on the 1950s format. The 1960-1961 survey focused on extended demographic variables and included all wage earners in the population to provide better expenditure data for calculation of the Consumer Price Index (CPI). The collection process of this survey was similar to the 1935-1936 and 1950s surveys, while the questionnaires themselves were shortened and simplified from that used in the 1950s (Jacobs & Shipp, 1990).

The 1972-73 survey introduced the first Bureau of Labor Statistics (BLS) expenditure survey which consisted of two separate components, quarterly data collection through an interview survey and through a diary survey. Interviewers visited participants once every three months over a one year period. The diary survey was similar to previous surveys in that it asked participants to keep a diary for two one-week periods. An annual survey plan was agreed upon after the oil crisis in the 1970s to provide timely data for economic analysis and was begun in 1980, replacing the previous once-a-decade approach of gathering data on the expenditure habits of American consumers. Recent modifications to the data collection techniques for the CEX include rotating panels of respondents and interviewing consumer units (CUs), rather than households, for five consecutive quarters rather than four quarters. Over time the CEX has grown and matured in content and methodology. Tracking the characteristics of household consumption patterns has been deemed critical by the U.S. government to gain better understanding and seek solutions to social and economic problems (Jacobs & Shipp, 1990).

### **Methodological Approach**

#### **Data Collection**

The basic measurement unit for the CEX and this study is the consumer unit (CU). A CU is not the same as a household. According to Rogers (1997, p.54), the consumer unit is defined as consisting of any of the following: (1) “all members of a particular household who are related by

blood, marriage, adoption, or other legal arrangement”; (2) “a person living alone or sharing a household with others or living as a roomer in a private home or lodging house or in permanent living quarters in a hotel or motel, but who is financially independent”; or (3) “two or more persons living together who use their incomes to make joint expenditure decisions.”

CEX data collection is conducted by the Bureau of the Census, under contract with the Bureau of Labor Statistics (BLS). The 2001 CEX collection of data on household expenditures consisted of two parts: (1) the Quarterly Interview Survey in which CUs are interviewed every 3 months over a 15 month period; and (2) a Diary Survey filled out by CUs for 2 consecutive one-week periods. About 7,500 consumer units are sampled annually for the diary survey and about 7,500 consumer units are sampled each quarter for five consecutive quarters for the interview survey.

The interview survey is designed to capture expenditure data that respondents can reasonably recall for a period of 3 months or longer, such as relatively large purchases including houses, cars, and major appliances. It also includes expenditures that occur on a fairly regular basis, such as utilities, rent, or insurance. Excluded are non-prescription drugs, household supplies, and personal care items. Including expenditures for food, about 95 percent of all household expenditures are captured by the CEX interview survey. Each consumer unit is interviewed once each quarter, and data are collected in 105 areas of the United States (U.S. Department of Labor, 2003). The first quarter of the interview survey is used for bounding purposes only. Therefore, a single year’s survey includes approximately 30,000 interviews. For this study, interview survey data were drawn from the first quarter of 2001 through the first quarter of 2002. For the Diary Survey, each consumer unit keeps a diary for two one-week periods, resulting in about 15,000 diaries per year. These diaries are for small and frequently purchased items such as food or tobacco (U.S. Department of Labor, 2003).

After all data for the CEX have been collected, the data are reviewed and audited by the BLS to reflect the number and characteristics of all U.S. CUs. According to the BLS, average expenditures may differ by CU characteristics. It should be noted that population coverage and expenditure data coverage are differently represented by the CEX and the CPI. The CEX covers total population and uses actual expenditures of homeowners, while the CPI covers only urban populations and uses a rental equivalence approach to measure the change in the cost of goods.

### ***Independent and Dependent Measures***

Previous research has included age, education, family type, family size, gender of household head, income, location (region or urban/rural), marital status, occupation, and race as major variables influencing gift giving expenditures on clothing. Also, in some research, employment status of the wife has been a focus in view of increased labor force participation by married women. As the objective of this research is to investigate the relationship between key socio-demographic variables and household expenditures on clothing purchased for gift giving, three independent variables will be investigated in this study: (a) gender, (b) ethnicity, and (c) age.

For this study the consumer unit (CU) is the unit of observation, and the dependent variable is expenditures on clothing purchased for gift giving. For the purpose of the study, only clothing expenditures for ages 14 and over and clothing expenditures for ages under two were included. The 2001 CEX collected data for 19 clothing categories (the dependent variable) in Part A, Clothing, which is referred to as adult clothing, and 12 clothing categories in Part B, Infants Clothing, Watches, Jewelry, and Hairpieces, of Section 9 (Clothing and Sewing Materials), which is referred to as infant clothing. Of the apparel categories tracked by the CEX, only certain categories are relevant for this study's research questions. Hosiery is excluded from the study because it is unlikely to be selected as a gift item. It is very difficult to fit recipients, is too inexpensive, and lacks cachet as a gift. Additionally, uniforms, costumes, combined clothing, and

footwear were not included in the study analyses because these categories are rarely selected as gifts, are difficult to fit and/or are inappropriate aggregations. From this point forward, all inappropriate categories have been eliminated for the purpose of presenting data and the tables are based only on the categories of interest to the study.

Table 3.1

Purchase Events and Category Share for Adult Clothing Category Expenditures (2001CEX)

Section 9: Clothing and Sewing Materials  
Part A – Clothing

Item Coded	Item	Purchase Events	Percentage of All Purchase Events
100	Coats, jackets, and furs	6,955	5.11
110	Sport coats and tailored Jackets.	1,419	1.04
120	Suits	2,421	1.78
130	Vests	951	0.70
140	Sweaters and sweater sets	7,525	5.53
150	Pants, slacks, and jeans	18,196	13.38
160	Shorts and short sets <sup>1</sup>	6,220	4.57
170	Dresses	5,148	3.78
180	Skirts	2,707	1.99
190	Shirts, blouses and tops	19,254	14.16
200	Undergarments	11,166	8.21
210 <sup>+</sup>	Hosiery	12,147	8.93
220	Nightwear and loungewear	5,034	3.70
230	Accessories	7,130	5.24
240	Active sportswear	4,798	3.53
250 <sup>+</sup>	Uniforms <sup>2</sup>	1,539	1.13
260 <sup>+</sup>	Costumes	1,855	1.36
270 <sup>+</sup>	Combined Clothing (100-260)	7,385	5.43
280 <sup>+</sup>	Footwear <sup>3</sup>	14,167	10.42
Total:		136,017	100.00

Note: Calculated using the 2001 CEX.

<sup>1</sup> Excluding athletic shorts

<sup>2</sup> For which cost is not reimbursed

<sup>3</sup> Includes athletic shoes not specifically purchased for sports

<sup>+</sup> Inappropriate as a gift category and was excluded from the study analyses.



Table 3.2

## Purchase Events and Category Share for Infants Clothing Category Expenditures (2001CEX)

Section 9: Clothing and Sewing Materials			
Part B – Infants Clothing, Watches, Jewelry, and Hairpieces			
Item Coded	Item	Purchase Events	Percentage of All Purchase Events
200 <sup>+</sup>	Bedroom Linens (may be present if expenditures are allocated from layettes-CLOTHYB=330)	345	1.71
201 <sup>+</sup>	Bedroom Linens (may be present if expenditures are allocated from layettes-CLOTHYB=330)	320	1.59
290	Infants coats, jackets, or snowsuits	943	4.69
300	Infants dresses and other outerwear	3,751	18.64
310	Infants' underwear and diapers, including disposable	3,568	17.73
320	Infant sleeping garments	1,649	8.19
330	Layettes <sup>1</sup>	357	1.77
340	Infants accessories	1,914	9.51
360 <sup>+</sup>	Combined clothing for infants (290-320,340)	721	3.58
370 <sup>+</sup>	Watches	2,260	11.23
380 <sup>+</sup>	Jewelry	4,072	20.23
390 <sup>+</sup>	Hairpieces, wigs or toupees	228	1.13
Total:		20,128	100.00

Note: Calculated using the 2001 CEX

Table presents only the apparel-related categories of Part B.

<sup>1</sup> Allocated to codes 200,201,310,320,340, 360

<sup>+</sup> Inappropriate as a gift category and was excluded from the study analyses.

For the purposes of the study analyses, 14 categories of adult clothing expenditures were included in the study. The adult clothing category aggregate expenditures were calculated using the following categories: (1) coats, jackets, and furs; (2) sport coats and tailored jackets; (3) suits; (4) vests; (5) Sweaters and sweater sets; (6) Pants, slacks, and jeans; (7) shorts and short sets; (8) dresses; (9) skirts; (10) shirts, blouses and tops; (11) undergarments; (12) nightwear and loungewear; (13) accessories; and (14) active sportswear. The infant clothing category aggregate expenditures were calculated using the following categories: (1) infant coats, jackets, or

snowsuits; (2) infant dresses and other outerwear; (3) infant underwear and diapers, including disposable; (4) infant sleeping garments; (5) layettes; and (6) infant accessories (see Tables 3.3 and 3.4).

Table 3.3

Purchase Event and Category Share for Gift Giving Expenditures on Relevant Adult Clothing Categories

Section 9: Clothing and Sewing Materials			
Part A – Clothing			
Item Coded	Item	Purchase Events	Percentage of All Purchase Events
100	Coats, jackets, and furs	4,447	7.17
110	Sport coats and tailored jackets.	861	1.39
120	Suits	1,547	2.49
130	Vests	589	0.95
140	Sweaters and sweater sets	4,773	7.69
150	Pants, slacks, and jeans	11,465	18.48
160	Shorts and short sets <sup>1</sup>	3,756	6.05
170	Dresses	3,323	5.36
180	Skirts	1,716	2.77
190	Shirts, blouses and tops	12,066	19.45
200	Undergarments	6,999	11.28
220	Nightwear and loungewear	3,124	5.03
230	Accessories	4,420	7.12
240	Active sportswear	2,963	4.78
Total:		62,051	100.00

Note: Calculated using the 2001 CEX.

<sup>1</sup> Excluding athletic shorts

**Sample**

For the purpose of the study, data were drawn from the 2001 CEX. The number of CUs for adult clothing was 13,096 and the number of CUs for infant clothing was 3,948 for the purpose of analysis. There were 6,853 CUs with male heads for the adult clothing category and 2,018 CUs with male heads for the infant clothing category, 6,243 CUs with female heads for the adult clothing category and 1,930 CUs with female heads for the infant clothing category. Also, the

Table 3.4

Purchase Event and Category Share for Gift Giving Expenditures on Relevant Infants Clothing Categories

Section 9: Clothing and Sewing Materials			
Part B – Infants Clothing			
Item Coded	Item	Purchase Events	Percentage of All Purchase Events
290	Infants coats, jackets, or snowsuits	943	7.74
300	Infants dresses and other outerwear	3,751	30.79
310	Infants' underwear and diapers, including disposable	3,568	29.29
320	Infant sleeping garments	1,649	13.54
330	Layettes <sup>1</sup>	357	2.93
340	Infants accessories	1,914	15.71
Total:		12,182	100.00

Note: Calculated using the 2001 CEX

<sup>1</sup> Allocated to codes 200,201,310,320,340.

study included 8,423 CUs with Caucasians heads for adult clothing and 2,307 CUs with Caucasians heads for infant clothing; 1,895 CUs with Hispanic heads for adult clothing and 795 CUs with Hispanic heads for infant clothing; 1,938 CUs with African American heads for adult clothing and 558 CUs with African American heads for infant clothing; 840 CUs with Asian heads for adult clothing and 288 CUs with Asian heads for infant clothing.

For the CUs with heads of certain age groups, analysis included 113 CUs with heads ages 14~19 for adult clothing and 30 CUs with heads ages 14~19 for infant clothing; 745 CUs with heads ages 20~24 for adult clothing and 266 CUs with heads ages 20~24; 2,436 CU with heads ages 25~34 for adult clothing and 1,147 CUs with heads ages 25~34 for infant clothing; 3,123 CUs with head ages 35~44 for adult clothing and 936 CUs with heads ages 35~44; 2,717 CUs with heads ages 45~54 for adult clothing and 654 CUs with heads ages 45~54 for infant clothing; 1,832 CUs with heads ages 55~64 for adult clothing and 527 CUs with heads ages for infant clothing; 1,295 CUs with heads ages 65~74 for adult clothing and 243 CUs with heads ages

65~74 for infant clothing; 835 CUs with heads ages 75 over for adult clothing and 115 CUs with heads ages 75 over for infant clothing.

Gender

Tables 3.5 and 3.6 present the number of purchase events and the number of item purchased based on CUs with heads of certain genders.

Table 3.5

Clothing Purchase Event and Item Purchased for CUs with Heads of Certain Genders (Adult Clothing)

CU's Headed by Gender	Purchase Events	Percentage of All Purchase Events	Item Purchased	Percentage of All Item Purchased
Male-headed CUs	26,582	52.49	68,899	53.42
Female-headed CUs	24,064	47.51	60,080	46.58
Total	50,646	100.00	128,979	100.00

Note: Calculated using the 2001 CEX

Table 3.6

Clothing Purchase Event and Item Purchased for CUs with Heads of Certain Genders (Infant Clothing)

CU's Headed by Gender	Purchase Events	Percentage of All Purchase Events	Item Purchased	Percentage of All Item Purchased
Male-headed CUs	4,162	52.99	122,398	60.87
Female-headed CUs	3,693	47.01	78,677	39.13
Total	7,855	100.00	201,075	100.00

Note: Calculated using the 2001 CEX

Ethnicity

Ethnicity should be a major focus in expenditure research because of the dramatic shift in diversity in the U.S. population anticipated by 2050. The CEX reports both race and ethnicity. The four categories of race in the 2001 CEX interview surveys include White, Black, American Indian/Aleut/Eskimo, and Asian/Pacific Islander. The 20 categories of ethnicity data include

German, Italian, Irish, French, Polish, Russian, English, Scottish, Dutch, Swedish, Hungarian, Mexican-American, Chicano, Mexican, Puerto Rican, Cuban, Central or South American, Other Spanish, Afro-American, and Another Group Not Listed. Given the growing interest in ethnicity and its expected impact on CU expenditures in the United States, this study chose to focus on ethnicity, rather than race.

For the study the ethnicity of respondents was coded into the four following groups based on self-designated origin: (1) European (hereafter referred to as Caucasian); (2) Spanish the CEX designation for Mexican American, Chicano, Mexican, Puerto Rican, Cuban, Central or South American, and other Spanish; hereafter referred to as Hispanic); (3) Afro-American (hereafter referred to as African American); and (4) Asian (see Tables 3.7 and 3.8). These ethnic groups were focused on because of their current and expected impact as consumer segments on the U.S. market.

It should be noted that the CEX classification of “Spanish” does not conform to the generally accepted definition of “Hispanic.” According to Segal (1983), Hispanic is defined as anyone who is of Spanish origin or whose native tongue is Spanish and their children living in the United States. However, among ‘South Americans’, Brazil’s language and cultural heritage are not “Spanish.” Also, among ‘Other Spanish,’ Spain itself and its citizens are not considered Hispanic. Therefore, households identified as Hispanic under the CEX classification structure can only be close approximations rather than exact numbers. It is believed, however that the error introduced by the CEX classification of Spanish/Hispanic will be negligible.

### Age

In 2001 average household expenditures were \$39,518, with \$1,743 spent on clothing (*Household Spending*, 2004); however, previous research has suggested that spending may vary greatly by ages of the heads of households. Due to the fact that the original 2001 CEX data were

Table 3.7

## Clothing Purchase Event and Item Purchased for CUs with Heads of Certain Ethnicities (Adult Clothing)

	Purchase Events	Percentage of All Purchase Events	Item Purchased	Percentage of All Item Purchased
Caucasian <sup>1</sup>	33,403	65.95	77,670	60.22
Hispanic <sup>2</sup>	7,036	13.89	23,923	18.55
African American <sup>3</sup>	7,145	14.11	20,502	15.90
Asian or Pacific Islander <sup>4</sup>	3,062	6.05	6,884	5.34
Total <sup>5</sup> :	50,646	100.00	128,979	100.00

Note: Calculated using the 2001 CEX

- <sup>1</sup> Includes German, Italian, Irish, French, Polish, Russian, English, Scottish, Dutch, Swedish, and Hungarian, and removed all inappropriate categories as a gift category such as hosiery, uniforms, costumes, footwear.
- <sup>2</sup> Includes Mexican American, Chicano, Mexican, Puerto Rican, Cuban, Central or South American, and other Spanish. and removed all inappropriate categories as a gift category such as hosiery, uniforms, costumes, footwear.
- <sup>3</sup> Black or Negro and removed all inappropriate categories as a gift category such as hosiery, uniforms, costumes, footwear.
- <sup>4</sup> Subtracted from Others of original 2001 CEX data and removed all inappropriate categories as a gift category such as hosiery, uniforms, costumes, footwear.
- <sup>5</sup> Removed Others as did not response or report by CU and excluded from the study and lyses, and all inappropriate categories as a gift category such as hosiery, uniforms, costumes, footwear.

Table 3.8

## Clothing Purchase Event and Item Purchased for CUs with Heads of Certain Ethnicities (Infant Clothing)

	Purchase Events	Percentage of All Purchase Events	Item Purchased	Percentage of All Item Purchased
Caucasian <sup>1</sup>	4,663	59.36	95,001	47.25
Hispanic <sup>2</sup>	1,587	20.20	62,189	30.93
African American <sup>3</sup>	1,080	13.75	30,968	15.40
Asian or Pacific Islander <sup>4</sup>	525	6.68	12,917	6.42
Total <sup>5</sup> :	7,855	100.00	201,075	100

Note: Calculated using the 2001 CEX

- <sup>1</sup> Includes German, Italian, Irish, French, Polish, Russian, English, Scottish, Dutch, Swedish, and Hungarian, and removed all inappropriate categories as a gift category such as hosiery, uniforms, costumes, footwear.
- <sup>2</sup> Includes Mexican American, Chicano, Mexican, Puerto Rican, Cuban, Central or South American, and other Spanish. and removed all inappropriate categories as a gift category such as hosiery, uniforms, costumes, footwear.
- <sup>3</sup> Black or Negro and removed all inappropriate categories as a gift category such as hosiery, uniforms, costumes, footwear.
- <sup>4</sup> Subtracted from Others of original 2001 CEX data and removed all inappropriate categories as a gift category such as hosiery, uniforms, costumes, footwear.
- <sup>5</sup> Removed Others as did not response or report by CU and excluded from the study and lyses, and all inappropriate categories as a gift category such as hosiery, uniforms, costumes, footwear.

not structured by age groups, this study drew from the ages classifications used by *American Generations* (2005). *American Generations* (2005) included seven age groups, ages 15~24, ages 25~34, ages 35~44, ages 45~54, ages 55~64, ages 65~74, and ages 75 and over. Based on *American Generations* (2005), the study created eight age categories for CU heads in order to compare expenditures more effectively. The eight age groups are CUs with heads ages 14-19, CUs with heads ages 20-24, CUs with heads ages 25-34, CUs with heads ages 35-44, CUs with heads ages 45-54, a CUs with heads ages 55-64, CUs with heads ages 65-74, and CUs with heads ages over 75. These age groups reflect those of *American Generations* (2005) exactly with the exception of dividing ages 15~24 into two age groups, ages 14~19 which represents teenagers and ages 20~24 which represents young adults including college-age adults. This fine tuning of age groups takes into consideration the differences that exist in sources of income and spending habits between the younger Generation Y and the older Generation Y. Tables 3.9 and 3.10 present the number of events and item purchased for CUs with heads of certain ages for adult and infant clothing.

Table 3.9

Clothing Purchase Event and Item Purchased for CUs with Heads of Certain Ages (Adult Clothing)

CUs Heads of Certain Ages	Purchase Events	Percentage of All Purchase Events	Item Purchased	Percentage of All Item Purchased
CUs with heads Age 14~19	390	0.77	831	0.64
CUs with heads Age 20~24	2,513	4.96	7,027	5.45
CUs with heads Age 25~34	9,110	17.99	29,497	22.87
CUs with heads Age 35~44	13,079	25.82	37,784	29.29
CUs with heads Age 45~54	11,370	22.45	24,860	19.27
CUs with heads Age 55~64	7,317	14.45	15,572	12.07
CUs with heads Age 65~74	4,540	8.96	8,423	6.53
CUs with heads Age 75+	2,327	4.59	4,985	3.86
Total	50,646	100.00	128,979	100.00

Note: Calculated using the 2001 CEX

Table 3.10

Clothing Purchase Event and Item Purchased for CUs with Heads of Certain Ages (Infant Clothing)

CUs Heads of Certain Ages	Purchase Events	Percentage of All Purchase Events	Item Purchased	Percentage of All Item Purchased
CUs with heads Age 14~19	112	1.43	3,328	1.66
CUs with heads Age 20~24	550	7.00	15,342	7.63
CUs with heads Age 25~34	2,374	30.22	105,961	52.70
CUs with heads Age 35~44	1,891	24.07	51,214	25.47
CUs with heads Age 45~54	1,247	15.88	13,969	6.95
CUs with heads Age 55~64	1,053	13.41	8,346	4.15
CUs with heads Age 65~74	440	5.60	2,049	1.02
CUs with heads Age 75+	187	2.39	866	0.43
Total	7,855	100.00	201,075	100.00

Note: Calculated using the 2001 CEX

### **Data Analysis**

There were two major objectives for this study. First was the estimation of probabilities for CU expenditures on clothing and clothing gifts. Following Rossi and Allenby (2003), this study uses the Bayesian technique which offers flexibility and modularity. Rossi and Allenby (2003) suggested that Bayesian analyses have been used to solve a range of marketing problems from new product introduction to pricing. Bayesian methods also provide a wide range of data analyses. Because the posterior results and the exact sampling results are measured differently, Bayesian methods were not used often until the mid-1980s. Rossi and Allenby (2003) suggested that the Bayesian approach requires a certain period of time to gather information and data. They also pointed out that “all Bayesian analysis starts with the specification of the data-generating mechanism or the distribution of the data  $y$ , given the unobservable parameters  $\theta$ ,  $P(y|\theta)$ ” (2003, p. 305). Additionally, Bayesian methods can provide better estimates for uncertain problems or results. The Bayesian approach makes more extensive use of the data than many other approaches. The greatest advantage of Bayesian methods is that they unambiguously state



all prior assumptions. This study used a Bayesian statistical approach because of the following three key characteristics of Bayesian analyses: (1) offering attractive information to researchers in marketing; (2) integrating inference and decision making for both theoretical and applied analysis; and (3) allowing high-dimensional data and complex reciprocity in marketing. Another reason for selecting Bayesian theory for this study is the nature of the data set—a large, complex data set for which the probability of gift giving of a particular apparel item will be conditional upon a large number of variables.

Bayes’ theorem is based on conditional probability theory. Conditional probability is defined as:

$$P(A|B) = P(AB)/P(B) \dots\dots\dots (3.1)$$

where,

$P(A|B)$  = the conditional probability of A given B, that is, the probability of A occurring given that B has occurred,

$P(AB)$  = joint probability of A and B occurring, that is, the probability of the two events A and B occurring together,

$P(B)$  = probability of B occurring,

Through this equation we derive

$$P(AB) = P(A|B)P(B)=P(B|A)P(A) \dots\dots\dots (3.2)$$

Therefore, from equation (3.2), the Bayes theorem is defined as:

$$P(A|B) = \{P(B|A)P(A)\}/P(B) \dots\dots\dots (3.3)$$

or,

$$P(B|A) = \{P(A|B)P(B)\}/P(A) \dots\dots\dots (3.4)$$

where,

$P(A)$  and  $P(B) \neq 0$  (Canada, 1971, p. 290; Maddala, 2001, p. 15).

In summary,  $P(A|B)$  is the probability of A occurring given that B has occurred, which explains what is the probability of A after B has occurred. For example,  $P(\text{Gift} | \text{Male})$  expresses the probability of gift expenditures if the purchase of clothing is made by a male.

The second objective of the study was to test for mean differences between CU expenditures for clothing and CU expenditures for clothing gifts based on gender, ethnicity, and age of CU heads. To test for these mean differences, AVOVA was conducted.

### **Data Preparation**

#### **Treated Data Set**

This study focuses on gift giving expenditures on clothing categories from the 2001 CEX. The clothing expenditures data for Other (ethnicity), which was not described or reported in the 2001 CEX, are not analyzed and reported on in this study. To obtain more interpretable results, all missing, zero, and negative values for household expenditures are removed in this study. If a household reported in three quarters, it would be possible to miss the biggest shopping season during the quarters in which the household does not participate. Therefore, CUs participating in fewer than four quarters of data collection are removed from the data set.

#### **Interpreting the Data**

The expenditures presented in this study are averages for households with specified characteristics, regardless of whether a particular household incurred an expense for a specific item during the record-keeping period. The average expenditure for an item may be considerably lower than the actual expenditures by the households that purchased the item. The less frequently an item is purchased, the greater the difference between the average for all households and the average for the purchased item. In addition, an individual household may spend more or less than the average, depending on its particular characteristics, such as family size, number of children, income, age of family members, and so forth. Furthermore, even within groups with similar

characteristics, the distribution of expenditures varies substantially. These points should be considered when relating reported averages to individual circumstances.

## CHAPTER IV

### RESULTS

Chapter IV presents five major sections: (1) Introduction to the Analysis Results; (2) The Probability of CU Clothing Expenditures; (3) The Probability of CU Clothing Gift Expenditures; (4) The Conditional Probability of CU Clothing Gift Expenditures; and (5) ANOVA Test.

#### **Introduction to the Analysis Results**

For the purposes of analysis in this study, it should be noted that the 2001 CEX provides clear gift/non-gift designations for clothing expenditures in the all clothing excluding the infant clothing category. However, in the infant clothing category expenditures are not broken out into gift/non-gift designations by the CEX. Consequently, as an acceptable approximation for analysis purposes, infant clothing expenditures for non-CU members have been used as a proxy for clothing purchased as gifts and infant clothing expenditures for CU members have been used as a proxy for clothing purchased as non-gifts.

It should further be noted that the unit of analysis in this study is the CU. Consequently, when the independent variables are reported in the analysis and the results, the findings are not for the individual, but rather represent only how the gender, ethnicity, and age of the CU heads have influenced the CUs overall expenditures. The expenditures for the CU may be the sole expenditures of the household head, but they may also include the expenditures made by a variety of CU members. This depends on the composition of the CU. Furthermore, it should be kept in mind that the CUs included in the analysis do not represent all CUs from the 2001 CEX, but instead represent those CUs that have participated in the data collection for all four quarters, have purchased clothing, and have indicated gender, ethnicity (except Others), and age. For the

purpose of clarity in reporting the study findings, all clothing excluding infant clothing will be referred to as adult clothing.

### **The Probability of CU Clothing Expenditures**

The probabilities reported are based on total expenditures for each clothing category. Results indicated that for the two categories of clothing expenditures, non-gift expenditures have a slightly higher probability than gift expenditures in the infant clothing category, while almost 90 percent of the adult clothing category was purchased as non-gifts (see Table 4.1).

Table 4.1

**Probability of CU Gift and Non-Gift Clothing Expenditures**

	CU Expenditures on Adult Clothing			CU Expenditures on Infant Clothing		
	Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
Gift	58.00	7,550	0.1044	46.28	4,743	0.4791
Non-Gift	68.92	54,499	0.8956	83.69	2,851	0.5209
Average/Total	67.59	62,049	1	60.33	7,594	1

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.

### **Gender**

For expenditures on adult clothing, the mean expenditure for CUs with male heads at \$69.96 was slightly higher than the mean expenditures for CUs with female heads at \$64.90. Also, the number of purchase events for clothing in general was higher for CUs with male heads than for CUs with female heads. For infant clothing, CUs with male heads spent slightly more than CUs with female headed (mean expenditure dollar amount) for each purchase event with the mean expenditures for CUs with male heads at \$60.89 and the mean expenditures for CUs with female heads at \$59.69. For both adult and infant clothing, CUs with male heads had a higher probability of purchasing clothing than CUs with heads. Therefore, it can be concluded that CUs

with male heads spent and purchased more than CUs with female heads (see Table 4.2).

Table 4.2

Probability of CU Clothing Expenditures for CUs with Heads of Certain Genders

CU Heads by Gender	CU Expenditures on Adult Clothing			CU Expenditures on Infant Clothing		
	Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
Male-headed CUs	69.96	32,974	0.5500	60.89	4,028	0.5353
Female-headed CUs	64.90	29,075	0.4500	59.69	3,566	0.4647
Average/Total	67.59	62,049	1	60.33	7,594	1

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.

### **Ethnicity**

The analysis revealed that for CUs purchasing adult clothing and infant clothing CUs with European heads tended to have the highest probability of purchasing clothing among the CUs studied (see Table 4.3), i.e., CUs with European heads had the largest number of purchase events for adult and infant clothing. However, per purchase event, CUs with African American heads' mean expenditure was the highest for adult clothing (\$70.02), as well as for infant clothing (\$74.20). The lowest mean expenditure on infant clothing was by CUs with European heads CUs (\$55.07), and the lowest mean expenditure on adult clothing was by CUs with Hispanic heads (\$61.30).

### **Age**

Analysis of the data broken down by age group indicated that for the CUs purchasing adult clothing, CUs with heads ages 25~34, 35~44, and 45~54 had the largest number of purchase events when compared to other age groups. However, when comparing mean expenditures these groups' mean expenditures of \$62.51, \$65.40, and \$75.61, respectively, were not higher than the

Table 4.3

## Probability of CU Clothing Expenditures for CUs with Heads of Certain Ethnicities

CU Heads by Ethnicity	CU Expenditures on Adult Clothing			CU Expenditures on Infant Clothing		
	Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
European-headed CUs	68.67	40,664	0.6658	55.07	4,495	0.5404
Hispanic-headed CUs	61.30	8,871	0.1297	65.06	1,540	0.2187
African American-headed CUs	70.02	8,734	0.1458	74.20	1,050	0.1700
Asian-headed CUs	65.12	3,780	0.0587	63.85	509	0.0709
Average/Total	67.59	62,049	1	60.33	7,594	1

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.

mean expenditures of CUs with other heads ages except CUs with heads ages 45~54 which had the highest mean expenditure on adult clothing of all ages of CUs heads. Notably, CUs with heads ages 14~19 and CUs with heads ages over 75 did not purchase much clothing in the infant clothing category (108 purchase events and 183 purchase events) relative to the CUs with other the heads ages. And, interestingly, CUs with heads ages 14~19 and 20~24 had the largest dollar amount based on mean expenditures for each purchase event. Based on the mean expenditures and number of purchase events, CUs with heads ages 25~34, 35~44, 45~54, and 55~64 had the largest probability of clothing purchase for both adult and infant clothing (see Table 4.4).

### **The Probability of CU Clothing Gift Expenditures**

#### **Gender and Gift Expenditures**

According to Caplow (1982), Cheal (1986), and Fischer and Arnold (1990), women engage in the highest rate of gift giving while men engage in more expensive gift giving. This is based on previous family life style research in which women take the most responsibility for gift giving in their families (Areni, Kiecker, & Palan, 1998). Based on the 2001 CEX data and a CU

Table 4.4

## Probability of CU Clothing Expenditures for CUs with Heads of Certain Ages

Age of CU Heads	CU Expenditures on Adult Clothing			CU Expenditures on Infant Clothing		
	Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
CU Heads Ages 14~19	67.11	419	0.0067	75.00	108	0.0177
CU Heads Ages 20~24	65.40	2,815	0.0439	76.02	534	0.0886
CU Heads Ages 25~34	62.51	11,419	0.1702	68.97	2,303	0.3468
CU Heads Ages 35~44	65.40	17,196	0.2681	62.77	1,824	0.2499
CU Heads Ages 45~54	75.61	13,953	0.2516	51.60	1,212	0.1365
CU Heads Ages 55~64	70.23	8,530	0.1428	48.15	1,011	0.1062
CU Heads Ages 65~74	64.40	5,189	0.0797	44.90	419	0.0411
CU Heads Ages 75+	61.27	2,528	0.0369	33.10	183	0.0132
Average/Total	67.59	62,049	1	60.33	7,594	1

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.

perspective, however, CUs with male heads had a higher rate of purchase events as well as higher mean expenditure for both the adult and infant clothing categories (see Table 4.5).

The number of events for non-gift purchases is much higher than the number of events for gift purchases for adult clothing in both CUs with male and female heads. Therefore, the probability of purchasing clothing as a gift is relatively low compared to purchasing clothing for non-gift purposes for both CUs with male and female heads.

Interestingly, for both CUs with male and female heads, the number of gift purchase events for infant clothing is much higher than non-gift purchase events, with clothing gift purchase events 62.24% higher than non-gift purchase events for CUs with male heads and with the clothing gift purchase events 71.18% higher than non-gift purchase events for CUs with female heads. However, the mean expenditure expresses an opposite relationship. For CUs with male heads, the mean expenditure for each purchase event for gifts of infant clothing was \$48.51, while



the mean expenditure for each purchase event for non-gift infant clothing was \$80.97. Likewise, for CUs with female heads the mean expenditure for each purchase event for gifts of infant clothing was \$43.81, while the mean expenditure for each purchase event for non-gift infant clothing was \$86.87. The probability of gift giving and non-gift giving in regards to infant clothing expenditures overall is .2638 and .2714 for CUs with male heads and .2152 and .2495 for CUs with female heads (see Table 4.5).

Table 4.5

**Probability of CU Clothing Gift Expenditures for CUs with Heads of Certain Genders**

CU Heads by Gender		CU Expenditures on Adult Clothing Gifts			CU Expenditures on Infant Clothing Gifts		
		Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
Male-headed CUs	Gift	61.17	3,957	0.0577	48.51	2,492	0.2638
	Non-Gift	71.16	29,017	0.4923	80.97	1,536	0.2714
	Total	69.96	32,974	0.5500	60.89	4,028	0.5353
Female-headed CUs	Gift	54.51	3,593	0.0467	43.81	2,251	0.2152
	Non-Gift	66.37	25,482	0.4033	86.87	1,315	0.2495
	Total	64.90	29,075	0.4500	59.69	3,566	0.4647
Average/Total	Gift	58.00	7,550	0.1044	46.28	4,743	0.4791
	Non-Gift	68.92	54,499	0.8956	83.69	2,851	0.5209
	Total	67.59	62,049	1	60.33	7,594	1

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.

**Ethnicity and Gift Expenditures**

For adult clothing, CUs with European heads had the second lowest mean expenditure level for each purchase event (\$58.53), but the largest number of purchase events. They also had the highest probability (.0763) of purchasing adult clothing for a gift of the ethnically designated CUs. CUs with Hispanic heads and CUs with African American-heads had a similar probability for purchasing adult clothing (.0111 and .0106, respectively), while CUs with Asian heads had the

lowest probability (.0064). Similar to the expenditures on adult clothing, the results indicated that for infant clothing gift giving, CUs with European heads tended to spend less on average per infant clothing gift, but had demonstrated a high number of purchase events. As a result, the probability of CUs with European heads purchasing infant clothing gifts was much higher (.2930) than the CUs with other heads ethnicities (see Table 4.6).

Table 4.6

Probability of CU Clothing Gift Expenditures for CUs with Heads of Certain Ethnicities

Ethnicity of CU heads		CU Expenditures on Adult Clothing Gifts			CU Expenditures on Infant Clothing Gifts		
		Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
European-headed CUs	Gift	58.53	5,470	0.0763	43.27	3,103	0.2930
	Non-Gift	70.24	35,194	0.5895	81.34	1,392	0.2473
	Total	68.67	40,664	0.6658	55.07	4,495	0.5404
Hispanic-headed CUs	Gift	51.35	909	0.0111	49.80	751	0.0816
	Non-Gift	62.44	7,962	0.1185	79.59	789	0.1370
	Total	61.30	8,871	0.1297	65.06	1,540	0.2187
African American headed CUs	Gift	61.53	720	0.0106	52.37	568	0.0649
	Non-Gift	70.78	8,014	0.1353	99.93	482	0.1051
	Total	70.02	8,734	0.1458	74.20	1,050	0.1700
Asian-headed CUs	Gift	59.42	451	0.0064	56.32	321	0.0395
	Non-Gift	65.89	3,329	0.0523	76.69	188	0.0315
	Total	65.12	3,780	0.0587	63.85	509	0.0709
Average/Total	Gift	58.00	7,550	0.1044	46.28	4,743	0.4791
	Non-Gift	68.92	54,499	0.8956	83.69	2,851	0.5209
	Total	67.59	62,049	1	60.33	7,594	1

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.

### **Age and Gift Expenditures**

According to *Household Spending* (2004), CUs with heads ages 55 to 64 had the highest mean expenditure for gift giving in both adult and infant clothing. Also, Steinberg and Wilhelm (2003) suggested that people's ages go up they tend to give more gifts than their younger counterparts. Interestingly, based on the results from the 2001 CEX data, CUs with heads ages 25~34 had the largest mean expenditures for adult clothing (\$65.64) and CUs with heads ages 14~19 had the largest mean expenditures for infant clothing (\$53.19). However, CUs with heads ages 45~54 had the highest probability of gift giving in regards to adult clothing (.0266) and the largest number of purchase events in that clothing category. CUs with heads ages 35~44 had the highest probability of gift giving in regards to infant clothing (.1106) and the largest number of purchase events in that clothing category (see Table 4.7).

### **The Conditional Probability of CU Clothing Gift Expenditures**

As Bayesian analysis distributes the data  $y$ , given the unobservable parameters  $\theta$ ,  $P(y|\theta)$  (Rossi & Allenby, 2003), the estimated probability of clothing expenditures for gift giving based on gender, ethnicity, and age. The first probabilities estimate the probability that if a gift has been purchased what the conditional probability is that CUs with heads of certain genders, ethnicity, and age will have made that purchase. More specifically, the conditional probabilities are: (1)  $P(\text{Clothing Gift Expenditures by CUs with Heads of Certain Genders} \mid \text{Clothing Gift Expenditures})$ , which is the conditional probability of clothing gift expenditures by CUs with heads of certain genders given that a clothing gift has been purchased; (2)  $P(\text{Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities} \mid \text{Clothing Gift Expenditures})$  which is the conditional probability of clothing gift expenditures by CUs with heads of certain ethnicities given that a clothing gift has been purchased; and (3)  $P(\text{Clothing Gift Expenditures by CUs with Heads of Certain Ages} \mid \text{Clothing Gift Expenditures})$  which is the conditional probability of

Table 4.7

## Probability of CU Clothing Gift Expenditures by CUs with Heads of Certain Ages

Age of CU Heads		CU Expenditures on Adult Clothing Gifts			CU Expenditures on Infant Clothing Gifts		
		Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
CU Heads Ages 14~19	Gift	58.32	34	0.0005	53.19	54	0.0063
	Non-Gift	67.89	385	0.0062	96.81	54	0.0114
	Total	67.11	419	0.0067	75.00	108	0.0177
CU Heads Ages 20~24	Gift	63.95	294	0.0045	52.96	204	0.0236
	Non-Gift	65.57	2,521	0.0394	90.28	330	0.0650
	Total	65.40	2,815	0.0439	76.02	534	0.0886
CU Heads Ages 25~34	Gift	65.64	1,000	0.0157	50.12	906	0.0991
	Non-Gift	62.21	10,419	0.1546	81.19	1,391	0.2477
	Total	62.51	11,419	0.1702	68.97	2,303	0.3468
CU Heads Ages 35~44	Gift	53.32	1,413	0.0180	46.37	1,093	0.1106
	Non-Gift	66.48	15,783	0.2502	87.28	731	0.1392
	Total	65.40	17,196	0.2681	62.77	1,824	0.2499
CU Heads Ages 45~54	Gift	61.91	1,804	0.0266	45.40	970	0.0961
	Non-Gift	77.65	12,149	0.2250	76.49	242	0.0404
	Total	75.61	13,953	0.2516	51.60	1,212	0.1365
CU Heads Ages 55~64	Gift	53.34	1,567	0.0199	45.06	924	0.0909
	Non-Gift	74.03	6,963	0.1229	80.97	87	0.0154
	Total	70.23	8,530	0.1428	48.15	1,011	0.1062
CU Heads Ages 65~74	Gift	56.04	1,008	0.0135	44.26	415	0.0401
	Non-Gift	66.41	4,181	0.0662	111.50	4	0.0010
	Total	64.40	5,189	0.0797	44.90	419	0.0411
CU Heads Ages 75+	Gift	56.69	430	0.0058	32.16	177	0.0124
	Non-Gift	62.21	2,098	0.0311	61.00	6	0.0008
	Total	61.27	2,528	0.0369	33.10	183	0.0132
Average/Total	Gift	58.00	7,550	0.1044	46.28	4,743	0.4791
	Non-Gift	68.92	54,499	0.8956	83.69	2,851	0.5209
	Total	67.59	62,049	1	60.33	7,594	1

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.<sup>2</sup> Number of purchase events.

clothing gift expenditures by CUs with heads of certain ages given that a clothing gift has been purchased.

The second set of probabilities estimates the conditional probability that if CUs with heads of certain genders, ethnicities, and ages have made a clothing purchase that that purchase will be a gift. More specifically, the conditional probabilities are: (4)  $P(\text{Clothing Gift Expenditures} \mid \text{Clothing Purchase by CUs with Heads of Certain Genders})$  which is the conditional probability of clothing gift expenditures given that a clothing purchase has been made by CUs heads of certain genders; (5)  $P(\text{Clothing Gift Expenditures} \mid \text{Clothing Purchase by CUs with Heads of Certain Ethnicities})$  which is the conditional probability of clothing gift expenditures given that a clothing purchase has been made by CUs with heads of certain ethnicities ; and (6)  $P(\text{Clothing Gift Expenditures} \mid \text{Clothing Purchase by CUs with Heads of Certain Ages})$  which is the conditional probability of clothing gift expenditures given that a clothing purchase has been made by CUs with heads of certain ages.

The third set of probabilities estimates the conditional probability of clothing gift expenditures given the joint occurrence of two demographic variables (gender and ethnicity of CU head; gender and age of CU head; ethnicity and age of CU head). More specifically, the conditional probabilities are: (7)  $P(\text{Clothing Gift Expenditures} \mid \text{Clothing Purchase by CUs with Heads of Certain Genders and Ethnicities})$  which is the conditional probability of clothing gift expenditures given the joint occurrence of CUs with heads of certain genders and ethnicities and given a clothing purchase; (8)  $P(\text{Clothing Gift Expenditures} \mid \text{Clothing Purchase by CUs with Heads of Certain Genders and Ages})$  which is the conditional probability of clothing gift expenditures given the joint occurrence of CUs with heads of certain genders and ages and given a clothing purchase; and (9)  $P(\text{Clothing Gift Expenditures} \mid \text{Clothing Purchase by CUs with Heads of Certain Ethnicities and Ages})$  which is the conditional probability of clothing gift

expenditures given the joint occurrence of CUs with heads of certain ethnicities and ages and given a clothing purchase.

**The Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages Given That a Clothing Gift Has Been Purchased**

***P(Clothing Gift Expenditures by CUs with Heads of Certain Genders | Clothing Gift Expenditures)***

$P(\text{Clothing Gift Expenditures by CUs with Heads of Certain Genders} \mid \text{Clothing Gift Expenditures})$  estimates the conditional probability of clothing gift expenditures by a CU with male or female heads given that a clothing gift has been purchased. As shown in Table 4.5 the univariate probability of clothing expenditures for gift giving for CUs with male heads was .0577 and for CUs with female heads was .0467 in the purchasing of adult clothing and .2638 and .2152 for infant clothing when considering gift and non-gift expenditures. However, given the condition that an adult clothing gift has been purchased, the conditional probability of an adult clothing gift being purchased by CUs with male heads was .5527 and by CUs with female heads was .4473. Given the condition that an infant clothing gift has been purchased, the conditional probability of an infant clothing gift being purchased by CUs with male heads was .5507 and by CUs with female heads was .4493. For both adult and infant clothing, the conditional probability of CUs purchasing clothing as a gift was higher for CUs with male heads than CUs with female heads (see Table 4.8).

***P(Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities | Clothing Gift Expenditures)***

$P(\text{Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities} \mid \text{Clothing Gift Expenditures})$  which is the conditional probability of clothing gift expenditures by CUs with heads of certain ethnicities given that a clothing gift has been purchased. Table 4.9 presents the calculated conditional probabilities for clothing gift expenditures by CUs with heads of certain ethnicities given that a clothing gift has been purchased. For both adult and infant clothing, CUs

Table 4.8

The Conditional Probability of Clothing Gift Expenditures by CUs with Heads of Certain Genders Given the Purchase of a Clothing Gift

CUs with Male or Female Heads	CU Expenditures on Adult Clothing Gifts			CU Expenditures on Infant Clothing Gifts		
	Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
Male-headed CUs	61.17	3,957	0.5527	48.51	2,492	0.5507
Female-headed CUs	54.51	3,593	0.4473	43.81	2,251	0.4493
Gift Average/Total	58.00	7,550	1	46.28	4,743	1

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.

with European heads had the highest conditional probability of purchasing a clothing gift at .7311 and .6117, respectively, given that a clothing gift had been purchased. CUs with Asian heads had the lowest conditional probability of purchasing both adult and infant clothing gifts at .0612 and .0824, respectively, given that a clothing gift had been purchased. The conditional probability for CUs with Asians heads was higher for infant clothing gifts than adult clothing gifts, and the

Table 4.9

The Conditional Probability of Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities Given the Purchase of a Clothing Gift

CUs with Heads of Certain Ethnicities	CU Expenditures on Adult Clothing Gifts			CU Expenditures on Infant Clothing Gifts		
	Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
European-headed CUs	58.53	5,470	0.7311	43.27	3,103	0.6117
Hispanic-headed CUs	51.35	909	0.1066	49.80	751	0.1704
African-American headed CUs	61.53	720	0.1012	52.37	568	0.1355
Asian-headed CUs	59.42	451	0.0611	56.32	321	0.0824
Gift Average/Total	58.00	7,550	1	46.28	4,743	1

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.

conditional probability for CUs with Europeans heads was higher for adult clothing gifts than for infant clothing gifts (please see Tables 4.6 and 4.9 for a comparison of simple probabilities).

***P(Clothing Gift Expenditures by CUs with Heads of Certain Ages | Clothing Gift Expenditures)***

P(Clothing Gift Expenditures by CUs with Heads of Certain Ages | Clothing Gift Expenditures) which is the conditional probability of clothing gift expenditures by CUs with heads of certain ages given that a clothing gift has been purchased. Table 4.10 shows that CUs with heads ages 45~54 had the highest conditional probability of purchasing a clothing gift if a clothing gift had been purchased. For infant clothing, CUs with heads ages 35~44 had the highest conditional probability of purchasing a clothing gift if a clothing gift had been purchased. For both adult and infant clothing, CUs with heads ages 14~19 had the lowest conditional probability of purchasing a clothing gift if a clothing gift had been purchased.

Table 4.10

The Conditional Probability of Clothing Gift Expenditures by CUs with Heads of Certain Ages Given the Purchase of a Clothing Gift

CUs with Heads of Certain Ages	CU Expenditures on Adult Clothing Gifts			CU Expenditures on Infant Clothing Gifts		
	Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
CUs with heads Ages 14~19	58.32	34	0.0045	53.19	54	0.0131
CUs with heads Ages 20~24	63.95	294	0.0429	52.96	204	0.0492
CUs with heads Ages 25~34	65.64	1,000	0.1499	50.12	906	0.2069
CUs with heads Ages 35~44	53.32	1,413	0.1720	46.37	1,093	0.2309
CUs with heads Ages 45~54	61.91	1,804	0.2551	45.40	970	0.2006
CUs with heads Ages 55~64	53.34	1,567	0.1909	45.06	924	0.1897
CUs with heads Ages 65~74	56.04	1,008	0.1290	44.26	415	0.0837
CUs with heads Ages 75+	56.69	430	0.0557	32.16	177	0.0259
Gift Average/Total	58.00	7,550	1	46.28	4,743	1

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.



**The Conditional Probability of Clothing Gift Expenditures Given That Clothing Purchases Have Been Made by CUs with Heads of Certain Genders, Ethnicities, and Ages**

*P(Clothing Gift Expenditures | Clothing Purchase by CUs with Heads of Certain Genders)*

P(Clothing Gift Expenditures | Clothing Purchase by CUs with Heads of Certain Genders) which is the conditional probability of clothing gift expenditures given that a clothing purchase has been made by a CU with a male or female head. Table 4.11 presents the calculated conditional probabilities. For the CUs purchasing adult clothing, the conditional probability of gift clothing expenditures given the purchase of adult clothing by CUs with male heads was slightly higher than CUs with female heads at .1049 and .1038, respectively. For CUs purchasing infant clothing, CUs with male and female heads had similar probabilities of purchasing clothing as a gift at .4929 and .4631, respectively.

Table 4.11

The Conditional Probability of Clothing Gift Expenditures by CUs with Heads of Certain Genders Given a Clothing Purchase

CUs with Heads of Certain Gender	CU Expenditures on Adult Clothing Gifts			CU Expenditures on Infant Clothing Gifts		
	Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
Male-headed CUs	61.17	3,957	0.1049	48.51	2,492	0.4929
Female-headed CUs	54.51	3,593	0.1038	43.81	2,251	0.4631
Gift Average/Total	58.00	7,550	0.1044	46.28	4,743	0.4791

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.

***P(Clothing Gift Expenditures | Clothing Purchase by CUs with Heads of Certain Ethnicities)***

P(Clothing Gift Expenditures | Clothing Purchase by CUs with Heads of Certain Ethnicities) which is the conditional probability of clothing gift expenditures given that a clothing purchase has been made by a CU with a male or female head. As shown previously in Table 4.9, for both adult and infant clothing, CUs with European heads had the highest conditional probability of purchasing a clothing gift at .7311 and .6117, respectively, given that a clothing gift had been purchased.

However, given the condition that CUs with heads of certain ethnicities purchase a clothing gift, Table 4.12 presents the calculated conditional probabilities for clothing gift expenditure given that clothing purchases have been made by CUs with heads of certain ethnicities. For adult clothing, CUs with European heads had the highest conditional probability of purchasing adult clothing gifts at .1147, and CUs with Asian heads had the second highest conditional probability of purchasing adult clothing gifts at .1089, respectively, given that clothing had been purchased. However, CUs with Asian heads had the highest conditional probability of purchasing infant clothing gifts at .5563, and CUs with European heads had the second highest conditional probability of purchasing infant clothing gifts at .5423, respectively. The conditional probability of CU heads purchasing a clothing gift given a clothing purchase was higher for all ethnicities in the infant clothing gift category (please see Table 4.9 for a comparison of conditional probabilities).

***P(Clothing Gift Expenditures | Clothing Purchase by CUs with Heads of Certain Ages)***

P(Clothing Gift Expenditures | Clothing Purchase by CUs with Heads of Certain Ages) which is the conditional probability of clothing gift expenditures given that a clothing purchase has been made by CUs with heads of certain ages. As shown in previous Table 4.10, for adult clothing CUs with heads of ages 45~54 had the highest conditional probability of purchasing a

Table 4.12

The Conditional Probability of Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities Given a Clothing Purchase

CUs Heads by Ethnicity	CU Expenditures on Adult Clothing Gifts			CU Expenditures on Infant Clothing Gifts		
	Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
European-headed CUs	58.53	5,470	0.1147	43.27	3,103	0.5423
Hispanic-headed CUs	51.35	909	0.0858	49.80	751	0.3733
African American-headed CUs	61.53	720	0.0724	52.37	568	0.3818
Asian-headed CUs	59.42	451	0.1089	56.32	321	0.5563
Gift Average/Total	58.00	7,550	0.1044	46.28	4,743	0.4791

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.

clothing gift at .2551 if a clothing gift had been purchased. For infant clothing, CUs with heads ages 35~44 had the highest conditional probability of purchasing a clothing gift at .2309 if a clothing gift had been purchased. For both adult and infant clothing, CUs with heads ages 14~19 had the lowest probability of purchasing a clothing gift at .0045 and .0131, respectively, if a clothing gift has been purchased.

However, Table 4.13 presents the calculated conditional probabilities for clothing gift expenditures given that clothing purchases have been made by CUs with heads of certain ages. CUs with heads ages 65~74 had the highest conditional probability of purchasing both adult and infant clothing gifts at .1691 and .9763, respectively, given that a clothing gift has been purchased. However, CUs with older heads ages 45 to over 75 had much higher conditional probabilities of purchasing infant clothing gifts at .70 and higher. As Table 4.13 shows, CUs with heads ages 65~74 and CUs with heads over 75 demonstrated probabilities over ninety percent at .9763 and .9396 for the infant clothing category. Interestingly, CUs with younger heads had higher mean expenditures than the mean expenditures of CUs with older heads (see Table 4.13).

Table 4.13

The Conditional Probability of Clothing Gift Expenditures by CUs with Heads of Certain Ages Given a Clothing Purchase

CUs with heads Ages	CU Expenditures on Adult Clothing Gifts			CU Expenditures on Infant Clothing Gifts		
	Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
CUs with heads Ages 14~19	58.32	34	0.0705	53.19	54	0.3546
CUs with heads Ages 20~24	63.95	294	0.1021	52.96	204	0.2661
CUs with heads Ages 25~34	65.64	1,000	0.0920	50.12	906	0.2858
CUs with heads Ages 35~44	53.32	1,413	0.0670	46.37	1,093	0.4427
CUs with heads Ages 45~54	61.91	1,804	0.1059	45.40	970	0.7040
CUs with heads Ages 55~64	53.34	1,567	0.1395	45.06	924	0.8553
CUs with heads Ages 65~74	56.04	1,008	0.1691	44.26	415	0.9763
CUs with heads Ages 75+	56.69	430	0.1574	32.16	177	0.9396
Gift Average/Total	58.00	7,550	0.1044	46.28	4,743	0.4791

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.

### Conditional Probability of Clothing Gift Expenditures Given the Joint Occurrence of Two Demographic Variables (Gender and Ethnicity; Gender and Age; Ethnicity and Age)

#### *P(Clothing Gift Expenditures | Clothing Purchase by CUs with Heads of Certain Genders and Ethnicities)*

P(Clothing Gift Expenditures | Clothing Purchase by CUs with Heads of Certain Genders and Ethnicities) which is the conditional probability of clothing gift expenditures given that the joint occurrence of CUs with heads of certain genders and ethnicities and given a clothing purchase. Table 4.14 presents the calculated conditional probabilities for clothing gift expenditures given that clothing purchases have been made by joint occurrence of CUs with heads of certain genders and ethnicities and given a clothing purchase. For CUs with male heads,

CUs with Asian heads had the highest conditional probability of purchasing both adult and infant clothing gifts at .1116 and .5620, respectively, given that a clothing purchase has been made. For CUs with female heads, however, CUs with European heads had the highest conditional probability of purchasing both adult and infant clothing gifts at .1200 and .5523, respectively, given that a clothing purchase has been made. For both CUs with male and female heads, CUs with European and Asian heads had higher conditional probabilities of purchasing both adult and infant clothing gifts (see Table 4.14).

Table 4.14

The Conditional Probability of Clothing Gift Expenditures Given the Joint Occurrence of CUs with Heads of Certain Genders and Ethnicities and Given a Clothing Purchase

CUs Headed by Gender	CUs Heads by Ethnicity	CU Expenditures on Adult Clothing Gifts			CU Expenditures on Infant Clothing Gifts		
		Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
Male-headed CUs	European-headed CUs	62.45	2,911	0.1109	46.56	1,733	0.5359
	Hispanic-headed CUs	51.10	478	0.0866	51.57	358	0.3497
	African American-headed CUs	66.23	284	0.0806	49.33	214	0.4799
	Asian-headed CUs	59.90	284	0.1116	59.83	187	0.5620
Female-headed CUs	European-headed CUs	54.06	2,559	0.1200	39.12	1,370	0.5523
	Hispanic-headed CUs	51.62	431	0.0849	48.19	393	0.3995
	African American-headed CUs	58.47	436	0.0674	54.21	354	0.3432
	Asian-headed CUs	58.60	167	0.1044	51.43	134	0.5475
Gift Average/Total		58.00	7,550	0.1044	46.28	4,743	0.4791

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.

***P(Clothing Gift Expenditures | Clothing Purchase by CUs with Heads of Certain Genders and Ages)***

P(Clothing Gift Expenditures | Clothing Purchase by CUs with Heads of Certain Genders and Ages) which is the conditional probability of clothing gift expenditures given the joint occurrence of CUs with head of certain genders and ages and given a clothing purchase. Table 4.15 presents the calculated conditional probabilities. For CUs with male heads, CUs with heads ages 65~74 had the highest conditional probability of purchasing both adult and infant clothing gifts at .1703 and .9912, respectively, given that a clothing purchase has been made.

For CUs with female heads, CUs with heads ages 65~74 also had the highest conditional probability of purchasing adult clothing gifts at .1676. However, if CUs with female heads over 75 purchased infant clothing, all infant clothing expenditures were gifts.

Notably, for CUs with male and female heads, CUs with older heads had higher conditional probabilities of purchasing adult and infant clothing gifts than CUs with younger heads given a clothing purchase. If CUs with older heads purchased infant clothing, for CUs with male and female heads, the conditional probability of purchasing infant clothing gifts was over .80 given a clothing purchase. However, CUs with female heads ages 14~19 had the highest mean expenditures at \$69.48 for adult clothing and \$56.22 for infant clothing, while having the lowest number of purchase events in comparison to CUs with heads in other age groups. Given a clothing purchase, CUs with female heads ages 14~19 had a slightly higher conditional probability of purchasing infant clothing gifts at .3580 in comparison to CUs with female heads ages 20~24(.2361) and 25~34(.2943), respectively (see Table 4.15).

***P(Clothing Gift Expenditures | Clothing Purchase by CUs with Heads of Certain Ethnicities and Ages)***

P(Clothing Gift Expenditures | Clothing Purchase by CUs with Heads of Certain Ethnicities and Ages) which is the conditional probability of a clothing gift expenditure given the joint

Table 4.15

The Conditional Probability of Clothing Gift Expenditures Given the Joint Occurrence of CUs with Heads of Certain Genders and Ages and Given a Clothing Purchase

CUs Headed by Gender	CUs with Heads Ages	CU Expenditures on Adult Clothing Gifts			CU Expenditures on Infant Clothing Gifts		
		Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
Male-Headed CUs	Ages 14~19	27.33	9	0.0351	38.00	9	0.3314
	Ages 20~24	67.26	120	0.0979	49.90	92	0.3214
	Ages 25~34	74.36	542	0.1082	52.93	466	0.2785
	Ages 35~44	53.68	759	0.0391	51.47	573	0.4496
	Ages 45~54	66.83	928	0.0980	45.25	510	0.7466
	Ages 55~64	53.72	863	0.1288	43.34	542	0.8008
	Ages 65~74	58.87	538	0.1703	54.03	221	0.9912
	Ages 75+	63.82	198	0.1652	41.62	79	0.9384
Female-headed CUs	Ages 14~19	69.48	25	0.0823	56.22	45	0.3580
	Ages 20~24	61.67	174	0.1056	55.47	112	0.2361
	Ages 25~34	55.33	458	0.0742	47.15	440	0.2948
	Ages 35~44	52.90	654	0.0647	40.76	520	0.4335
	Ages 45~54	56.71	876	0.1176	45.56	460	0.6625
	Ages 55~64	52.88	704	0.1557	47.49	382	0.9380
	Ages 65~74	52.81	470	0.1676	33.13	194	0.9498
	Ages 75+	50.60	232	0.1497	25.54	100	1.0000
Gift Average/Total		58.00	7,550	0.1044	46.28	4,743	0.4791

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events

occurrence of CUs with heads of certain ethnicities and ages and given a clothing purchase. Table 4.16 presents the calculated conditional probabilities for clothing gift expenditures given the joint occurrence of CUs with heads of certain ethnicities and ages and given clothing purchases have been made. For CUs with European heads, age groups 55~64, 65~74, and over 75 had the highest conditional probability of purchasing adult clothing gifts at .1571, .1680, and .1450, respectively, given that a clothing gift has been purchased. Interestingly, for CUs with European heads, if CUs with heads ages 65~74 and over 75 purchased infant clothing, all of those purchases were for gifts. Also, CUs with European heads, ages 14~19 had a much higher conditional probability of purchasing infant clothing gifts at .5740 relative to CUs with heads ages 20~24 (.2750), and 25~34 (.2723), respectively.

Similar to the CUs with European heads, the results indicated that CUs with older Hispanic and African-American heads had higher conditional probabilities of purchasing both adult and infant clothing gifts, respectively, given that a clothing gift has been purchased—with one exception. Interestingly, CUs with Asian heads ages 14~19 had the highest conditional probability of purchasing infant clothing gifts. If these CUs purchased infant clothing, all infant clothing purchased was for gifts. Generally, for CUs with heads of most ethnicities (except Asian), CUs with older heads had higher conditional probabilities of purchasing both adult and infant clothing gifts than CUs with younger heads. Also, for most ethnicities CUs with heads ages 14~19 had somewhat higher mean expenditures for infant clothing than CUs with heads of other ages. For CUs with Hispanic heads over 75, all infant clothing purchased was for gifts (see Table 4.16).

### **ANOVA Test**

#### **Mean Clothing Expenditures**

Based on the ANOVA results, mean gift and non-gift expenditures for the adult and infant clothing categories were found to be significantly different at  $p \leq .05$ , meaning that non-gift



Table 4.16

The Conditional Probability of Clothing Gift Expenditures Given the Joint Occurrence of CUs with Heads of Certain Ethnicities and Ages and Given a Clothing Purchase

CUs Headed by Ethnicity	CUs with Heads Ages	CU Expenditures on Adult Clothing Gifts			CU Expenditures on Infant Clothing Gifts		
		Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
European-headed CUs	Ages 14~19	55.48	21	0.0692	35.97	33	0.5740
	Ages 20~24	65.97	188	0.1261	40.54	104	0.2750
	Ages 25~34	73.44	551	0.1061	45.96	476	0.2723
	Ages 35~44	50.15	978	0.0693	42.35	653	0.4595
	Ages 45~54	62.80	1,380	0.1133	41.17	659	0.7766
	Ages 55~64	53.77	1,312	0.1571	46.02	745	0.9316
	Ages 65~74	59.66	690	0.1680	44.59	290	1.0000
	Ages 75+	53.42	350	0.1450	34.88	143	1.0000
Hispanic-headed CUs	Ages 14~19	75.56	9	0.2157	98.27	15	0.4761
	Ages 20~24	48.67	46	0.0668	55.32	65	0.2849
	Ages 25~34	58.23	175	0.0619	59.86	232	0.3338
	Ages 35~44	51.61	216	0.0648	46.18	203	0.3461
	Ages 45~54	54.46	170	0.0891	40.88	113	0.4544
	Ages 55~64	45.58	134	0.1562	45.80	55	0.7023
	Ages 65~74	35.91	112	0.2220	33.37	51	0.9414
	Ages 75+	64.49	47	0.3261	13.47	17	1.0000
African American-headed CUs	Ages 14~19	26.50	2	0.0091	41.00	4	0.0568
	Ages 20~24	75.83	52	0.0934	86.77	22	0.1716
	Ages 25~34	53.65	198	0.0843	38.56	108	0.1680
	Ages 35~44	72.76	120	0.0486	60.76	168	0.5130
	Ages 45~54	64.01	120	0.0661	62.49	123	0.6785
	Ages 55~64	55.81	88	0.0623	40.86	84	0.6589
	Ages 65~74	50.85	110	0.1172	43.77	44	0.8500
	Ages 75+	83.30	30	0.2266	17.13	15	0.6314
Asian-headed CUs	Ages 14~19	42.50	2	0.0370	23.50	2	1.0000
	Ages 20~24	27.00	8	0.0216	83.31	13	0.7144
	Ages 25~34	57.47	76	0.1044	60.88	90	0.4499
	Ages 35~44	64.84	99	0.0989	50.00	69	0.4712
	Ages 45~54	60.39	134	0.1152	61.28	75	0.7517
	Ages 55~64	53.33	33	0.0630	34.95	40	0.4540
	Ages 65~74	59.48	96	0.2457	60.30	30	1.0000
	Ages 75+	49.00	3	0.0260	109.00	2	0.5023
Gif Average/Total		58.00	7,550	0.1044	46.28	4,743	0.4791

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure dollars for each purchase event.

<sup>2</sup> Number of purchase events.

mean expenditures for adult clothing at \$68.92 and for infant clothing at \$83.69 differed significantly from gift mean expenditures for adult clothing at \$58.00 and for infant clothing at \$46.28 based on purchase event (see Table 4.17).

Table 4.17

ANOVA Test: Mean Clothing Expenditures for Gifts/Non-Gifts Based on Clothing Purchase Event

		Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>
For Adult Clothing	Between Groups	790317.657	1	790317.657	57.346	.000
	Within Groups	855100125.660	62,047	13781.490		
	Total	855890443.317	62,048			
For Infant Clothing	Between Groups	2496362.822	1	2496362.822	466.123	.000
	Within Groups	40659635.944	7,592	5355.590		
	Total	43155998.765	7,593			

Note:  $p \leq .05$ ;  $\mu$  = mean

$\mu$  expenditures for adult clothing: gift = \$58.00; non-gift = \$68.92

$\mu$  expenditures for infant clothing: gift = \$46.28; non-gift = \$83.69

Numbers of adult clothing purchases based on events: gift = 7,550; non-gift = 54,499

Numbers of infant clothing purchases based on events: gift = 4,743; non-gift = 2,851

Mean expenditures for gift and non-gift, based on actual item purchased, for the adult and infant clothing categories were also found to be significantly different at  $p \leq .05$ , meaning that non-gift mean expenditures for adult clothing at \$32.40 and for infant clothing at \$1.57 differed significantly from gift mean expenditures for adult clothing at \$33.57 and for infant clothing at \$4.50 based on the item purchased (see Table 4.18).

### **Gender**

From the previous section on probabilities (see prior Table 4.2), there did not seem to be large differences in the mean expenditures between CUs with male or female heads for both adult and infant clothing. As Table 4.19 shows, there was no statistically significant mean clothing expenditure difference for infant clothing based on clothing purchase event between CUs with male and female heads. However, the ANOVA results indicated there was a significant mean

Table 4.18

ANOVA Test: Mean Clothing Expenditures for Gifts/Non-Gifts Based on Clothing Item Purchased

		Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>
For Adult Clothing	Between Groups	2934.220	1	2394.220	20.602	.000
	Within Groups	4661406.5	40,110	116.216		
	Total	4663800.7	40,111			
For Infant Clothing	Between Groups	3688335.355	1	3688335.355	211.397	.000
	Within Groups	84375897.789	4,836	17447.456		
	Total	88064233.144	4,837			

Note:  $p \leq .05$ ;  $\mu$  = mean $\mu$  expenditures for adult clothing: gift = \$33.57; non-gift = \$32.40 $\mu$  expenditures for infant clothing: gift = \$4.50; non-gift = \$1.57

Numbers of adult clothing purchase based on item purchased: gift = 13,046; non-gift = 115,933

Numbers of infant clothing purchases based on item purchased: gift = 48,768; non-gift = 152,307

expenditure difference between CUs with male and female heads for adult clothing based on clothing purchase event. The mean expenditures show that CUs with male heads on average spent more on clothing purchases based on purchase event (see Table 4.19).

Table 4.19

ANOVA Test: Mean Clothing Expenditures by CUs with Heads of Certain Genders (Purchase Event)

		Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>
For Adult Clothing	Between Genders	394828.782	1	394828.782	28.636	.000
	Within Gender	855495614.535	62,047	13787.864		
	Total	855890443.317	62,048			
For Infant Clothing	Between Genders	2617.823	1	2617.823	.461	.497
	Within Gender	43153380.943	7,592	5684.060		
	Total	43155998.765	7,593			

Note:  $p \leq .05$ ;  $\mu$  = mean $\mu$  expenditures for adult clothing by CUs with male heads based on purchase events:

adult clothing = \$69.96; infant clothing = \$60.89

 $\mu$  expenditures for adult clothing by CUs with female heads based on purchase events:

adult clothing = \$64.90; infant clothing = \$59.69

Numbers of adult clothing purchase based on events:

male-headed CUs = 32,974; female-headed CUs = 29,075

Numbers of infant clothing purchase based on events:

male-headed CUs = 4,028; female-headed CUs = 3,566

ANOVA results indicated findings that were the reverse for mean clothing expenditures based on clothing item purchased. As Table 4.20 shows, the ANOVA results indicated that there was no significant mean expenditure difference for each adult clothing item purchased between CUs with male and female heads. However, the ANOVA test also indicated, there was a statistically significant mean expenditure difference for each infant clothing item purchased between CUs with male and female heads. The mean expenditures indicated that CUs with male heads spent more per each clothing purchase event and each clothing item purchased.

Table 4.20

ANOVA Test: Mean Clothing Expenditures by CUs with Heads of Certain Genders (Item Purchased)

		Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>
For Adult Clothing	Between Genders	242.339	1	242.339	2.084	.149
	Within Gender	4663558.339	40,110	116.269		
	Total	4663800.678	40,111			
For Infant Clothing	Between Genders	289461.436	1	289461.436	15.948	.000
	Within Gender	87774771.709	4,836	18150.284		
	Total	88064233.144	4,837			

Note:  $p \leq .05$ ;  $\mu$  = mean

$\mu$  expenditures for adult clothing by CUs with male heads based on item purchased:

adult clothing = \$33.48; infant clothing = \$2.00

$\mu$  expenditures for adult clothing by CUs with female heads based on item purchased:

adult clothing = \$31.41; infant clothing = \$2.71

Numbers of adult clothing purchase based on item purchased:

male-headed CUs = 68,899; female-headed CUs = 128,979

Numbers of infant clothing purchase based on item purchased:

male-headed CUs = 122,398; female-headed CUs = 78,677

### ***Ethnicity***

As Table 4.21 shows, the overall *F*-test indicated there were significant mean expenditure differences for each clothing purchase event between clothing expenditures by CUs with heads of certain ethnicities for both adult and infant clothing. Significant differences were found between

CUs of each ethnicity with the exception of CUs with Asian heads for both adult and infant clothing.

Table 4.21

ANOVA Test: Mean Clothing Expenditures by CUs with Heads of Certain Ethnicities (Purchase Event)

		Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>
For Adult Clothing	Between Ethnicities	472147.431	3	157382.477	11.415	.000
	Within Ethnicity	855418295.886	62,045	13787.063		
	Total	855890443.317	62,048			
For Infant Clothing	Between Ethnicities	366692.371	3	122230.790	21.681	.000
	Within Ethnicity	42789306.394	7,590	5637.590		
	Total	43155998.765	7,593			

Note:  $p \leq .05$ ;  $\mu$  = mean

$\mu$  expenditures for adult clothing by CUs with European heads based on purchase events:  
adult clothing = \$68.67; infant clothing = \$55.07

$\mu$  expenditures for adult clothing by CUs with Hispanic heads based on purchase events:  
adult clothing = \$61.30; infant clothing = \$65.06

$\mu$  expenditures for adult clothing by CUs with African American heads based on purchase events:  
adult clothing = \$70.02; infant clothing = \$74.20

$\mu$  expenditures for adult clothing by CUs with Asian heads based on purchase events:  
adult clothing = \$65.12; infant clothing = \$63.85

Numbers of adult clothing purchase based on purchase events:

CUs with European heads = 40,664; CUs with Hispanic heads = 8,871;

CUs with African American heads = 8,734; CUs with Asian heads = 3,780

Numbers of infant clothing purchase based on purchase events:

CUs with European heads = 4,495; CUs with Hispanic heads = 1,540;

CUs with African American heads = 1,050; CUs with Asian heads = 509

As Table 4.22 shows, the overall *F*-test also indicated there were significant mean expenditure differences for each clothing item purchased between clothing expenditures by CUs with heads of certain ethnicities for both adult and infant clothing. Comparing the ANOVA test results for mean expenditure differences per each clothing purchase event, the ANOVA test for meant expenditure differences per each clothing item purchased indicated significant differences between CUs of each ethnicity (except CUs with Asian heads) for adult clothing only (see Tables

4.23 and 4.24 for specific differences by CU).

Table 4.22

ANOVA Test: Mean Clothing Expenditures by CUs with Heads of Certain Ethnicities (Item Purchased)

		Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>
For Adult Clothing	Between Ethnicities	8425.983	3	2808.661	24.198	.000
	Within Ethnicity	4655374.696	40,108	116.071		
	Total	4663800.678	40,111			
For Infant Clothing	Between Ethnicities	486109.414	3	162036.471	8.944	.000
	Within Ethnicity	87578123.730	4,834	18117.113		
	Total	88064233.144	4,837			

Note:  $p \leq .05$ ;  $\mu$  = mean

$\mu$  expenditures for adult clothing by CUs with European heads based on item purchased:

adult clothing = \$35.95; infant clothing = \$2.61

$\mu$  expenditures for adult clothing by CUs with Hispanic heads based on item purchased:

adult clothing = \$22.73; infant clothing = \$1.61

$\mu$  expenditures for adult clothing by CUs with African American heads based on item purchased:

adult clothing = \$29.83; infant clothing = \$2.52

$\mu$  expenditures for adult clothing by CUs with Asian heads based on item purchases:

adult clothing = \$35.76; infant clothing = \$2.52

Numbers of adult clothing purchase based on item purchase:

CUs with European heads = 77,670; CUs with Hispanic heads = 23,923;

CUs with African American heads = 20,502; CUs with Asian heads = 6,804

Numbers of infant clothing purchase based on item purchased:

CUs with European heads = 95,001; CUs with Hispanic heads = 62,189;

CUs with African American heads = 30,968; CUs with Asian heads = 12,917

### Age

As Table 4.25 shows, the overall *F*-test indicated there were significant mean expenditure differences for each clothing purchase event between clothing expenditures by CUs with heads of certain ages for both the adult and infant clothing categories. Interestingly, CUs with heads ages 45~54 had significant mean expenditure differences with CUs with heads of most other age groups with the exception of 14~19.

Table 4.23

ANOVA Test: Significant Mean Differences on Clothing Expenditures by CUs with Heads of Certain Ethnicities (Purchase Event)

	(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	<i>P</i>	95% Confidence Interval	
						Lower Bound	Upper Bound
For Adult Clothing	European <sup>1</sup>	Hispanic <sup>2</sup>	7.3603*	1.3759	.000	3.8254	10.8952
		African American <sup>3</sup>	-1.3560	1.3847	.761	-4.9136	2.2016
		Asian <sup>4</sup>	3.5466	1.9966	.285	-1.5829	8.6761
	Hispanic <sup>2</sup>	European <sup>1</sup>	-7.3603*	1.3759	.000	-10.8952	-3.8254
		African American <sup>3</sup>	-8.7163*	1.7700	.000	-13.2635	-4.1691
		Asian <sup>4</sup>	-3.8137	2.2807	.338	-9.6730	2.0456
	African American <sup>3</sup>	European	1.3560	1.3848	.761	-2.2016	4.9136
		Hispanic <sup>2</sup>	8.7163*	1.7700	.000	4.1691	13.2635
		Asian	4.9026	2.2860	.139	-.9704	10.7757
	Asian <sup>4</sup>	European	-3.5466	1.9966	.285	-8.6761	1.5829
		Hispanic <sup>2</sup>	3.8137	2.2807	.338	-2.0456	9.6730
		African American <sup>3</sup>	-4.9026	2.2860	.139	-10.7757	.9704
For Infant Clothing	European <sup>1</sup>	Hispanic <sup>2</sup>	-9.9814*	2.2170	.000	-15.6781	-4.2847
		African American	-19.1210*	2.5736	.000	-25.7341	-12.5079
		Asian <sup>4</sup>	-8.7678	3.5114	.060	-17.7907	.2551
	Hispanic <sup>2</sup>	European <sup>1</sup>	9.9814*	2.2170	.000	4.2847	15.6781
		African American <sup>3</sup>	-9.1396*	3.0050	.013	-16.8612	-1.4180
		Asian <sup>4</sup>	1.2136	3.8388	.989	-8.6506	11.0779
	African American <sup>3</sup>	European <sup>1</sup>	19.1210*	2.5736	.000	12.5079	25.7341
		Hispanic <sup>2</sup>	9.1396*	3.0050	.013	1.4180	16.8612
		Asian <sup>4</sup>	10.3532	4.0552	.052	-.0671	20.7736
	Asian <sup>4</sup>	European <sup>1</sup>	8.7678	3.5114	.060	-.2551	17.7907
		Hispanic <sup>2</sup>	-1.2136	3.8388	.989	-11.0779	8.6506
		African American <sup>3</sup>	-10.3532	4.0552	.052	-20.7736	.0671

Note:  $p \leq .05$ \* Significant at  $p \leq .05$ .<sup>1</sup> CUs with European heads.<sup>2</sup> CUs with Hispanic heads.<sup>3</sup> CUs with African American heads.<sup>4</sup> CUs with Asian heads.

Table 4.24

ANOVA Test: Significant Mean Differences on Clothing Expenditures by CUs with Heads of Certain Ethnicities (Item Purchased)

	(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	P	95% Confidence Interval		
						Lower Bound	Upper Bound	
For Adult Clothing	European <sup>1</sup>	Hispanic <sup>2</sup>	-1.2041*	.1565	.000	-1.6063	-.8020	
		African American <sup>3</sup>	-.7469*	.1590	.000	-1.1553	-.3386	
		Asian <sup>4</sup>	.0204	.2316	1.000	-.5745	.6153	
		Hispanic <sup>2</sup>	European <sup>1</sup>	1.2041*	.1565	.000	.8020	1.6063
	Hispanic <sup>2</sup>	African American <sup>3</sup>	.4572	.2024	.108	-.0629	.9773	
		Asian <sup>4</sup>	1.2245*	.2633	.000	.5481	1.9010	
		African American <sup>3</sup>	European	.7469*	.1590	.000	.3386	1.1553
	Asian <sup>4</sup>	Hispanic <sup>2</sup>	-.4572	.2024	.108	-.9773	.0629	
		Asian	.7673*	.2648	.020	.0871	1.4475	
		European	-.0204	.2316	1.000	-.6153	.5745	
	For Infant Clothing	European <sup>1</sup>	Hispanic <sup>2</sup>	-24.9666*	4.8717	.000	-37.4866	-12.4466
			African American <sup>3</sup>	-10.9944	5.7378	.221	-25.7401	3.7512
Asian <sup>4</sup>			-6.4710	7.9677	.849	-26.9474	14.0054	
Hispanic <sup>2</sup>			European <sup>1</sup>	24.9666*	4.8717	.000	12.4466	37.4866
Hispanic <sup>2</sup>		African American <sup>3</sup>	13.9722	6.6054	.148	-3.0032	30.9476	
		Asian <sup>4</sup>	18.4955	8.6136	.138	-3.6407	40.6318	
		African American <sup>3</sup>	European <sup>1</sup>	10.9944	5.7378	.221	-3.7512	25.7401
Asian <sup>4</sup>		Hispanic <sup>2</sup>	-13.9722	6.6054	.148	-30.9476	3.0032	
		Asian <sup>4</sup>	4.5234	9.1314	.960	-18.9436	27.9903	
		European <sup>1</sup>	6.4710	7.9677	.849	-14.0054	26.9474	
Asian <sup>4</sup>		Hispanic <sup>2</sup>	-18.4955	8.6136	.138	-40.6318	3.6407	
		African American <sup>3</sup>	-4.5234	9.1314	.960	-27.9903	18.9436	
	European <sup>1</sup>	6.4710	7.9677	.849	-14.0054	26.9474		

Note:  $p \leq .05$ \* Significant at  $p \leq .05$ .<sup>1</sup> CUs with European heads.<sup>2</sup> CUs with Hispanic heads.<sup>3</sup> CUs with African American heads.<sup>4</sup> CUs with Asian heads.



Table 4.25

ANOVA Test: Mean Clothing Expenditures by CUs with Heads of Certain Ages (Purchase Event)

		Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>
For Adult Clothing	Between Ages	1503299.781	7	214757.112	15.595	.000
	Within Age Group	854387143.536	62,041	13771.331		
	Total	855890443.317	62,048			
For Infant Clothing	Between Ages	816448.582	7	116635.512	20.898	.000
	Within Age Group	42339550.184	7,586	5581.275		
	Total	43155998.765	7,593			

Note:  $p \leq .05$ ;  $\mu$  = mean

$\mu$  expenditures for adult clothing by CUs with heads ages 14~19 based on purchase events:

adult clothing = \$67.11; infant clothing = \$75.00

$\mu$  expenditures for adult clothing by CUs with heads ages 20~24 based on purchase events:

adult clothing = \$65.40; infant clothing = \$76.02

$\mu$  expenditures for adult clothing by CUs with heads ages 25~34 based on purchase events:

adult clothing = \$62.51; infant clothing = \$68.97

$\mu$  expenditures for adult clothing by CUs with heads ages 35~44 based on purchase events:

adult clothing = \$65.40; infant clothing = \$62.77

$\mu$  expenditures for adult clothing by CUs with heads ages 45~54 based on purchase events:

adult clothing = \$75.61; infant clothing = \$51.60

$\mu$  expenditures for adult clothing by CUs with heads ages 55~64 based on purchase events:

adult clothing = \$70.23; infant clothing = \$48.15

$\mu$  expenditures for adult clothing by CUs with heads ages 65~74 based on purchase events:

adult clothing = \$64.40; infant clothing = \$44.90

$\mu$  expenditures for adult clothing by CUs with heads ages 75 based on purchase events:

adult clothing = \$61.27; infant clothing = \$33.10

Numbers of adult clothing purchase based on purchase events:

CUs with heads ages 14~19 = 419; CUs with heads ages 20~24 = 2,815;

CUs with heads ages 25~34 = 11,419; CUs with heads ages 35~44 = 17,196;

CUs with heads ages 45~54 = 13,953; CUs with heads ages 55~64 = 8,530;

CUs with heads ages 65~74 = 5,189; CUs with heads ages over 75 = 2,528

Numbers of infant clothing purchase based on purchase events:

CUs with heads ages 14~19 = 108; CUs with heads ages 20~24 = 534;

CUs with heads ages 25~34 = 2,303; CUs with heads ages 35~44 = 1,824;

CUs with heads ages 45~54 = 1,212; CUs with heads ages 55~64 = 1,011;

CUs with heads ages 65~74 = 419; CUs with heads ages over 75 = 183

As Table 4.26 shows, the overall *F*-test indicated that there were significant mean expenditure differences per each clothing item purchased by CUs with heads of certain ages for both adult and infant clothing. For CUs with heads ages 25~34 significant mean expenditure differences were found with most other CUs except CUs with heads ages 14~19. Tables 4.27 and

4.28 present the significant differences found between CUs based on their heads' ages (see Appendix D for all mean differences found including non-significant differences).

Table 4.26

ANOVA Test: Mean Clothing Expenditures by CUs with Heads of Certain Ages (Item Purchased)

		Sum of Squares	df	Mean Square	<i>F</i>	<i>P</i>
For Adult Clothing	Between Ages	7293.092	7	1041.870	8.973	.000
	Within Age Group	4656507.586	40,104	116.111		
	Total	4663800.678	40,111			
For Infant Clothing	Between Ages	1967691.324	7	281098.761	15.770	.000
	Within Age Group	86096541.820	4,830	17825.371		
	Total	88064233.144	4,837			

Note:  $p \leq .05$ ;  $\mu$  = mean

$\mu$  expenditures for adult clothing by CUs with heads ages 14~19 based on item purchased:  
adult clothing = \$33.84; infant clothing = \$2.43

$\mu$  expenditures for adult clothing by CUs with heads ages 20~24 based on item purchased:  
adult clothing = \$26.20; infant clothing = \$2.65

$\mu$  expenditures for adult clothing by CUs with heads ages 25~34 based on item purchased:  
adult clothing = \$24.20; infant clothing = \$1.50

$\mu$  expenditures for adult clothing by CUs with heads ages 35~44 based on item purchased:  
adult clothing = \$29.76; infant clothing = \$2.24

$\mu$  expenditures for adult clothing by CUs with heads ages 45~54 based on item purchased:  
adult clothing = \$42.44; infant clothing = \$4.48

$\mu$  expenditures for adult clothing by CUs with heads ages 55~64 based on item purchased:  
adult clothing = \$38.47; infant clothing = \$5.83

$\mu$  expenditures for adult clothing by CUs with heads ages 65~74 based on item purchased:  
adult clothing = \$39.67; infant clothing = \$9.18

$\mu$  expenditures for adult clothing by CUs with heads ages 75 based on item purchased:  
adult clothing = \$31.07; infant clothing = \$7.00

Numbers of adult clothing purchase based on item purchased:

CUs with heads ages 14~19 = 831; CUs with heads ages 20~24 = 7,027;

CUs with heads ages 25~34 = 29,497; CUs with heads ages 35~44 = 37,784;

CUs with heads ages 45~54 = 24,860; CUs with heads ages 55~64 = 15,572;

CUs with heads ages 65~74 = 8,423; CUs with heads ages over 75 = 4,985

Numbers of infant clothing purchase based on item purchased:

CUs with heads ages 14~19 = 3,328; CUs with heads ages 20~24 = 15,342;

CUs with heads ages 25~34 = 105,961; CUs with heads ages 35~44 = 51,214;

CUs with heads ages 45~54 = 13,969; CUs with heads ages 55~64 = 8,346;

CUs with heads ages 65~74 = 2,049; CUs with heads ages over 75 = 866

Table 4.27

ANOVA Test: Significant Mean Differences on Clothing Expenditures by CUs with Heads of Certain Ages (Purchase Event)

	(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>P</i>	95% Confidence Interval	
						Lower Bound	Upper Bound
For Adult Clothing	Ages 20~24	Age 45~54	-10.2181	2.4247	.001	-17.5673	-2.8689
	Ages 25~34	Age 45~54	-13.1030	1.4809	.000	-17.5915	-8.6145
		Age 55~64	-7.7137	1.6794	.000	-12.8040	-2.6234
	Ages 35~44	Age 45~54	-10.2221	1.3371	.000	-14.2748	-6.1693
		Age 55~64	-4.8328	1.5541	.040	-9.5433	-.1223
	Ages 45~54	Age 55~64	5.3893	1.6129	.019	.5006	10.2779
		Age 65~74	11.2252	1.9081	.000	5.4417	17.0086
		Age 75+	14.3528	2.5366	.000	6.6643	22.0413
	Ages 55~64	Age 75+	8.9635	2.6574	.017	.9089	17.0182
	For Infant Clothing	Ages 14~19	Age 45~54	23.3952	7.5022	.039	.6505
Age 55~64			26.8536	7.5630	.009	3.9246	49.7826
Age 65~74			30.1002	8.0622	.005	5.6579	54.5426
Age 75+			41.8962	9.0652	.000	14.4130	69.3793
Ages 20~24		Age 35~44	13.2553	3.6758	.008	2.1111	24.3994
		Age 45~54	24.4158	3.8803	.000	12.6518	36.1799
		Age 55~64	27.8742	3.9966	.000	15.7578	39.9907
		Age 65~74	31.1208	4.8757	.000	16.3391	45.9026
		Age 75+	42.9168	6.3993	.000	23.5159	62.3176
		Ages 25~34	Age 45~54	17.3965	2.6511	.000	9.3590
Age 55~64			20.8549	2.8185	.000	12.3099	29.3999
Age 65~74			24.1015	3.9679	.000	12.0721	36.1310
Age 75+			35.8975	5.7378	.000	18.5020	53.2929
Ages 35~44		Age 45~54	11.1606	2.7686	.001	2.7670	19.5541
		Age 55~64	14.6190	2.9292	.000	5.7383	23.4996
		Age 65~74	17.8656	4.0473	.000	5.5954	30.1358
		Age 75+	29.6615	5.7930	.000	12.0988	47.2243
Ages 45~54		Age 75+	18.5010	5.9248	.038	.5384	36.4635

Note: Significant at  $p \leq .05$ .

Table 4.28

ANOVA Test: Significant Mean Differences on Clothing Expenditures by CUs with Heads of Certain Ages (Item Purchase)

	(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	P	95% Confidence Interval	
						Lower Bound	Upper Bound
For Adult Clothing	Age 20~24	Age 65~74	.9472	.30680	.042	.0173	1.8771
	Age 25~34	Age 35~44	.4978	.16042	.040	.0116	.9841
		Age 45~54	1.0205	.16945	.000	.5069	1.5342
		Age 55~64	1.0040	.19191	.000	.4224	1.5857
		Age 65~74	1.3006	.22584	.000	.6160	1.9851
		Age 75+	1.1158	.28271	.002	.2589	1.9727
	Age 35~44	Age 25~34	-.4978	.16042	.040	-.9841	-.0116
		Age 45~54	.5227	.15435	.016	.0548	.9906
		Age 65~74	.8027	.21475	.005	.1518	1.4537
	Age 45~54	Age 25~34	-1.0205	.16945	.000	-1.5342	-.5069
		Age 35~44	-.5227	.15435	.016	-.9906	-.0548
	Age 55~64	Age 25~34	-1.0040	.19191	.000	-1.5857	-.4224
	Age 65~74	Age 20~24	-.9472	.30680	.042	-1.8771	-.0173
		Age 25~34	-1.3006	.22584	.000	-1.9851	-.6160
		Age 35~44	-.8027	.21475	.005	-1.4537	-.1518
Age 75+	Age 25~34	-1.1158	.28271	.002	-1.9727	-.2589	
For Infant Clothing	Age 20~24	Age 25~34	-23.8168	7.6435	.039	-46.9936	-.6400
	Age 25~34	Age 20~24	23.8168	7.6435	.039	.6400	46.9936
		Age 35~44	20.6927	5.1202	.001	5.1672	36.2181
		Age 45~54	45.1644	5.9879	.000	27.0078	63.3208
		Age 55~64	49.3586	6.6119	.000	29.3100	69.4072
		Age 65~74	55.6624	9.4743	.000	26.9343	84.3905
		Age 75+	56.7838	13.2070	.000	16.7374	96.8302
	Age 35~44	Age 25~34	-20.6927	5.1202	.001	-36.2181	-5.1672
		Age 45~54	24.4717	6.3476	.003	5.2243	43.7191
		Age 55~64	28.6660	6.9394	.001	7.6243	49.7076
		Age 65~74	34.9697	9.7058	.008	5.5400	64.3995
	Age 45~54	Age 25~34	-45.1644	5.9879	.000	-63.3208	-27.0078
		Age 35~44	-24.4717	6.3476	.003	-43.7191	-5.2243
	Age 55~64	Age 25~34	-49.3586	6.6119	.000	-69.4072	-29.3100
		Age 35~44	-28.6660	6.9394	.001	-49.7076	-7.6243
Age 65~74	Age 25~34	-55.6624	9.4743	.000	-84.3905	-26.9343	
	Age 35~44	-34.9697	9.7057	.008	-64.3995	-5.5400	
Age 75+	Age 25~34	-56.7838	13.2070	.000	-96.8302	-16.7374	

Note: Significant at  $p \leq .05$ .

## Mean Expenditure for Clothing Gifts

### Gender

As indicated by previous Tables 4.19 and 4.20, there were no statistically significant mean expenditure differences between CUs with male and female heads for infant clothing based on clothing purchase events. Also, there were no statistically significant mean expenditure differences found between CUs with male and female heads for adult clothing based on clothing items purchased. However, as Table 4.29 shows, the overall *F*-test indicated there were significant mean expenditure differences in mean clothing gift expenditures by CUs with heads of certain genders for both adult and infant clothing. Results indicated that CUs with male heads on average spent more on clothing purchases based on purchase event.

Table 4.29

ANOVA Test: Mean Clothing Gift Expenditures by CUs with Heads of Certain Genders (Purchase Event)

		Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>
For Adult Clothing	Between Genders	83468.100	1	83468.100	9.164	.002
	Within Gender	68750428.871	7,548	9108.430		
	Total	68833896.970	7,549			
For Infant Clothing	Between Genders	26157.599	1	26157.599	6.913	.009
	Within Gender	17938249.706	4,741	3783.643		
	Total	17964407.306	4,742			

Note:  $p \leq .05$ ;  $\mu$  = mean

$\mu$  expenditures for adult clothing gifts by CUs with male heads based on purchase events:

adult clothing = \$61.17; infant clothing = \$48.51

$\mu$  expenditures for adult clothing gifts by CUs with female heads based on purchase events:

adult clothing = \$54.51; infant clothing = \$43.81

Numbers of adult clothing gifts purchase based on events:

male-headed CUs = 3,957; female-headed CUs = 3,593

Numbers of infant clothing gifts purchase based on events:

male-headed CUs = 2,492; female-headed CUs = 2,251

However, in Table 4.30, the overall *F*-test indicated there were no significant mean expenditure differences by CUs with heads of certain genders for either adult or infant clothing based on clothing item purchased.

Table 4.30

ANOVA Test: Mean Clothing Gift Expenditures by CUs with Heads of Certain Genders (Item Purchased)

		Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>
For Adult Clothing	Between Genders	7.991	1	7.991	.707	.401
	Within Gender	57310.360	5,068	11.308		
	Total	57318.352	5,069			
For Infant Clothing	Between Genders	29831.651	2	29831.651	3.794	.052
	Within Gender	21714648	2,762	7861.929		
	Total	21744480	2,763			

Note:  $p \leq .05$ ;  $\mu$  = mean

$\mu$  expenditures for adult clothing gifts by CUs with Male heads based on item purchased:

adult clothing = \$35.81; infant clothing = \$4.20

$\mu$  expenditures for adult clothing gifts by CUs with Female heads based on item purchased:

adult clothing = \$31.16; infant clothing = \$4.93

Numbers of adult clothing gifts purchase based on item purchased:

male-headed CUs = 6,760; female-headed CUs = 6,286

Numbers of infant clothing gifts purchase based on item purchased:

male-headed CUs = 28,783; female-headed CUs = 48,768

### ***Ethnicity***

As Table 4.31 shows, the overall *F*-test indicated there were significant mean expenditure differences for clothing gift expenditures by CUs with heads of certain ethnicities for only infant clothing based on clothing purchase event. Significant differences were found between CUs with European heads and CUs of all other ethnicities—Hispanic; African American; Asian—based on

clothing gift purchase event.

Table 4.31

ANOVA Test: Mean Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities (Purchase Event)

		Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>
For Adult Clothing	Between Ethnicities	51606.251	3	17202.084	1.887	.129
	Within Ethnicity	68782290.719	7,546	9115.066		
	Total	68833896.970	7,549			
For Infant Clothing	Between Ethnicities	90853.994	3	30284.665	8.030	.000
	Within Ethnicity	17873553.312	4,739	3771.588		
	Total	17964407.306	4,742			

Note:  $p \leq .05$ ;  $\mu$  = mean

$\mu$  expenditures for adult clothing gifts by CUs with European heads based on purchase events:

adult clothing = \$58.53; infant clothing = \$43.27

$\mu$  expenditures for adult clothing gifts by CUs with Hispanic heads based on purchase events:

adult clothing = \$51.35; infant clothing = \$49.80

$\mu$  expenditures for adult clothing gifts by CUs with African American heads based on purchase events:

adult clothing = \$61.53; infant clothing = \$52.37

$\mu$  expenditures for adult clothing gifts by CUs with Asian heads based on purchase events:

adult clothing = \$59.42; infant clothing = \$56.32

Numbers of adult clothing gifts purchase based on purchase events:

CUs with European heads = 5,470; CUs with Hispanic heads = 909;

CUs with African American heads = 720; CUs with Asian heads = 451

Numbers of infant clothing gifts purchase based on purchase events:

CUs with European heads = 3,103; CUs with Hispanic heads = 751;

CUs with African American heads = 568; CUs with Asian heads = 321

However, as Table 4.32 shows, the overall *F*-test indicated there were significant mean expenditure differences for clothing gift expenditures by CUs with heads of certain ethnicities for both adult and infant clothing based on item purchased. The ANOVA test for mean expenditure differences per each clothing item purchased indicated significant differences between infant

clothing expenditures by CUs with European heads and CUs with heads of all other ethnicities except Asian for infant clothing gifts. For adult clothing gifts, significant mean differences were found for each clothing item purchased between CUs with European and African American heads and between CUs with Hispanic and African American heads (see Tables 4.33 and 4.34 for specific differences by CU).

Table 4.32

ANOVA Test: Mean Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities (Item Purchased)

		Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>
For Adult Clothing	Between Ethnicities	416.841	3	138.947	12.371	.000
	Within Ethnicity	56901.511	5,066	11.232		
	Total	57318.352	5,069			
For Infant Clothing	Between Ethnicities	128679.823	3	42893.274	5.477	.001
	Within Ethnicity	21615799.867	2,760	7831.812		
	Total	21744479.690	2,763			

Note:  $p \leq .05$ ;  $\mu$  = mean

$\mu$  expenditures for adult clothing gifts by CUs with European heads based on item purchased:

adult clothing = \$36.12; infant clothing = \$5.72

$\mu$  expenditures for adult clothing gifts by CUs with Hispanic heads based on item purchased:

adult clothing = \$27.46; infant clothing = \$2.86

$\mu$  expenditures for adult clothing gifts by CUs with African American heads based on item purchased:

adult clothing = \$26.86; infant clothing = \$3.22

$\mu$  expenditures for adult clothing gifts by CUs with Asian heads based on item purchases:

adult clothing = \$32.17; infant clothing = \$6.09

Numbers of adult clothing gifts purchase based on item purchase:

CUs with European heads = 8,864; CUs with Hispanic heads = 1,700;

CUs with African American heads = 1,649; CUs with Asian heads = 833

Numbers of infant clothing gifts purchase based on item purchased:

CUs with European heads = 23,466; CUs with Hispanic heads = 13,089;

CUs with African American heads = 9,243; CUs with Asian heads = 2,970



Table 4.33

ANOVA Test: Significant Mean Differences on Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities (Purchase Event)

	(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	<i>P</i>	95% Confidence Interval	
						Lower Bound	Upper Bound
For Adult Clothing	European <sup>1</sup>	Hispanic <sup>2</sup>	7.1796	3.4196	.153	-1.6075	15.9667
		African American <sup>3</sup>	-2.9992	3.7850	.858	-12.7251	6.7268
		Asian <sup>4</sup>	-.8896	4.6773	.998	-12.9084	11.1292
	Hispanic <sup>2</sup>	European <sup>1</sup>	-7.1796	3.4196	.153	-15.9667	1.6075
		African American <sup>3</sup>	-10.1788	4.7631	.142	-22.4181	2.0606
		Asian <sup>4</sup>	-8.0692	5.4989	.457	-22.1993	6.0609
	African American <sup>3</sup>	European <sup>1</sup>	2.9992	3.7850	.858	-6.7268	12.7251
		Hispanic <sup>2</sup>	10.1788	4.7631	.142	-2.0606	22.4181
		Asian <sup>4</sup>	2.1095	5.7333	.983	-12.6227	16.8418
	Asian <sup>4</sup>	European <sup>1</sup>	.8896	4.6773	.998	-11.1292	12.9084
		Hispanic <sup>2</sup>	8.0692	5.4989	.457	-6.0609	22.1993
		African American <sup>3</sup>	-2.1095	5.7333	.983	-16.8418	12.6227
For Infant Clothing	European <sup>1</sup>	Hispanic <sup>2</sup>	-6.530*	2.4975	.044	-12.9480	-.1111
		African American <sup>3</sup>	-9.0990*	2.8028	.006	-16.3020	-1.8960
		Asian <sup>4</sup>	-13.0533*	3.6007	.002	-22.3068	-3.7997
	Hispanic <sup>2</sup>	European <sup>1</sup>	6.5296*	2.4975	.044	.1111	12.9480
		African American <sup>3</sup>	-2.5695	3.4150	.876	-11.3458	6.2069
		Asian <sup>4</sup>	-6.5237	4.0953	.383	-17.0484	4.0010
	African American <sup>3</sup>	European <sup>1</sup>	9.0990*	2.8028	.006	1.8960	16.3020
		Hispanic <sup>2</sup>	2.5695	3.4150	.876	-6.2069	11.3458
		Asian	-3.9543	4.2883	.793	-14.9750	7.0664
	Asian <sup>4</sup>	European <sup>1</sup>	13.0533*	3.6007	.002	3.7997	22.3068
		Hispanic <sup>2</sup>	6.5237	4.0953	.383	-4.0010	17.0484
		African American <sup>3</sup>	3.9543	4.2883	.793	-7.0664	14.9750

Note:  $p \leq .05$ \* Significant at  $p \leq .05$ .<sup>1</sup> CUs with European heads.<sup>2</sup> CUs with Hispanic heads.<sup>3</sup> CUs with African American heads.<sup>4</sup> CUs with Asian heads.

Table 4.34

ANOVA Test: Significant Mean Differences on Clothing Gift Expenditures by CUs with Heads of Certain Ethnicities (Item Purchased)

	(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
						Lower Bound	Upper Bound
For Adult Clothing	European <sup>1</sup>	Hispanic <sup>2</sup>	-.1636	.14234	.659	-.5294	.2022
		African American <sup>3</sup>	-.9502*	.16171	.000	-1.3658	-.5346
		Asian <sup>4</sup>	-.4366	.20449	.142	-.9621	.0889
	Hispanic <sup>2</sup>	European <sup>1</sup>	.1636	.14234	.659	-.2022	.5294
		African American <sup>3</sup>	-.7867*	.20059	.001	-1.3022	-.2711
		Asian <sup>4</sup>	-.2730	.23644	.655	-.8807	.3346
	African American <sup>3</sup>	European <sup>1</sup>	.9502*	.16171	.000	.5346	1.3658
		Hispanic <sup>2</sup>	.7867*	.20059	.001	.2711	1.3022
		Asian <sup>4</sup>	.5136	.24859	.164	-.1252	1.1525
	Asian <sup>4</sup>	European <sup>1</sup>	.4366	.20449	.142	-.0889	.9621
		Hispanic <sup>2</sup>	.2730	.23644	.655	-.3346	.8807
		African American <sup>3</sup>	-.5136	.24859	.164	-1.1525	.1252
For Infant Clothing	European <sup>1</sup>	Hispanic <sup>2</sup>	-15.2116*	4.6123	.005	-27.0680	-3.3551
		African American <sup>3</sup>	-15.4694*	5.3414	.020	-29.1999	-1.7388
		Asian <sup>4</sup>	-3.4416	6.9187	.960	-21.2267	14.3436
	Hispanic <sup>2</sup>	European <sup>1</sup>	15.2116*	4.6123	.005	3.3551	27.0680
		African American <sup>3</sup>	-.2578	6.4100	1.000	-16.7352	16.2196
		Asian <sup>4</sup>	11.7700	7.7734	.429	-8.2122	31.7522
	African American <sup>3</sup>	European <sup>1</sup>	15.4694*	5.3414	.020	1.7388	29.1999
		Hispanic <sup>2</sup>	.2578	6.4100	1.000	-16.2196	16.7352
		Asian	12.0278	8.2269	.461	-9.1203	33.1759
	Asian <sup>4</sup>	European <sup>1</sup>	3.4416	6.9187	.960	-14.3436	21.2267
		Hispanic <sup>2</sup>	-11.7700	7.7734	.429	-31.7522	8.2122
		African American <sup>3</sup>	-12.0278	8.2269	.461	-33.1759	9.1203

Note:  $p \leq .05$ \* Significant at  $p \leq .05$ .<sup>1</sup> CUs with European heads.<sup>2</sup> CUs with Hispanic heads.<sup>3</sup> CUs with African American heads.<sup>4</sup> CUs with Asian heads.

## Age

As Table 4.35 shows, the overall *F*-test indicated there were significant mean expenditure differences between clothing gift expenditures by CUs with heads of certain ages for both adult and infant clothing for each clothing purchase event. Interestingly, only CUs with heads ages

Table 4.35

ANOVA Test: Mean Clothing Gift Expenditures by CUs with Heads of Certain Ages (Purchase Event)

		Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>
For Adult Clothing	Between Ages	166056.495	7	23722.356	2.605	.011
	Within Age Group	68667840.475	7,542	9104.726		
	Total	68833896.970	7,549			
For Infant Clothing	Between Ages	64188.099	7	9169.728	2.426	.018
	Within Age Group	17900219.206	4,735	3780.405		
	Total	17964407.306	4,742			

Note:  $p \leq .05$ ;  $\mu$  = mean

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 14~19 based on purchase events:

adult clothing = \$58.65; infant clothing = \$53.19

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 20~24 based on purchase events:

adult clothing = \$63.95; infant clothing = \$52.96

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 25~34 based on purchase events:

adult clothing = \$65.64; infant clothing = \$50.12

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 35~44 based on purchase events:

adult clothing = \$53.32; infant clothing = \$46.37

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 45~54 based on purchase events:

adult clothing = \$61.91; infant clothing = \$45.40

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 55~64 based on purchase events:

adult clothing = \$53.34; infant clothing = \$45.06

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 65~74 based on purchase events:

adult clothing = \$56.69; infant clothing = \$44.26

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 75 based on purchase events:

adult clothing = \$56.69; infant clothing = \$32.16

Numbers of adult clothing gift purchase based on purchase events:

CUs with heads ages 14~19 = 34; CUs with heads ages 20~24 = 294;

CUs with heads ages 25~34 = 1,000; CUs with heads ages 35~44 = 1,413;

CUs with heads ages 45~54 = 1,804; CUs with heads ages 55~64 = 1,567;

CUs with heads ages 65~74 = 1,008; CUs with heads ages over 75 = 430

Numbers of infant clothing gift purchase based on purchase events:

CUs with heads ages 14~19 = 54; CUs with heads ages 20~24 = 204;

CUs with heads ages 25~34 = 906; CUs with heads ages 35~44 = 1,093;

CUs with heads ages 45~54 = 970; CUs with heads ages 55~64 = 924;

CUs with heads ages 65~74 = 415; CUs with heads ages over 75 = 177

25~34 had a significant mean difference between CUs with heads ages 35~44 and 55~64 for adult clothing based on clothing gift purchase event (see Table 4.37 for significant differences by CU). As Table 4.36 shows, the overall F-test indicated there were significant mean expenditure differences for clothing gift expenditures by CUs with heads of certain ages only for infant clothing based on the item purchased.

Table 4.36

ANOVA Test: Mean Clothing Gift Expenditures by CUs with Heads of Certain Ages (Item Purchased)

		Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>
For Adult Clothing	Between Ages	106.604	7	15.229	1.347	.223
	Within Age Group	57211.748	5,062	11.302		
	Total	57318.352	5,069			
For Infant Clothing	Between Ages	255970.338	7	36567.191	4.690	.000
	Within Age Group	21488509.352	2,756	7796.992		
	Total	21744479.690	2,763			

Note:  $p \leq .05$ ;  $\mu$  = mean

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 14~19 based on item purchased:  
adult clothing = \$21.79; infant clothing = \$2.48

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 20~24 based on item purchased:  
adult clothing = \$37.68; infant clothing = \$3.79

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 25~34 based on item purchased:  
adult clothing = \$38.25; infant clothing = \$2.56

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 35~44 based on item purchased:  
adult clothing = \$27.29; infant clothing = \$3.38

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 45~54 based on item purchased:  
adult clothing = \$40.01; infant clothing = \$8.98

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 55~64 based on item purchased:  
adult clothing = \$30.26; infant clothing = \$8.67

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 65~74 based on item purchased:  
adult clothing = \$34.81; infant clothing = \$8.98

$\mu$  expenditures for adult clothing gifts by CUs with heads ages 75 based on item purchased:  
adult clothing = \$30.39; infant clothing = \$23.32

Numbers of adult clothing gift purchase based on item purchased:

CUs with heads ages 14~19 = 91; CUs with heads ages 20~24 = 499;

CUs with heads ages 25~34 = 1,716; CUs with heads ages 35~44 = 2,761;

CUs with heads ages 45~54 = 2,792; CUs with heads ages 55~64 = 2,762;

CUs with heads ages 65~74 = 1,623; CUs with heads ages over 75 = 802

Numbers of infant clothing gift purchase based on item purchased:

CUs with heads ages 14~19 = 1,158; CUs with heads ages 20~24 = 2,853;

CUs with heads ages 25~34 = 17,742; CUs with heads ages 35~44 = 15,010;

CUs with heads ages 45~54 = 4,902; CUs with heads ages 55~64 = 4,803;

CUs with heads ages 65~74 = 2,045; CUs with heads ages over 75 = 255

Table 4.37 presents the significant differences found between CU gift expenditure means based on the age of the CU head. CUs with heads ages over 75 had significant mean expenditure differences with CUs with heads ages 20~24 and 25~34 for infant clothing gifts based on purchase event (see Appendix E for all significant and non-significant differences found).

Table 4.37

ANOVA Test: Significant Mean Differences on Clothing Gift Expenditures by CUs with Heads of Certain Ages (Purchase Event)

	(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
						Lower Bound	Upper Bound
For Adult Clothing	Ages 25~34	Ages 35~44	12.3248	3.9431	.038	.3703	24.2793
		Ages 55~64	12.3032	3.8620	.031	.5947	24.0118
For Infant Clothing	Ages 20~24	Ages 75+	20.8026	6.3158	.022	1.6515	39.9537
	Ages 25~34	Ages 75+	17.9621	5.0528	.009	2.6408	33.2834

Note: Significant at  $p \leq .05$ .

CUs with heads ages 25~34 had significant mean differences only for infant clothing gift expenditures based on clothing item purchased (see Table 4.38 for significant differences between CUs).

Table 4.38

ANOVA Test: Significant Mean Differences on Clothing Gift Expenditures by CUs with Heads of Certain Ages (Item Purchased)

	(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
						Lower Bound	Upper Bound
For Infant Clothing	Age 25~34	Age 45~54	22.8982	5.2490	.000	6.9768	38.8196
		Age 55~64	21.5279	5.4826	.002	4.8979	38.1578
		Age 65~74	22.3839	6.9755	.029	1.2258	43.5420
		Age 75+	29.0376	9.4630	.045	.3343	57.7409

Note: Significant at  $p \leq .05$ .

Chapter V presents a study review, discussion of the study findings, limitations of the study, and future research recommendations.

## CHAPTER V

### SUMMARY & CONCLUSIONS

Chapter V presents four major sections: (1) A Review of the Study Purpose; (2) Discussion of the Key Findings of the Study; (3) Limitations of the Research; and (4) Future Research Recommendations.

#### **A Review of the Study Purpose**

Over the past 80 years or more, a large number of research studies have investigated gift-giving behavior, with a substantial increase in interest in this research topic since the 1970s. While a variety of topics have been addressed by the gift-giving literature, including cultural differences, the influence of gender, and the “dark side” of giving, the majority of gift-giving studies have focused on gift giving at Christmas which in the United States is viewed as the most economically and socially impactful holiday event (Sherry, 1983). Little research attention has been focused, however, on the role clothing plays in gift giving. This is somewhat surprising given that 2.5 percent of household spending annually is devoted to gift giving (\$1,007), with 22.34 percent (\$225) of that for clothing gifts. This indicates a large gap in our understanding of gift giving when considering that based on these numbers on average 20 to 25 percent of gifts are clothing gifts (*Household Spending*, 2006).

An in-depth review of the gift-giving literature indicated that several gaps exist in this research area. First, although some previous studies have focused on gift giving or clothing consumption, little research has been done on the probabilities associated with households purchasing clothing items for gift giving. Second, although previous research on gift giving has included age, education, family type, family size, gender of household head, income, location

(region or urban/rural), marital status, occupation, and race as major variables influencing expenditures on clothing, little is known about these demographic variables and clothing gifts. Third, the giving of clothing gifts has not been addressed in regards to the increasingly diverse and ethnically-driven consumers of America, despite the dramatic shift in diversity in the U.S. population anticipated by 2050. Fourth, little research in clothing expenditures has looked at gift giving using a Bayesian statistical approach.

In response to these gaps in the gift-giving literature, the main objective of this study was to explore the probabilities associated with key demographic variables and clothing gift expenditures, focusing specifically on three independent variables—age, gender, and ethnicity. The independent variables age and gender were selected because they represent two of the key variables investigated in the gift-giving literature, and the independent variable ethnicity was selected because of its growing importance in a demographically changing America. The dependent variable was expenditures on clothing for gifts, either aggregate adult clothing expenditures (calculated using 14 categories of adult clothing) or aggregate infant clothing expenditures (calculated using 6 categories of infant clothing). The study probabilities were estimated using a Bayesian statistical approach because of the Bayesian approach's ability to estimate the probability of reciprocity effectively. Additionally, a second objective of the study was to identify mean differences between CU expenditures on clothing gifts. Therefore, ANOVAs were run to test for mean differences between CU expenditures on adult and infant clothing gifts based on the gender, ethnicity, and age of CU heads.

Data for the study were drawn from the 2001 Consumer Expenditure Survey (CEX) (interview survey and detailed expenditure files), data collected by the Bureau of the Census, under contract with the Bureau of Labor Statistics (BLS), because the CEX is viewed as one of the best sources of product consumption data for households in the United States (Attanasio and



Weber, 1994).

## **Discussion of the Key Findings of the Study**

### **Clothing Expenditures**

The first research questions asked in this study considered the expenditures of CUs for clothing in general to provide a frame for understanding CU expenditures on clothing gifts. The results of this study indicate that CUs with heads in the age group 45~54 and 55~64 had the highest mean expenditures for adult clothing, while CUs with heads 20~24 had the highest mean expenditures for infant clothing. The highest probabilities for making both adult and infant clothing expenditures were among CUs with heads in the 25~34, 35~44, and 45~54 age groups. While the probability findings reflect an expected high level of interest in clothing among young to middle-age CU heads who are beginning careers, starting families, and moving up in their jobs, the findings in regards to mean expenditures for infant clothing were surprising. This finding does not support the literature, which has consistently found that clothing expenditures increase with age up to retirement, suggesting that we may as a society view clothing expenditures very differently depending on the clothing category. This does, however, support the importance of including research that disaggregates clothing expenditures. One possible explanation for this unusual finding of high expenditure means on infant clothing by CUs with heads 20~24 may be the influence of immigrant birth rates in an America that is experiencing greater diversity in its population.

### **Clothing Gift Expenditures**

#### ***Adult Clothing Gifts***

The second set of research questions in this study, and the major focus of the study, investigated CU expenditures on adult and infant clothing gifts and the influence of gender, ethnicity, and age of CU heads on those expenditures. For adult clothing gifts, the results indicate

that CUs with heads ages 20~24 and 25~34 had the highest mean expenditures on adult clothing gifts while CUs with heads of older ages such as ages 65~74 and 75+ were more likely to purchase adult clothing as gifts. The findings on mean expenditures for CUs with heads of certain ages were surprising in that they vary from expenditure patterns on clothing gifts relative to age based on the research of Steinberg and Wilhelm (2003), which suggested that older ages tend to give more gifts than their younger counterparts. In regards to ethnicity, African American-headed CUs had the highest mean expenditure on adult clothing purchased for gifts while European- and Asian-headed CUs demonstrated higher probabilities to purchase adult clothing as gifts. These findings on mean expenditures for CUs with heads of certain ethnicities also differed from studies by Alden and Green (1998), Jolibert and Fernandez-Moreno (1983), and Ma (1985), which suggested that African Americans spent less on adult clothing gifts than non-African Americans. One explanation for this difference may be the difference between individual spending and CU spending studies. A second explanation may be the improvement over time of income levels among African Americans, which would support Garner and Wagner (1991) who found that increases in gift giving positively outpace increases in income.

### ***Infant Clothing Gifts***

For infant clothing gifts, results indicated CUs with heads in the age groups 14~19 and 20~24 demonstrated the highest mean expenditures while CUs with heads of older ages had higher probabilities of purchasing infant clothing as gifts in general. Also, CUs with heads ages 14~19 had the highest probability of purchasing infant clothing as gifts compared to CUs with heads ages 20~24 and 25~34 for both male and female-headed CUs. This finding is particularly surprising given that having children has been more associated with later marriage in recent years. Many people are waiting until their late 20s and early 30s to start families. Consequently, it might be expected that the purchase of infant clothing gifts would be more frequent and of greater

importance in those age groups. The reasons for this finding are unclear. One possible explanation would be a high number of births among Hispanic families and possibly other groups within the US population. Another possible explanation might be the importance of children in a household that has relatively few material goods.

African American- and Asian-headed CUs had the highest mean expenditures of all the ethnic groups for infant clothing gifts while Asian- and European-headed CUs had the highest probabilities of purchasing infant clothing as gifts. Again, these findings disagree with those of Alden and Green (1998), Jolibert and Fernandez-Moreno (1983), and Ma (1985), which suggested that African Americans were less likely to spend on extra-household gifts than non-African Americans. These differences may reflect a major demographic shift in the population composition in the United States, as many of the previous gift expenditure studies were conducted ten or more years ago. Furthermore, these differences may reflect cultural norms for gift giving, for example, an African American cultural emphasis on clothes and celebratory events and an Asian cultural emphasis on celebrating newborns.

The study results indicated that more mean differences were identified between groups based on CUs with heads of certain genders, ethnicities, and ages for infant clothing expenditures and infant clothing gifts than were identified for adult clothing expenditures and adult clothing gifts. The number of mean differences found based on purchase event versus item purchased was virtually identical.

### ***Summary of Findings***

This design of this research has contributed to the literature by (1) focusing on clothing gift giving outside the Christmas perspective; (2) applying key demographic variables to clothing gift giving research, especially the variable of age which has been less explored in the literature; (3) disaggregating clothing data into two important categories (adult clothing and infant clothing),

consequently providing more specific information about gift giving; (4) taking a quantitative approach using CU data from the 2001 CEX, departing from the qualitative approach often used in gift giving research; and (5) using Bayesian analysis techniques, little used in the clothing research area, to estimate the probabilities of giving clothing as gifts.

The results of this study have contributed to the literature by (1) providing more detailed information about clothing gift giving than previously available; and (2) identifying some interesting and surprising findings. The study's results both agree with and disagree with some of the previous findings in the gift-giving literature. CUs with younger heads seem more strongly involved in clothing gift expenditures than expected. Also, although CUs with Asian heads had a low sample representation, they had a strong expenditure impact on clothing gifts, especially infant clothing gifts. In regard to gender of CU heads, male-headed CUs had higher mean clothing gift expenditures than female-headed CUs and a higher probability for clothing gift expenditures than female-headed CUs for both adult clothing gifts and infant clothing gifts, refuting Caplow (1982), Cheal (1986), and Fischer and Arnold's (1990) finding that females are more likely to purchase clothing gifts than males.

As a general statement, the probabilities and the mean expenditure differences relative to clothing gift expenditures appeared to be influenced radically by clothing category, adult or infant—specifically probabilities were much higher than infant clothing would be purchased as a gift. The consumer behavior of interest, that is, consumer expenditures on adult and infant clothing gifts, appears to be surprisingly impacted by differences in gender, ethnicity, and age.

### **Limitations of the Research**

As with most research studies, this study has its limitations. Although the use of the 2001 CEX provides rich and representative data, those data come only from the interview survey data of the 2001 CEX, that is, the data cover approximately 90 to 95 percent of household

expenditures. The diary survey data collected by the 2001 CEX were not included in this study. Because of the secondary nature of the data source, the categories of clothing included in the study had to be adjusted to include only those categories that were appropriate and relevant to investigate clothing in regards to gift giving, a total of 20 categories of clothing (14 categories of adult clothing and 6 categories of infant clothing). The study also restricted itself to investigating expenditures at the aggregate level for two main categories of clothing, treating the 14 categories of adult clothing aggregately and the 6 categories of infant clothing aggregately.

In interpreting the findings of the study, it is also important to take into consideration that the focus of the study analyses was on mean clothing expenditures or mean clothing gift expenditures. Consequently, readers should be mindful that an individual consumer unit may spend more or less than the average, depending on its particular demographic and socio-economic characteristics. Furthermore, this must be considered for both expenditures based on purchase events and items purchased. Certainly, it is critical that those reviewing this study understand that this research focuses on the gender, ethnicity, and age of the reference person in a CU and does not attempt to specify the gift giver, who may be other persons within the CU. Finally, although great effort is made by the CEX to provide a representative sample during data collection, the adjusted sample in this study had a relatively low representation of CUs headed by Asian respondents.

### **Future Research Recommendations**

Following up on a limitation of the study and continuing to work with CEX data, future research may want to consider a study of mean expenditures for each category of clothing as gifts in regards to the key demographic variables—age, gender, and ethnicity, with cultural differences. Such a study would provide more specific information on the pattern of clothing gift expenditures, for example, clarifying whether a CU of a particular type is more likely to purchase a sweater or a

blouse as a gift. Future research using the CEX might also want to consider a gift-giving study in which clothing gifts are tied to the recipients, to develop a better understanding of the relationship between the clothing gift and the person for whom it has been purchased. The surprising finding about CUs headed by ages 14~19 and their high mean expenditures on infant clothing also suggests that further research should be pursued in regards to such households and their gift-giving behavior.

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APPENDIX A

2001 CEX CODEBOOK : DATA FORMAT AND CODES RELEVANT TO THE STUDY

Consumer Expenditure Survey, 2001: Interview Survey  
and Detailed Expenditure Files

ICPSR 3674)

Principal Investigator

United States Department of Labor  
Bureau of Labor Statistics

First ICPSR Release  
March 2003

Inter-university Consortium for  
Political and Social Research  
P.O. Box 1248  
Ann Arbor, Michigan 48106



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#### REQUEST FOR INFORMATION ON USE OF ICPSR RESOURCES

To provide funding agencies with essential information about use of archival resources and to facilitate the exchange of information about ICPSR participants' research activities, users of ICPSR data are requested to send to ICPSR bibliographic citations for each completed manuscript or thesis abstract. Please indicate in a cover letter which data were used.

#### DATA DISCLAIMER

The original collector of the data, ICPSR, and the relevant funding agency bear no responsibility for uses of this collection or for interpretations or inferences based upon such uses.

## DATA COLLECTION DESCRIPTION

United States Department of Labor. Bureau of Labor Statistics  
Consumer Expenditure Survey, 2001: Interview Survey and  
Expenditure Files (ICPSR 3674)

**SUMMARY:** The ongoing Consumer Expenditure Survey (CES) provides a continuous flow of information on the buying habits of American consumers and also furnishes data to support periodic revisions of the Consumer Price Index. The survey consists of two separate components: (1) a quarterly Interview Survey in which each consumer unit in the sample is interviewed every three months over a 15-month period, and (2) a Diary Survey completed by the sample consumer units for two consecutive one-week periods. The Interview Survey was designed to collect data on major items of expense, household characteristics, and income. The expenditures covered by the survey are those that respondents can recall fairly accurately for three months or longer. In general, these expenditures include relatively large purchases, such as those for property, or expenditures that occur on a fairly regular basis, such as rent, utilities, or insurance premiums. Excluded are nonprescription drugs, household supplies, and personal care items. Including global estimates on spending for food, it is estimated that about 90 to 95 percent of expenditures are covered in the Interview Survey. The Detailed Expenditure Files were created from all the major expenditure sections of the Interview Survey questionnaires and contain the most detailed expenditure data from the Interview Survey. Parts 74-77 contain processing files used by the program in Part 78. Part 78, Documentation File, includes a sample program and lists all of the data file variables by start position. Part 79 is a SAS program that generates means, variances, standard errors, and coefficients of variation.

**UNIVERSE:** Noninstitutional civilian population of the United States.

**SAMPLING:** National probability sample of households designed to represent the total noninstitutional civilian population.

**NOTE:** (1) Starting with the 1994 collection, the Interview Survey and the Detailed Expenditure Files (EXPN) are released together in one data collection by the Bureau of Labor Statistics. (2) This release includes files from the first quarter of 2002 in addition to the files containing data from interviews conducted during the four quarters of 2001. (3) A new data collection instrument was used after the first quarter of 2001. (4) The codebook and data collection instrument are provided by the data producer as Portable

Document Format (PDF) files and the codebook is also provided as a MSWord file. The PDF file format was developed by Adobe Systems Incorporated and can be accessed using PDF reader software, such as the Adobe Acrobat Reader. Information on how to obtain a copy of the Acrobat Reader is provided on the ICPSR Web site.

EXTENT OF COLLECTION: 72 data files + machine-readable documentation (PDF and MSWord) + database dictionary + data collection instrument (PDF) + accompanying computer program

EXTENT OF PROCESSING: MDATA.PR/ CONCHK.PR/ UNDOCCHK.PR

DATA FORMAT: Logical Record Length

Part 1: Consumer Unit Characteristics and Income, First Quarter, 2001 File Structure: rectangular Cases: 7,712 Variables: 649 Record Length: 4,608 Records Per Case: 1	Part 2: Member Characteristics and Income, First Quarter, 2001 File Structure: rectangular Cases: 19,919 Variables: 97 Record Length: 261 Records Per Case: 1
Part 3: Detailed Expenditures, First Quarter, 2001 File Structure: rectangular Cases: 697,014 Variables: 8 Record Length: 35 Records Per Case: 1	Part 4: Income File, First Quarter, 2001 File Structure: rectangular Cases: 387,330 Variables: 8 Record Length: 35 Records Per Case: 1
Part 5: Consumer Unit Characteristics and Income, Second Quarter, 2001 File Structure: rectangular Cases: 7,579 Variables: 690 Record Length: 4,775 Records Per Case: 1	Part 6: Member Characteristics and Income, Second Quarter, 2001 File Structure: rectangular Cases: 19,704 Variables: 117 Record Length: 311 Records Per Case: 1
Part 7: Detailed Expenditures, Second Quarter, 2001 File Structure: rectangular Cases: 657,688 Variables: 8 Record Length: 35 Records Per Case: 1	Part 8: Income File, Second Quarter, 2001 File Structure: rectangular Cases: 379,569 Variables: 8 Record Length: 35 Records Per Case: 1

Part 9: Consumer Unit  
Characteristics and Income,  
Third Quarter, 2001  
File Structure: rectangular  
Cases: 7,398  
Variables: 690  
Record Length: 4,775  
Records Per Case: 1

Part 11: Detailed  
Expenditures, Third Quarter,  
2001  
File Structure: rectangular  
Cases: 658,322  
Variables: 8  
Record Length: 35  
Records Per Case: 1

Part 13: Consumer Unit  
Characteristics and Income,  
Fourth Quarter, 2001  
File Structure: rectangular  
Cases: 7,624  
Variables: 690  
Record Length: 4,775  
Records Per Case: 1

Part 15: Detailed  
Expenditures, Fourth Quarter,  
2001  
File Structure: rectangular  
Cases: 679,163  
Variables: 8  
Record Length: 35  
Records Per Case: 1

Part 17: Consumer Unit  
Characteristics and Income,  
First Quarter, 2002  
File Structure: rectangular  
Cases: 7,691  
Variables: 690  
Record Length: 4,775  
Records Per Case: 1

Part 10: Member  
Characteristics and Income,  
Third Quarter, 2001  
File Structure: rectangular  
Cases: 19,370  
Variables: 117  
Record Length: 311  
Records Per Case: 1

Part 12: Income File, Third  
Quarter, 2001  
File Structure: rectangular  
Cases: 372,270  
Variables: 8  
Record Length: 35  
Records Per Case: 1

Part 14: Member  
Characteristics and Income,  
Fourth Quarter, 2001  
File Structure: rectangular  
Cases: 19,626  
Variables: 117  
Record Length: 311  
Records Per Case: 1

Part 16: Income File, Fourth  
Quarter, 2001  
File Structure: rectangular  
Cases: 385,722  
Variables: 8  
Record Length: 35  
Records Per Case: 1

Part 18: Member  
Characteristics and Income,  
First Quarter, 2002  
File Structure: rectangular  
Cases: 19,712  
Variables: 117  
Record Length: 311  
Records Per Case: 1

Part 19: Detailed  
Expenditures, First Quarter,  
2002  
File Structure: rectangular  
Cases: 716,727  
Variables: 8  
Record Length: 35  
Records Per Case: 1

Part 21: Major Household  
Appliances  
File Structure: rectangular  
Cases: 332,959  
Variables: 21  
Record Length: 38  
Records Per Case: 1

Part 23: Owned Living Quarters  
(Detailed Property  
Description)  
File Structure: rectangular  
Cases: 30,236  
Variables: 33  
Record Length: 95  
Records Per Case: 1

Part 25: Owned Living Quarters  
(Mortgage Payments)  
File Structure: rectangular  
Cases: 17,806  
Variables: 67  
Record Length: 194  
Records Per Case: 1

Part 27: Owned Living Quarters  
(Line of Credit Home Equity  
Loans)  
File Structure: rectangular  
Cases: 1,992  
Variables: 21  
Record Length: 66  
Records Per Case: 1

Part 20: Income File, First  
Quarter, 2002  
File Structure: rectangular  
Cases: 391,269  
Variables: 8  
Record Length: 35  
Records Per Case: 1

Part 22: Rented Living  
Quarters  
File Structure: rectangular  
Cases: 12,821  
Variables: 45  
Record Length: 94  
Records Per Case: 1

Part 24: Owned Living Quarters  
(Disposed-of Property)  
File Structure: rectangular  
Cases: 117  
Variables: 19  
Record Length: 64  
Records Per Case: 1

Part 26: Owned Living Quarters  
(Lump-Sum Home Equity Loans)  
File Structure: rectangular  
Cases: 1,955  
Variables: 67  
Record Length: 194  
Records Per Case: 1

Part 28: Owned Living Quarters  
(Ownership Costs)  
File Structure: rectangular  
Cases: 41,060  
Variables: 129  
Record Length: 263  
Records Per Case: 1

Part 29: Utilities and Fuels  
for Owned and Rented  
Properties (Telephone  
Expenses)  
File Structure: rectangular  
Cases: 168,666  
Variables: 61  
Record Length: 126  
Records Per Case: 1

Part 31: Utilities and Fuels  
(Screening Questions)  
File Structure: rectangular  
Cases: 251  
Variables: 11  
Record Length: 34  
Records Per Case: 1

Part 33: Construction,  
Repairs, Alterations, and  
Maintenance of Property  
(Screening Questions)  
File Structure: rectangular  
Cases: 1,046  
Variables: 11  
Record Length: 38  
Records Per Case: 1

Part 35: Appliances, Household  
Equipment, and Other Selected  
Items (Purchase of Appliances)  
File Structure: rectangular  
Cases: 3,639  
Variables: 19  
Record Length: 52  
Records Per Case: 1

Part 37: Household Equipment  
Repairs and Service Contracts  
File Structure: rectangular  
Cases: 4,331  
Variables: 13  
Record Length: 36  
Records Per Case: 1

Part 30: Utilities and Fuels  
for Owned and Rented  
Properties (Additional  
Telephone Expenses)  
File Structure: rectangular  
Cases: 4,545  
Variables: 9  
Record Length: 34  
Records Per Case: 1

Part 32: Utilities and Fuels  
(Detailed Questions)  
File Structure: rectangular  
Cases: 423,802  
Variables: 27  
Record Length: 60  
Records Per Case: 1

Part 34: Construction,  
Repairs, Alterations, and  
Maintenance of Property (Job  
Description)  
File Structure: rectangular  
Cases: 12,702  
Variables: 63  
Record Length: 219  
Records Per Case: 1

Part 36: Appliances, Household  
Equipment, and Other Selected  
Items (Other Household  
Equipment)  
File Structure: rectangular  
Cases: 38,569  
Variables: 15  
Record Length: 43  
Records Per Case: 1

Part 38: Furniture Repair and  
Reupholstering  
File Structure: rectangular  
Cases: 64  
Variables: 9  
Record Length: 30  
Records Per Case: 1

Part 39: Home Furnishings and  
Related Household Items  
(Purchases)  
File Structure: rectangular  
Cases: 39,857  
Variables: 13  
Record Length: 36  
Records Per Case: 1

Part 41: Clothing and Sewing  
Materials (Clothing)  
File Structure: rectangular  
Cases: 211,437  
Variables: 17  
Record Length: 43  
Records Per Case: 1

Part 43: Clothing and Sewing  
Materials (Sewing Materials)  
File Structure: rectangular  
Cases: 4,372  
Variables: 13  
Record Length: 36  
Records Per Case: 1

Part 45: Rented and Leased  
Vehicles (Screening Questions)  
File Structure: rectangular  
Cases: 1,107  
Variables: 15  
Record Length: 48  
Records Per Case: 1

Part 47: Owned Vehicles  
(Detailed Questions)  
File Structure: rectangular  
Cases: 72,005  
Variables: 115  
Record Length: 302  
Records Per Case: 1

Part 40: Home Furnishings and  
Related Household Items  
(Rental or Leasing of  
Furniture)  
File Structure: rectangular  
Cases: 208  
Variables: 11  
Record Length: 41  
Records Per Case: 1

Part 42: Clothing and Sewing  
Materials (Infants' Clothing,  
Watches, Jewelry, and  
Hairpieces)  
File Structure: rectangular  
Cases: 28,617  
Variables: 17  
Record Length: 43  
Records Per Case: 1

Part 44: Clothing and Sewing  
Materials (Clothing Services)  
File Structure: rectangular  
Cases: 4,059  
Variables: 13  
Record Length: 36  
Records Per Case: 1

Part 46: Rented and Leased  
Vehicles (Detailed Questions  
for Leased Vehicles)  
File Structure: rectangular  
Cases: 3,026  
Variables: 77  
Record Length: 200  
Records Per Case: 1

Part 48: Owned Vehicles  
(Disposed-of Vehicles)  
File Structure: rectangular  
Cases: 2,525  
Variables: 23  
Record Length: 62  
Records Per Case: 1

Part 49: Vehicle Operating Expenses (Vehicle Maintenance and Repair, Parts and Equipment)  
File Structure: rectangular  
Cases: 52,055  
Variables: 21  
Record Length: 58  
Records Per Case: 1

Part 51: Vehicle Operating Expenses (Other Vehicle Operating Expenses)  
File Structure: rectangular  
Cases: 38,003  
Variables: 27  
Record Length: 95  
Records Per Case: 1

Part 53: Hospitalization and Health Insurance (Detailed Questions)  
File Structure: rectangular  
Cases: 43,533  
Variables: 31  
Record Length: 55  
Records Per Case: 1

Part 55: Medical and Health Expenditures (Payments for Medical Expenses)  
File Structure: rectangular  
Cases: 111,606  
Variables: 13  
Record Length: 38  
Records Per Case: 1

Part 57: Educational Expenses  
File Structure: rectangular  
Cases: 31,460  
Variables: 17  
Record Length: 50  
Records Per Case: 1

Part 50: Vehicle Operating Expenses (Licensing, Registration, and Inspection of Vehicles)  
File Structure: rectangular  
Cases: 14,430  
Variables: 11  
Record Length: 32  
Records Per Case: 1

Part 52: Insurance Other Than Health (Detailed Questions)  
File Structure: rectangular  
Cases: 115,103  
Variables: 47  
Record Length: 115  
Records Per Case: 1

Part 54: Hospitalization and Health Insurance (Medicare, Medicaid, and Other Plans Not Paid by CU)  
File Structure: rectangular  
Cases: 13,830  
Variables: 81  
Record Length: 152  
Records Per Case: 1

Part 56: Medical and Health Expenditures (Reimbursements for Medical Expenses)  
File Structure: rectangular  
Cases: 1,787  
Variables: 13  
Record Length: 38  
Records Per Case: 1

Part 58: Subscriptions, Memberships, Books, and Entertainment Expenses (Subscriptions and Memberships)  
File Structure: rectangular  
Cases: 33,111  
Variables: 11  
Record Length: 35  
Records Per Case: 1



Part 59: Subscriptions,  
Memberships, Books, and  
Entertainment Expenses (Books  
and Entertainment Expenses)  
File Structure: rectangular  
Cases: 25,815  
Variables: 27  
Record Length: 119  
Records Per Case: 1

Part 61: Trips and Vacations  
(Fully Reimbursed)  
File Structure: rectangular  
Cases: 5,549  
Variables: 11  
Record Length: 36  
Records Per Case: 1

Part 63: Trips and Vacations  
(Local Overnight Stays)  
File Structure: rectangular  
Cases: 249  
Variables: 27  
Record Length: 85  
Records Per Case: 1

Part 65: Miscellaneous  
Expenses (Contributions)  
File Structure: rectangular  
Cases: 35,285  
Variables: 11  
Record Length: 36  
Records Per Case: 1

Part 67: Expense Patterns for  
Food, Beverages, and Other  
Selected Items (Selected  
Services and Goods)  
File Structure: rectangular  
Cases: 38,004  
Variables: 45  
Record Length: 166  
Records Per Case: 1

Part 60: Trips and Vacations  
(Not Fully Reimbursed)  
File Structure: rectangular  
Cases: 20,546  
Variables: 117  
Record Length: 315  
Records Per Case: 1

Part 62: Trips and Vacations  
(Trip Expenses for  
Non-Consumer Unit Members)  
File Structure: rectangular  
Cases: 3,820  
Variables: 11  
Record Length: 36  
Records Per Case: 1

Part 64: Miscellaneous  
Expenses  
File Structure: rectangular  
Cases: 86,547  
Variables: 13  
Record Length: 36  
Records Per Case: 1

Part 66: Expense Patterns for  
Food, Beverages, and Other  
Selected Items (Food and  
Beverages)  
File Structure: rectangular  
Cases: 38,004  
Variables: 31  
Record Length: 130  
Records Per Case: 1

Part 68: Credit Liability  
(Credit Balances, Second  
Quarter Only)  
File Structure: rectangular  
Cases: 34,510  
Variables: 9  
Record Length: 33  
Records Per Case: 1

Part 69: Credit Liability  
(Credit Balances, Fifth  
Quarter Only)  
File Structure: rectangular  
Cases: 9,805  
Variables: 11  
Record Length: 42  
Records Per Case: 1

Part 71: Federal Income Tax  
Rebate During Third Quarter,  
2001  
File Structure: rectangular  
Cases: 2,320  
Variables: 25  
Record Length: 72  
Records Per Case: 1

Part 73: Data Dictionary for  
Parts 71 and 72

Part 75: Label File

Part 77: Vehicle Make and  
Model

Part 79: SAS Variance Program  
for Single Specified  
Expenditure Item

Part 81: Data Collection  
Instrument for Second, Third  
and Fourth Quarter, 2001, and  
First Quarter, 2002

Part 83: Codebook for All  
Parts (MSWord)

Part 70: Credit Liability  
(Finance Charges, Fifth  
Quarter Only)  
File Structure: rectangular  
Cases: 9,666  
Variables: 21  
Record Length: 76  
Records Per Case: 1

Part 72: Federal Income Tax  
Rebate During Fourth Quarter,  
2001  
File Structure: rectangular  
Cases: 6,594  
Variables: 25  
Record Length: 72  
Records Per Case: 1

Part 74: Aggregation File

Part 76: Universal  
Classification Codes

Part 78: Documentation File

Part 80: Data Collection  
Instrument for First Quarter  
2001 (PDF)

Part 82: Codebook for All  
Parts (PDF)

2001 CONSUMER EXPENDITURE INTERVIEW SURVEY  
PUBLIC USE MICRODATA  
DOCUMENTATION

December 31, 2002

U.S. Department of Labor  
Bureau of Labor Statistics  
Division of Consumer Expenditure Surveys

TABLE OF CONTENTS

Links to Pages

I.	INTRODUCTION.....	7
II.	CHANGES FROM THE 2000 CONSUMER EXPENDITURE FILES.....	9
III.	FILE INFORMATION.....	41
	A. DATA SET NAMES.....	44
	B. RECORD COUNTS AND LOGICAL RECORD LENGTHS.....	47
	C. DATA FLAGS.....	49
	D. FILE NOTATION.....	49
	E. ALLOCATION AND RECORD ORIGIN (EXPN).....	50
	F. DETAILED VARIABLE DESCRIPTIONS.....	51
	1. CONSUMER UNIT (CU) CHARACTERISTICS AND INCOME FILE (FMLY).....	51
	a. CU AND INTERVIEW IDENTIFIERS.....	51
	b. CU CHARACTERISTICS.....	52
	c. CHARACTERISTICS OF REFERENCE PERSON AND SPOUSE.....	61
	d. WORK EXPERIENCE OF REFERENCE PERSON AND SPOUSE.....	63
	e. INCOME.....	66
	f. OTHER MONEY RECEIPTS.....	79
	g. TAXES.....	83
	h. RETIREMENT AND PENSION DEDUCTIONS.....	85
	i. CONTRIBUTIONS.....	86
	j. FINANCIAL INFORMATION.....	88
	k. HOUSING STRUCTURE.....	92
	l. WEIGHTS.....	97
	m. SUMMARY EXPENDITURE DATA.....	99
	2. MEMBER CHARACTERISTICS AND INCOME (MEMB) FILE.....	122
	a. CU AND MEMBER IDENTIFIERS.....	123
	b. CHARACTERISTICS OF MEMBER.....	123
	c. WORK EXPERIENCE OF MEMBER.....	127
	d. INCOME.....	129
	e. TAXES.....	134
	f. RETIREMENT AND PENSION DEDUCTIONS.....	134
	3. MONTHLY EXPENDITURES (MTAB) FILE.....	137
	4. INCOME (ITAB) FILE.....	139
	5. DETAILED EXPENDITURES (EXPN) FILES.....	141
	a. General Survey Information - Major Household Appliances (SECTION 1, PART, C) (APL).....	141
	b. Rented Living Quarters - CU Tenure, Rental Payments, Facilities, and Services for Sample Unit and Other Units (SECTION 2, PARTS A & B) (RNT).....	144
	c. Owned Living Quarters and Other Owned Real Estate - Detailed Property (SECTION 3, PART B) (OPB).....	147
	d. Owned Living Quarters and Other Owned Real Estate - Disposed Property (SECTION 3, PART D) (OPD).....	149
	e. Owned Living Quarters and Other Owned Real Estate - Mortgages (SECTION 3, PART F) (MOR).....	151
	f. Owned Living Quarters and Other Owned Real Estate - Lump Sum Home Equity Loans (SECTION 3, PART G) (HEL).....	155
	g. Owned Living Quarters and Other Owned Real Estate - Line of Credit Home Equity Loans (SECTION 3, PART h) (OPH).....	160
	h. Owned Living Quarters and Other Owned Real Estate - Ownership Costs (SECTION 3, PART I) (OPI).....	161
	i. Utilities and Fuels for Owned and Rented Properties - Telephone Expenses (SECTION 4, PART A) (UTA).....	170
	j. Utilities and Fuels for Owned and Rented Properties - Additional Telephone Expenses (SECTION 4, PART B) (UTP).....	175

k.	Utilities and Fuels for Owned and Rented Properties - Screening Questions (SECTION 4, PART C) (UTB).....	175
l.	Utilities and Fuels for Owned and Rented Properties - Detailed Questions (SECTION 4, PART D) (UTC).....	176
m.	Construction, Repairs, Alterations, and Maintenance of Property - Screening Questions (SECTION 5, PART A) (CRA).....	180
n.	Construction, Repairs, Alterations, and Maintenance of Owned and Rented Property - Job Description (SECTION 5, PART B) (CRB).....	181
o.	Appliances, Household Equipment, and Other Selected Items - Purchase of Household Appliances (SECTION 6, PART A) (APA).....	188
p.	Appliances, Household Equipment, and Other Selected Items - Purchase of Household Appliances and Other Selected Items (SECTION 6, PART A) (APB).....	190
q.	Household Equipment Repairs, Service Contracts, and Furniture Repair and Reupholstering - Household Equipment Repairs and Service Contracts (SECTION 7, PART B) (EQB).....	192
r.	Household Equipment Repairs, Service Contracts, and Furniture Repair and Reupholstering - Furniture Repair or Reupholstering (SECTION 7, PART D) (EQD).....	193
s.	Home Furnishings and Related Household Items - Purchases (SECTION 8, PART A) (FRA).....	193
t.	Home Furnishings and Related Household Items - Rental, Leasing, or Repair of Furniture (SECTION 8, PART B) (FRB).....	195
u.	Clothing and Sewing Materials - Clothing (SECTION 9, PART A) (CLA).....	196
v.	Clothing and Sewing Materials - Infants Clothing, Watches, Jewelry, and Hairpieces (SECTION 9, PART B) (CLB).....	197
w.	Clothing and Sewing Materials - Sewing Materials (SECTION 9, PART C) (CLC).....	199
x.	Clothing and Sewing Materials - Clothing Services (SECTION 9, PART D) (CLD).....	200
y.	Rented and Leased Vehicles - Screening Questions (SECTION 10, PART A.1) (RTV).....	201
z.	Rented and Leased Vehicles - Detailed Questions for Leased Vehicles (SECTION 10, PART B) (LSD).....	202
aa.	Owned Vehicles - Detailed Questions (SECTION 11, PART B) (OVB).....	207
bb.	Owned Vehicles - Disposal of Vehicles (SECTION 11, PART C) (OVC).....	217
cc.	Vehicle Operating Expenses - Vehicle Maintenance and Repair, Parts and Equipment (SECTION 12, PART A) (VEQ).....	219
dd.	Vehicle Operating Expenses - Licensing, Registration, and Inspection of Vehicles (SECTION 12, PART B) (VLR).....	221
ee.	Vehicle Operating Expenses - Other Vehicle Operating Expenses (SECTION 12, PART C) (VOT).....	222
ff.	Insurance Other Than Health - Detailed Questions (SECTION 13, PART B) (INB).....	224
gg.	Hospitalization and Health Insurance - Detailed Questions (SECTION 14, PART B) (IHB).....	227
hh.	Hospitalization and Health Insurance - Medicare, Medicaid and Other Health Insurance Plans Not Directly Paid for by the CU (SECTION 14, PART C) (IHC).....	230
ii.	Hospitalization and Health Insurance - Payments for Medical Expenses (SECTION 15, PART B)(MDB).....	232
ii.	Medical and Health Expenditures - Reimbursements for Medical Expenses (SECTION 15, PART C) (MDC).....	233
kk.	Educational Expenses (SECTION 16) (EDA).....	235
ll.	Subscriptions, Memberships, Books and Entertainment Expenses Subscriptions and Memberships (SECTION 17, PART A) (SUB).....	237
mm.	Subscriptions, Memberships, Books, and Entertainment Expenses - Books and Entertainment Expenses (SECTION 17, PART B) (ENT).....	238

nn. Trips and Vacations – Trips Paid Entirely by CU and Partially Reimbursed Trips (SECTION 18, PART B & C) (TRV).....	240
oo. Trips and Vacations – 100% Reimbursed Trips (SECTION 18, PART D)(TRD) (TRD).....	248
pp. Trips and Vacations – Trip Expenses for Non-CU Members (SECTION 18, PARE E) (TRE).....	249
qq. Trips and Vacations – Local Overnight Stays (SECTION 18, PART F) (TRF)..	250
rr. Miscellaneous Expenses (SECTION 19, PART A) (MIS).....	252
ss. Miscellaneous Expenses – Contributions (SECTION 19, PART B) (CNT).....	254
tt. Expense Patterns for Food, Beverages, and Other Selected Items – Food and Beverages (SECTION 20, PART A) (XPA).....	255
uu. Expense Patterns for Food, Beverages, and Other Selected Items – Selected Services and Goods (SECTION 20, PART B) (XPB).....	257
vv. Credit Liability – Credit Balances – Second Quarter Only (SECTION 21, PART A.1) (FN2).....	259
ww. Credit Liability – Credit Balances– Fifth Quarter Only (SECTION 21, PART A.2).....	260
xx. Credit Liability – Finance Charges – Fifth Quarter Only (SECTION 21, PART B) (FNB).....	261
6. PROCESSING FILES.....	262
a. AGGregation file.....	262
b. LABEL file.....	263
c. UCC file.....	263
d. VEHICLE file.....	263
e. SAMPLLe program file.....	264
IV. TOPCODING AND OTHER NONDISCLOSURE REQUIREMENTS.....	265
A. CU CHARACTERISTICS AND INCOME FILE (FMLY).....	265
B. MEMBER CHARACTERISTICS AND INCOME FILE (MEMB).....	269
C. MONTHLY EXPENDITURE FILE (MTAB).....	270
D. INCOME FILE (ITAB).....	274
E. DETAILED EXPENDITURE FILES (EXPN).....	276
V. ESTIMATION PROCEDURE.....	281
A. DESCRIPTION OF PROCEDURES.....	281
1. GENERAL CONCEPTS.....	281
a. SAMPLE VERSUS POPULATION ESTIMATES.....	281
b. CALENDAR PERIOD VERSUS COLLECTION PERIOD.....	281
c. TIME PERIOD DIFFERENCES.....	283
d. COMPARISONS WITH PUBLISHED CE DATA.....	284
2. ESTIMATION OF UNWEIGHTED STATISTICS.....	284
a. AGGREGATE STATISTICS.....	284
b. MEANS.....	285
(i) SAMPLE MENAS.....	285
(ii) MEANS OF THOSE REPORTING.....	286
3. ESTIMATION OF WEIGHTED STATISTICS.....	286
B. DESCRIPTION OF ORMULAS.....	287
1. AGGREGATE EXPENDITURE ESTIMATES (UNWEIGHTED).....	287
2. SAMPLE MEAN EXPENDITURE ESTIMATES (UNWEIGHTED).....	288
3. AGGREGATE EXPENDITURE ESTIMATES (WEIGHTED).....	289
4. SAMPLE MEAN EXPENDIRUTE ESTIMATES (WEIGHTED).....	290
VI. RELIABILITY STATEMENT.....	291
A. DESCRIPTION OF SAMPLING AND NONSAMPLING ERRORS.....	291
B. ESTIMATING SAMPLING ERROR.....	291
1. VARIANCE ESTIMATION.....	291
2. STANDARD ERROR OF THE MEAN.....	292
3. STANDARD ERROR OF THE DIFFERENCE BETWEEN TWO MEANS.....	293
VII. MICRODATA VERIFICATION AND ESTIMATION METHODELOGY.....	295
A. SAMPLE PROGRAM.....	296
B. OUTPUT.....	316

VIII. DESCRIPTION OF THE SURVEY.....	321
IX. DATA COLLECTION AND PROCESSING.....	323
A. BUREAU OF THE CENSUS ACTIVITIES.....	323
B. BUREAU OF LABOR STATISTICS ACTIVITIES.....	323
X. SAMPLING STATEMENT.....	325
A. SURVEY SAMPLE DESIGN.....	325
B. COOPERATION LEVELS.....	326
C. WEIGHTING.....	326
D. STATE IDENTIFIER.....	327
XI. INTERPRETING THE DATA.....	329
XII. APPENDIX 1 – GLOSSARY.....	331
XIII. APPENDIX 2 – UNIVERSAL CLASSIFICATION CODE (UCC) TITLES.....	333
A. EXPENDITURE UCCS ON MTAB FILE.....	333
B. INCOME AND RELATED UCCS ON ITAB FILE.....	346
XIV. APPENDIX 3 – UCC AGGREGATION.....	349
XV. APPENDIX 4 – FMLY AND MEMB VARIABLES ORDERED BY START POSITION.....	353
A. FMLY FILE.....	353
B. MEMB FILE.....	359
XVI. APPENDIX 5 – PUBLICATIONS AND DATA RELEASES FROM THE CONSUMER EXPENDITURE SURVEY.....	361
XVII. INQUIRIES, SUGGESTIONS, AND COMMENTS.....	365

**c. CHARACTERISTICS OF REFERENCE PERSON AND SPOUSE**

<b>VARIABLE</b>	<b>ITEM DESCRIPTION</b>	<b>START POSITION</b>	<b>FORMAT</b>
AGE_REF	Age of reference person BLS derived	11	NUM(2)
AGE_REF_		13	CHAR(1)
REF_RACE	Race of reference person CODED 1. White 2. Black 3. American Indian, Aleut, or Eskimo 4. Asian or Pacific Islander BLS derived	671	CHAR(1)
REF_ACE		672	CHAR(1)
SEX_REF	Sex of reference person CODED 1. Male 2. Female BLS derived	738	CHAR(1)
SEX_REF_		739	CHAR(1)
MARITAL1	Marital status of reference person CODED 1. Married 2. Widowed 3. Divorced 4. Separated 5. Never married BLS derived	536	CHAR(1)
MARI_AL1		537	CHAR(1)



ORIGIN1	Origin or ancestry of reference person CODED	599	CHAR(1)
	<ul style="list-style-type: none"> <li>1. European: <ul style="list-style-type: none"> <li>German</li> <li>Italian</li> <li>Irish</li> <li>French</li> <li>Polish</li> <li>Russian</li> <li>English</li> <li>Scottish</li> <li>Dutch</li> <li>Swedish</li> <li>Hungarian</li> </ul> </li> <li>2. Spanish: <ul style="list-style-type: none"> <li>Mexican American</li> <li>Chicano</li> <li>Mexican</li> <li>Puerto Rican</li> <li>Cuban</li> <li>Central or South American</li> <li>Other Spanish</li> </ul> </li> <li>3. Afro-American (Black or Negro)</li> <li>4. Another group not listed/Don't know</li> </ul>		
	BLS derived		
ORIGIN1		600	CHAR(1)
EDUC_REF	Education of reference person CODED	233	CHAR(2)
	<ul style="list-style-type: none"> <li>00. Never attended school</li> <li>10. First through eight grade</li> <li>11. Ninth through twelfth grade (no H.S. diploma)</li> <li>12. High school graduate</li> <li>13. Some college, less than college graduate</li> <li>14. Associate's degree ( occupational/vocational or academic)</li> <li>15. Bachelor's degree</li> <li>16. Master's degree</li> <li>17. Professional/Doctorate degree</li> </ul>		
	BLS derived		
EDUC0REF		235	CHAR(1)
AGE2	Age of spouse	14	NUM(2)
	BLS derived		
AGE2_		18	CHAR(1)

**u. SECTION 9 CLOTHING AND SEWING MATERIALS**

**PART A Clothing (CLA)**

Positions 1-20 contain the variables QYEAR, NEWID, SEQNO, ALCNO and REC\_ORIG that are common to all sections of EXPN. Descriptions of these variables can be found in Section 1.

<b>VARIABLE</b>	<b>ITEM DESCRIPTION</b>	<b>START POSITION</b>	<b>FORMAT</b>
CLOTHYA	Item code CODED 100 Coats, jackets, and furs 110 Sport coats and tailored jackets 120 Suits 130 Vests 140 Sweaters and sweater sets 150 Pants, slacks, and jeans 160 Shorts and short sets (excluding athletic shorts) 170 Dresses 180 Skirts 190 Shirts, blouses and tops 200 Undergarments 210 Hosiery 220 Nightwear and loungewear 230 Accessories 240 Active sportswear 250 Uniforms (for which cost is not reimbursed) 260 Costumes 270 Combined clothing (100-260) 280 Footwear (include athletic shoes not specifically purchased for sports)	21	NUM(2)
	S09A col. c		
CLOTHQA	How many of this item did you purchase?  S09A col. e	25	NUM(4)
CLOTHQA_		29	CHAR(1)
CLOGHMOA	In what month did you purchase it?  S09A col. f	30	CHAR(2)
CLOT_MOA		32	CHAR(1)
CLOTHXA	How much did it cost?  S09A col. g	33	NUM(6)
CLOTHXA_		39	CHAR(1)

AGE_SEXA	Age/sex code of person for whom clothing item was purchased CODED 1. Male, 16 and over 2. Female, 16 and over 3. Male, 2 through 15 4. Female, 2 through 15 5. Infant under 2 years	40	CHAR(1)
AGE_EXA	BLS derived	41	CHAR(1)
CLOGFTA	Identifier of purchase as gift or non-gift CODED 1. Gift 2. Non-gift  BLS derived	42	CHAR(2)
CLOGFTA_		43	CHAR(1)

**v. SECTION 9 CLOTHING AND SEWING MATERIALS**

**PART B Infants Clothing, Watches, Jewelry and Hairpieces (CLB)**

Positions 1-20 contain the variables QYEAR, NEWID, SEQNO, ALCNO and REC\_ORIG that are common to all sections of EXPN. Descriptions of these variables can be found in Section 1.

<b>VARIABLE</b>	<b>ITEM DESCRIPTION</b>	<b>START POSITION</b>	<b>FORMAT</b>
CLOTHYB	Item code CODED 200 Same as Section 8, Part A - Bedroom Lines ( may be present of expenditures are allocated from layettes- CLOTHYB=330) 200 Same as Section 8, Part A - Bedroom Lines ( may be present of expenditures are allocated from layettes- CLOTHYB=330) 201 Same as Section 8, Part A - Bedroom 110 290 Infants coats, jackets, or snowsuits 300 Infants dresses and other outerwear 310 Infants' underwear and diapers, including disposable 320 Infants sleeping garments 330 Layettes (Allocated to codes 200, 201, 310,320, 340)20 Suits 340 Infants accessories 360 Combined clothing for infants (290-320, 340) 370 Watches 380 Jewelry 390 Hairpieces, wigs or toupees S09B col. c	21	CHAR(3)
CLOTHYB_		24	CHAR(1)

CLOGFTB	Was this item purchased for your CU or for someone outside of your CU? CODED 1 CU member 2 Non-CU member  S09B col. d	25	CHAR(1)
CLOGFTB_		26	CHAR(1)
CLOTHQB	How many of this item did you purchase?  S09B col. e	27	NUM(4)
CLOGHQB_		31	CHAR(1)
CLOTHMOB	In what month did you purchase it?  S09B col. f	32	CHAR(1)
CLOT_MOB		34	CHAR(1)
CLOTHXB	How much did it cost?  S09B col. g	35	NUM(6)
CLOTHXB_		41	CHAR(1)
AGE_SEXB	Age/sex code of person for whom item was purchased CODED 5 Infant under 2 years Blank Purchases of watches, jewelry, hairpieces, wigs, and toupees  BLS derived	42	CHAR(1)
AGE_EXB		43	CHAR(1)

APPENDIX B

PROBABILITY OF CLOTHING EXPENDITURES FOR CUs WITH HEADS OF CERTAIN  
GENDERS, ETHNICITIES, AND AGES

Figure B.1

Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (14~19)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs Headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing		
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
CUs with Heads Ages 14~19	European-headed CUs	Male-headed CUs	Gift	27.57	7	0.000046	20.00	3	0.000131
			Non-Gift	71.55	58	0.000990	171.00	3	0.001120
			Total	66.82	65	0.001036	95.50	6	0.001251
		Female-headed CUs	Gift	69.43	14	0.000232	37.57	30	0.002460
			Non-Gift	68.62	168	0.002749	92.00	4	0.000803
			Total	68.68	182	0.002981	43.97	34	0.003263
	Hispanic-headed CUs	Male-headed CUs	Gift	-	-	-	49.67	3	0.000325
			Non-Gift	16.00	1	0.000004	-	-	-
			Total	16.00	1	0.000004	49.67	3	0.000325
		Female-headed CUs	Gift	75.56	9	0.000162	110.42	12	0.002892
			Non-Gift	61.43	40	0.000586	77.24	21	0.003540
			Total	64.02	49	0.000748	89.30	33	0.006432
	African American-headed CUs	Male-headed CUs	Gift	26.50	2	0.000013	86.00	1	0.000188
			Non-Gift	105.95	19	0.000480	177.00	1	0.000386
			Total	98.38	21	0.000493	131.50	2	0.000574
		Female-headed CUs	Gift	-	-	-	26.00	3	0.000170
			Non-Gift	59.73	63	0.000897	101.92	25	0.005561
			Total	59.73	63	0.000897	93.79	28	0.005731
	Asian-headed CUs	Male-headed CUs	Gift	-	-	-	23.50	2	0.000103
			Non-Gift	42.36	14	0.000141	-	-	-
			Total	42.36	14	0.000141	23.50	2	0.000103
		Female-headed CUs	Gift	42.50	2	0.000020	-	-	-
			Non-Gift	73.50	22	0.000386	-	-	-
			Total	70.92	24	0.000406	-	-	-
Average/Total	Gift	58.00	7,550	0.104416	46.28	4,743	0.479057		
	Non-Gift	68.92	54,501	0.895584	83.69	2,852	0.520943		
	Total	67.59	62,051	1	60.33	7,595	1		

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.

Figure B.2

Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (20~24)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing			
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability	
CUs with Heads Ages 20~24	European-headed CUs	Male-headed CUs	Gift	69.70	82	0.001363	45.96	45	0.004514	
			Non-Gift	73.19	571	0.009965	98.20	49	0.010502	
			Total	72.75	653	0.011328	73.19	94	0.015016	
		Female-headed CUs	Gift	63.09	106	0.001595	36.41	59	0.004688	
			Non-Gift	57.91	763	0.010535	80.78	78	0.013752	
			Total	58.54	869	0.012129	61.67	137	0.018440	
		Hispanic-headed CUs	Male-headed CUs	Gift	63.00	25	0.000376	39.74	38	0.003296
				Non-Gift	63.26	283	0.004269	96.51	39	0.008215
				Total	63.24	308	0.004644	68.49	77	0.011511
	Female-headed CUs		Gift	31.62	21	0.000158	77.26	27	0.004553	
			Non-Gift	64.53	207	0.003185	66.62	79	0.011487	
			Total	61.50	228	0.003343	65.62	112	0.016040	
	African American-headed CUs	Male-headed CUs	Gift	74.30	10	0.000177	85.50	4	0.000746	
			Non-Gift	97.05	120	0.002777	54.67	18	0.002148	
			Total	95.30	130	0.002954	60.27	22	0.002894	
		Female-headed CUs	Gift	76.19	42	0.000763	87.06	18	0.003420	
			Non-Gift	64.62	412	0.006348	102.93	80	0.017971	
			Total	65.69	454	0.007111	100.01	98	0.021391	
	Asian-headed CUs	Male-headed CUs	Gift	12.67	3	0.000009	134.20	5	0.001464	
			Non-Gift	57.62	53	0.000728	44.33	3	0.000290	
			Total	55.21	56	0.000737	100.50	8	0.001755	
		Female-headed CUs	Gift	35.60	5	0.000042	51.50	8	0.000899	
			Non-Gift	60.23	112	0.001609	300.00	1	0.000655	
			Total	59.18	117	0.001651	79.11	9	0.001554	
Average/Total	Gift	58.00	7,550	0.104416	46.28	4,743	0.479057			
	Non-Gift	68.92	54,501	0.895584	83.69	2,852	0.520943			
	Total	67.59	62,051	1	60.33	7,595	1			

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.

Figure B.3

Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (25~34)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing			
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability	
CUs with Heads Ages 25~34	European-headed CUs	Male-headed CUs	Gift	86.97	307	0.006367	48.27	258	0.027179	
			Non-Gift	64.40	2,779	0.042673	77.68	478	0.081042	
			Total	66.65	3,086	0.049039	67.37	736	0.108221	
		Female-headed CUs	Gift	56.40	244	0.003281	43.24	218	0.020573	
			Non-Gift	63.30	2,557	0.038591	81.12	263	0.046562	
			Total	62.69	2,801	0.041872	63.95	481	0.067135	
		Hispanic-headed CUs	Male-headed CUs	Gift	66.94	102	0.001628	67.75	113	0.016710
				Non-Gift	63.00	1,378	0.020701	81.88	210	0.037529
				Total	63.28	1,480	0.022329	76.94	323	0.054238
	Female-headed CUs		Gift	46.05	73	0.000802	52.36	119	0.013599	
			Non-Gift	60.93	1,111	0.016140	65.74	160	0.022958	
			Total	60.01	1,184	0.016941	60.04	279	0.036558	
	African American-headed CUs	Male-headed CUs	Gift	44.64	96	0.001022	30.65	40	0.002676	
			Non-Gift	59.76	615	0.008764	89.23	71	0.013826	
			Total	57.72	711	0.009785	68.12	111	0.016502	
		Female-headed CUs	Gift	62.14	102	0.001511	43.21	68	0.006412	
			Non-Gift	57.60	1,366	0.018762	108.24	132	0.031184	
			Total	57.92	1,468	0.020274	86.13	200	0.037596	
	Asian-headed CUs	Male-headed CUs	Gift	67.32	37	0.000594	60.55	55	0.007268	
			Non-Gift	74.44	398	0.007064	94.79	34	0.007034	
			Total	73.83	435	0.007658	73.63	89	0.014302	
		Female-headed CUs	Gift	48.13	39	0.000448	61.40	35	0.004690	
			Non-Gift	36.35	216	0.001872	69.50	50	0.007584	
			Total	38.15	255	0.002320	66.16	85	0.012275	
Average/Total		Gift	58.00	7,550	0.104416	46.28	4,743	0.479057		
		Non-Gift	68.92	54,501	0.895584	83.69	2,852	0.520943		
		Total	67.59	62,051	1	60.33	7,595	1		

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.



Figure B.4

Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (35~44)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing			
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability	
CUs with Heads Ages 35~44	European-headed CUs	Male-headed CUs	Gift	50.64	528	0.006375	48.28	386	0.040674	
			Non-Gift	63.98	5,929	0.090455	81.87	239	0.042708	
			Total	62.89	6,457	0.096830	61.13	625	0.083382	
		Female-headed CUs	Gift	49.57	450	0.005318	33.77	267	0.019680	
			Non-Gift	66.73	4,192	0.066703	90.63	143	0.028286	
			Total	65.07	4,642	0.072022	53.60	410	0.047966	
		Hispanic-headed CUs	Male-headed CUs	Gift	50.09	108	0.001290	56.06	87	0.010644
				Non-Gift	61.00	1,290	0.018763	79.90	136	0.023718
				Total	60.16	1,398	0.020053	70.60	223	0.034362
	Female-headed CUs		Gift	53.12	108	0.001368	38.77	116	0.009815	
			Non-Gift	69.83	1,177	0.019598	102.13	67	0.014935	
			Total	68.43	1,285	0.020966	61.97	183	0.024750	
	African American-headed CUs	Male-headed CUs	Gift	75.91	56	0.001014	69.59	66	0.010024	
			Non-Gift	87.43	735	0.015323	131.24	21	0.006015	
			Total	86.62	791	0.016336	84.47	87	0.016040	
		Female-headed CUs	Gift	70.00	64	0.001068	55.05	102	0.012255	
			Non-Gift	69.14	1,540	0.025389	101.96	68	0.015132	
			Total	69.18	1,604	0.026457	73.81	170	0.027387	
	Asian-headed CUs	Male-headed CUs	Gift	64.82	67	0.001036	40.71	34	0.003021	
			Non-Gift	59.08	447	0.006296	72.73	40	0.006349	
			Total	59.82	514	0.007332	58.01	74	0.009370	
		Female-headed CUs	Gift	64.88	32	0.000495	59.03	35	0.004509	
			Non-Gift	67.87	473	0.007655	56.65	17	0.002102	
			Total	67.68	505	0.008150	58.25	52	0.006611	
Average/Total		Gift	58.00	7,550	0.104416	46.28	4,743	0.479057		
		Non-Gift	68.92	54,501	0.895584	83.69	2,852	0.520943		
		Total	67.59	62,051	1	60.33	7,595	1		

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.

Figure B.5

Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (45~54)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing			
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability	
CUs with Heads Ages 45~54	European-headed CUs	Male-headed CUs	Gift	67.60	702	0.011316	42.52	366	0.033967	
			Non-Gift	90.24	4,905	0.105541	76.15	74	0.012299	
			Total	87.41	5,607	0.116857	48.18	440	0.046266	
		Female-headed CUs	Gift	57.83	678	0.009348	39.49	293	0.025252	
			Non-Gift	69.17	3,404	0.056144	70.00	31	0.004736	
			Total	67.29	4,082	0.065493	42.41	324	0.029988	
		Hispanic-headed CUs	Male-headed CUs	Gift	53.50	86	0.001097	30.73	52	0.003488
				Non-Gift	62.30	710	0.010547	51.19	26	0.002905
				Total	61.35	796	0.011644	37.55	78	0.006393
	Female-headed CUs		Gift	55.44	84	0.001110	49.52	61	0.006593	
			Non-Gift	62.62	806	0.012034	86.02	49	0.009199	
			Total	61.94	890	0.013145	65.78	110	0.015793	
	African American-headed CUs	Male-headed CUs	Gift	87.11	47	0.000976	54.63	46	0.005485	
			Non-Gift	74.89	551	0.009840	51.33	6	0.000672	
			Total	75.85	598	0.010816	54.25	52	0.006157	
		Female-headed CUs	Gift	49.14	73	0.000855	67.18	77	0.011290	
			Non-Gift	74.17	906	0.016023	95.26	35	0.007277	
			Total	72.30	979	0.016878	75.96	112	0.018567	
	Asian-headed CUs	Male-headed CUs	Gift	63.08	93	0.001399	74.00	46	0.007429	
			Non-Gift	67.90	629	0.010184	46.58	12	0.001220	
			Total	67.28	722	0.011583	68.33	58	0.008649	
		Female-headed CUs	Gift	54.29	41	0.000531	41.10	29	0.002602	
			Non-Gift	81.41	239	0.004639	106.56	9	0.002093	
			Total	77.44	280	0.005170	56.61	38	0.004695	
Average/Total	Gift	58.00	7,550	0.104416	46.28	4,743	0.479057			
	Non-Gift	68.92	54,501	0.895584	83.69	2,852	0.520943			
	Total	67.59	62,051	1	60.33	7,595	1			

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.

Figure B.6

Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (55~64)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing			
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability	
CUs with Heads Ages 55~64	European-headed CUs	Male-headed CUs	Gift	53.89	760	0.009765	44.25	457	0.044131	
			Non-Gift	72.87	3,213	0.055825	82.04	27	0.004834	
			Total	69.24	3,973	0.065590	46.35	484	0.048965	
		Female-headed CUs	Gift	53.60	552	0.007055	48.83	288	0.030693	
			Non-Gift	76.69	1,881	0.034396	75.75	4	0.000661	
			Total	71.45	2,433	0.041450	49.20	292	0.031354	
		Hispanic-headed CUs	Male-headed CUs	Gift	44.15	62	0.000653	36.95	38	0.003064
				Non-Gift	55.19	347	0.004566	62.82	17	0.002331
				Total	53.51	409	0.005219	44.95	55	0.005395
	Female-headed CUs		Gift	46.82	72	0.000804	65.59	17	0.002434	
			Non-Gift	53.68	258	0.003302	-	-	-	
			Total	52.18	330	0.004106	65.59	17	0.002434	
	African American-headed CUs	Male-headed CUs	Gift	74.48	21	0.000373	35.07	28	0.002143	
			Non-Gift	109.23	364	0.009481	110.00	8	0.001921	
			Total	107.34	385	0.009854	51.72	36	0.004064	
		Female-headed CUs	Gift	53.90	67	0.000861	43.75	56	0.005347	
			Non-Gift	74.72	511	0.009104	69.00	13	0.001958	
			Total	72.30	578	0.009965	48.51	69	0.007305	
	Asian-headed CUs	Male-headed CUs	Gift	55.20	20	0.000263	46.63	19	0.001934	
			Non-Gift	80.09	258	0.004927	93.39	18	0.003669	
			Total	78.30	278	0.005190	69.38	37	0.005603	
		Female-headed CUs	Gift	50.46	13	0.000156	24.38	21	0.001117	
			Non-Gift	42.02	131	0.001312	-	-	-	
			Total	42.78	144	0.001469	24.38	21	0.001117	
Average/Total			Gift	58.00	7,550	0.104416	46.28	4,743	0.479057	
			Non-Gift	68.92	54,501	0.895584	83.69	2,852	0.520943	
			Total	67.59	62,051	1	60.33	7,595	1	

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.



Figure B.7

Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (65~74)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing		
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
CUs with Heads Ages 65~74	European-headed CUs	Male-headed CUs	Gift	66.99	358	0.005719	57.21	155	0.019355
			Non-Gift	65.42	1,827	0.028499	-	-	-
			Total	65.68	2,185	0.034218	57.21	155	0.019355
		Female-headed CUs	Gift	51.76	332	0.004097	30.09	135	0.008865
			Non-Gift	70.44	1,198	0.020120	-	-	-
			Total	66.38	1,530	0.024217	30.09	135	0.008865
	Hispanic-headed CUs	Male-headed CUs	Gift	34.25	88	0.000719	48.44	25	0.002643
			Non-Gift	54.60	172	0.002239	53.00	2	0.000231
			Total	47.71	260	0.002958	48.78	27	0.002874
		Female-headed CUs	Gift	42.00	24	0.000240	18.88	26	0.001072
			Non-Gift	61.06	77	0.001121	-	-	-
			Total	56.53	101	0.001361	18.88	26	0.001072
	African American-headed CUs	Male-headed CUs	Gift	53.32	31	0.000394	36.06	17	0.001338
			Non-Gift	72.04	213	0.003659	-	-	-
			Total	69.66	244	0.004053	36.06	17	0.001338
		Female-headed CUs	Gift	49.89	79	0.000940	48.63	27	0.002866
			Non-Gift	60.18	445	0.006386	170.00	2	0.000742
			Total	58.63	524	0.007325	57.00	29	0.003608
	Asian-headed CUs	Male-headed CUs	Gift	49.54	61	0.000721	52.00	24	0.002724
			Non-Gift	65.08	155	0.002405	-	-	-
			Total	60.69	216	0.003126	52.00	24	0.002724
		Female-headed CUs	Gift	76.80	35	0.000641	93.50	6	0.001224
			Non-Gift	79.15	94	0.001774	-	-	-
			Total	78.51	129	0.002415	93.50	6	0.001224
Average/Total		Gift	58.00	7,550	0.104416	46.28	4,743	0.479057	
		Non-Gift	68.92	54,501	0.895584	83.69	2,852	0.520943	
		Total	67.59	62,051	1	60.33	7,595	1	

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.

Figure B.8

Probability of Clothing Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (75+)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing		
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
CUs with Heads Ages 75+	European-headed CUs	Male-headed CUs	Gift	60.25	167	0.002399	44.63	63	0.006137
			Non-Gift	66.90	850	0.013559	-	-	-
			Total	65.81	1,017	0.015958	44.63	63	0.006137
		Female-headed CUs	Gift	47.19	183	0.002059	27.20	80	0.004749
			Non-Gift	59.35	899	0.012722	-	-	-
			Total	57.29	1,082	0.014781	27.20	80	0.004749
	Hispanic-headed CUs	Male-headed CUs	Gift	37.43	7	0.000062	28.50	2	0.000124
			Non-Gift	31.50	42	0.000315	-	-	-
			Total	32.35	49	0.000378	28.50	2	0.000124
		Female-headed CUs	Gift	69.23	40	0.000660	11.47	15	0.000375
			Non-Gift	77.19	64	0.001178	-	-	-
			Total	74.13	104	0.001838	11.47	15	0.000375
	African American-headed CUs	Male-headed CUs	Gift	103.10	21	0.000516	16.75	12	0.000439
			Non-Gift	70.75	48	0.000810	-	-	-
			Total	80.59	69	0.001326	16.75	12	0.000439
		Female-headed CUs	Gift	37.11	9	0.000080	41.20	5	0.000450
			Non-Gift	47.96	107	0.001224	-	-	-
			Total	47.12	116	0.001303	41.20	5	0.000450
	Asian-headed CUs	Male-headed CUs	Gift	49.00	3	0.000035	109.00	2	0.000476
			Non-Gift	51.30	44	0.000538	54.00	4	0.000471
			Total	51.15	47	0.000573	72.33	6	0.000947
		Female-headed CUs	Gift	-	-	-	-	-	-
			Non-Gift	73.68	44	0.000773	-	-	-
			Total	73.68	44	0.000773	-	-	-
Average/Total	Gift	58.00	7,550	0.104416	46.28	4,743	0.479057		
	Non-Gift	68.92	54,501	0.895584	83.69	2,852	0.520943		
	Total	67.59	62,051	1	60.33	7,595	1		

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events

APPENDIX C

CONDITIONAL PROBABILITY OF CLOTHING GIFT EXPENDITURES GIVEN THAT  
CLOTHING EXPENDITURES HAVE BEEN MADE BY CUs WITH HEADS OF CERTAIN  
GENDERS, ETHNICITIES, AND AGES

Figure C.1

Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (14~19)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing		
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
CUs with Heads Ages 14~19	European-headed CUs	Male-headed CUs	Gift	27.57	7	0.0444	20.00	3	0.1047
			Non-Gift	71.55	58	0.9556	171.00	3	0.8953
			Total	66.82	65	1	95.50	6	1
		Female-headed CUs	Gift	69.43	14	0.0778	37.57	30	0.7538
			Non-Gift	68.62	168	0.9222	92.00	4	0.2462
			Total	68.68	182	1	43.97	34	1
	Hispanic-headed CUs	Male-headed CUs	Gift	-	-	-	49.67	3	1.0000
			Non-Gift	16.00	1	1.0000	-	-	-
			Total	16.00	1	1	49.67	3	1
		Female-headed CUs	Gift	75.56	9	0.2168	110.42	12	0.4496
			Non-Gift	61.43	40	0.7832	77.24	21	0.5504
			Total	64.02	49	1	89.30	33	1
	African American-headed CUs	Male-headed CUs	Gift	26.50	2	0.0257	86.00	1	0.3270
			Non-Gift	105.95	19	0.9743	177.00	1	0.6730
			Total	98.38	21	1	131.50	2	1
		Female-headed CUs	Gift	-	-	-	26.00	3	0.0297
			Non-Gift	59.73	63	1.0000	101.92	25	0.9703
			Total	59.73	63	1	93.79	28	1
	Asian-headed CUs	Male-headed CUs	Gift	-	-	-	23.50	2	1.0000
			Non-Gift	42.36	14	1.0000	-	-	-
			Total	42.36	14	1	23.50	2	1
		Female-headed CUs	Gift	42.50	2	0.0499	-	-	-
			Non-Gift	73.50	22	0.9501	-	-	-
			Total	70.92	24	1	-	-	-
Average/Total	Gift	58.00	7,550	0.1044	46.28	4,743	0.4791		
	Non-Gift	68.92	54,501	0.8956	83.69	2,852	0.5209		
	Total	67.59	62,051	1	60.33	7,595	1		

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.



Figure C.2

Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (20~24)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing			
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability	
CUs with Heads Ages 20~24	European-headed CUs	Male-headed CUs	Gift	69.70	82	0.1203	45.96	45	0.3006	
			Non-Gift	73.19	571	0.8797	98.20	49	0.6994	
			Total	72.75	653	1	73.19	94	1	
		Female-headed CUs	Gift	63.09	106	0.1315	36.41	59	0.2542	
			Non-Gift	57.91	763	0.8685	80.78	78	0.7458	
			Total	58.54	869	1	61.67	137	1	
		Hispanic-headed CUs	Male-headed CUs	Gift	63.00	25	0.0809	39.74	38	0.2863
				Non-Gift	63.26	283	0.9191	96.51	39	0.7137
				Total	63.24	308	1	68.49	77	1
	Female-headed CUs		Gift	31.62	21	0.0474	77.26	27	0.2838	
			Non-Gift	64.53	207	0.9526	66.62	79	0.7162	
			Total	61.50	228	1	65.62	112	1	
	African American-headed CUs	Male-headed CUs	Gift	74.30	10	0.0600	85.50	4	0.2579	
			Non-Gift	97.05	120	0.9400	54.67	18	0.7421	
			Total	95.30	130	1	60.27	22	1	
		Female-headed CUs	Gift	76.19	42	0.1073	87.06	18	0.1599	
			Non-Gift	64.62	412	0.8927	102.93	80	0.8401	
			Total	65.69	454	1	100.01	98	1	
	Asian-headed CUs	Male-headed CUs	Gift	12.67	3	0.0123	134.20	5	0.8346	
			Non-Gift	57.62	53	0.9877	44.33	3	0.1654	
			Total	55.21	56	1	100.50	8	1	
		Female-headed CUs	Gift	35.60	5	0.0257	51.50	8	0.5787	
			Non-Gift	60.23	112	0.9743	300.00	1	0.4213	
			Total	59.18	117	1	79.11	9	1	
Average/Total			Gift	58.00	7,550	0.1044	46.28	4,743	0.4791	
			Non-Gift	68.92	54,501	0.8956	83.69	2,852	0.5209	
			Total	67.59	62,051	1	60.33	7,595	1	

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.



Figure C.3

Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (25~34)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing		
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
CUs with Heads Ages 25~34	European-headed CUs	Male-headed CUs	Gift	86.97	307	0.1298	48.27	258	0.2511
			Non-Gift	64.40	2,779	0.8702	77.68	478	0.7489
			Total	66.65	3,086	1	67.37	736	1
		Female-headed CUs	Gift	56.40	244	0.0784	43.24	218	0.3064
			Non-Gift	63.30	2,557	0.9216	81.12	263	0.6936
			Total	62.69	2,801	1	63.95	481	1
	Hispanic-headed CUs	Male-headed CUs	Gift	66.94	102	0.0729	67.75	113	0.3081
			Non-Gift	63.00	1,378	0.9271	81.88	210	0.6919
			Total	63.28	1,480	1	76.94	323	1
		Female-headed CUs	Gift	46.05	73	0.0473	52.36	119	0.3720
			Non-Gift	60.93	1,111	0.9527	65.74	160	0.6280
			Total	60.01	1,184	1	60.04	279	1
	African American-headed CUs	Male-headed CUs	Gift	44.64	96	0.1044	30.65	40	0.1621
			Non-Gift	59.76	615	0.8956	89.23	71	0.8379
			Total	57.72	711	1	68.12	111	1
		Female-headed CUs	Gift	62.14	102	0.0745	43.21	68	0.1706
			Non-Gift	57.60	1,366	0.9255	108.24	132	0.8294
			Total	57.92	1,468	1	86.13	200	1
	Asian-headed CUs	Male-headed CUs	Gift	67.32	37	0.0776	60.55	55	0.5082
			Non-Gift	74.44	398	0.9224	94.79	34	0.4918
			Total	73.83	435	1	73.63	89	1
		Female-headed CUs	Gift	48.13	39	0.1929	61.40	35	0.3821
			Non-Gift	36.35	216	0.8071	69.50	50	0.6179
			Total	38.15	255	1	66.16	85	1
Average/Total		Gift	58.00	7,550	0.1044	46.28	4,743	0.4791	
		Non-Gift	68.92	54,501	0.8956	83.69	2,852	0.5209	
		Total	67.59	62,051	1	60.33	7,595	1	

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.

Figure C.4

Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (35~44)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing		
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
CUs with Heads Ages 35~44	European-headed CUs	Male-headed CUs	Gift	50.64	528	0.0658	48.28	386	0.4878
			Non-Gift	63.98	5,929	0.9342	81.87	239	0.5122
			Total	62.89	6,457	1	61.13	625	1
		Female-headed CUs	Gift	49.57	450	0.0738	33.77	267	0.4103
			Non-Gift	66.73	4,192	0.9262	90.63	143	0.5897
			Total	65.07	4,642	1	53.60	410	1
	Hispanic-headed CUs	Male-headed CUs	Gift	50.09	108	0.0643	56.06	87	0.3098
			Non-Gift	61.00	1,290	0.9357	79.90	136	0.6902
			Total	60.16	1,398	1	70.60	223	1
		Female-headed CUs	Gift	53.12	108	0.0652	38.77	116	0.3966
			Non-Gift	69.83	1,177	0.9348	102.13	67	0.6034
			Total	68.43	1,285	1	61.97	183	1
	African American-headed CUs	Male-headed CUs	Gift	75.91	56	0.0620	69.59	66	0.6250
			Non-Gift	87.43	735	0.9380	131.24	21	0.3750
			Total	86.62	791	1	84.47	87	1
		Female-headed CUs	Gift	70.00	64	0.0404	55.05	102	0.4475
			Non-Gift	69.14	1,540	0.9596	101.96	68	0.5525
			Total	69.18	1,604	1	73.81	170	1
	Asian-headed CUs	Male-headed CUs	Gift	64.82	67	0.1412	40.71	34	0.3224
			Non-Gift	59.08	447	0.8588	72.73	40	0.6776
			Total	59.82	514	1	58.01	74	1
		Female-headed CUs	Gift	64.88	32	0.0607	59.03	35	0.6821
			Non-Gift	67.87	473	0.9393	56.65	17	0.3179
			Total	67.68	505	1	58.25	52	1
Average/Total		Gift	58.00	7,550	0.1044	46.28	4,743	0.4791	
		Non-Gift	68.92	54,501	0.8956	83.69	2,852	0.5209	
		Total	67.59	62,051	1	60.33	7,595	1	

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.

Figure C.5

Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (45~54)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing			
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability	
CUs with Heads Ages 45~54	European-headed CUs	Male-headed CUs	Gift	67.60	702	0.0968	42.52	366	0.7342	
			Non-Gift	90.24	4,905	0.9032	76.15	74	0.2658	
			Total	87.41	5,607	1	48.18	440	1	
		Female-headed CUs	Gift	57.83	678	0.1427	39.49	293	0.8421	
			Non-Gift	69.17	3,404	0.8573	70.00	31	0.1579	
			Total	67.29	4,082	1	42.41	324	1	
		Hispanic-headed CUs	Male-headed CUs	Gift	53.50	86	0.0942	30.73	52	0.5456
				Non-Gift	62.30	710	0.9058	51.19	26	0.4544
				Total	61.35	796	1	37.55	78	1
	Female-headed CUs		Gift	55.44	84	0.0845	49.52	61	0.4175	
			Non-Gift	62.62	806	0.9155	86.02	49	0.5825	
			Total	61.94	890	1	65.78	110	1	
	African American-headed CUs	Male-headed CUs	Gift	87.11	47	0.0903	54.63	46	0.8908	
			Non-Gift	74.89	551	0.9097	51.33	6	0.1092	
			Total	75.85	598	1	54.25	52	1	
		Female-headed CUs	Gift	49.14	73	0.0507	67.18	77	0.6081	
			Non-Gift	74.17	906	0.9493	95.26	35	0.3919	
			Total	72.30	979	1	75.96	112	1	
	Asian-headed CUs	Male-headed CUs	Gift	63.08	93	0.1208	74.00	46	0.8589	
			Non-Gift	67.90	629	0.8792	46.58	12	0.1411	
			Total	67.28	722	1	68.33	58	1	
		Female-headed CUs	Gift	54.29	41	0.1027	41.10	29	0.5542	
			Non-Gift	81.41	239	0.8973	106.56	9	0.4458	
			Total	77.44	280	1	56.61	38	1	
Average/Total	Gift	58.00	7,550	0.1044	46.28	4,743	0.4791			
	Non-Gift	68.92	54,501	0.8956	83.69	2,852	0.5209			
	Total	67.59	62,051	1	60.33	7,595	1			

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.



Figure C.6

## Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (55~64)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing		
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
CUs with Heads Ages 55~64	European-headed CUs	Male-headed CUs	Gift	53.89	760	0.1489	44.25	457	0.9013
			Non-Gift	72.87	3,213	0.8511	82.04	27	0.0987
			Total	69.24	3,973	1	46.35	484	1
		Female-headed CUs	Gift	53.60	552	0.1702	48.83	288	0.9789
			Non-Gift	76.69	1,881	0.8298	75.75	4	0.0211
			Total	71.45	2,433	1	49.20	292	1
	Hispanic-headed CUs	Male-headed CUs	Gift	44.15	62	0.1251	36.95	38	0.5680
			Non-Gift	55.19	347	0.8749	62.82	17	0.4320
			Total	53.51	409	1	44.95	55	1
		Female-headed CUs	Gift	46.82	72	0.1958	65.59	17	1.0000
			Non-Gift	53.68	258	0.8042	-	-	-
			Total	52.18	330	1	65.59	17	1
	African American-headed CUs	Male-headed CUs	Gift	74.48	21	0.0378	35.07	28	0.5274
			Non-Gift	109.23	364	0.9622	110.00	8	0.4726
			Total	107.34	385	1	51.72	36	1
		Female-headed CUs	Gift	53.90	67	0.0864	43.75	56	0.7320
			Non-Gift	74.72	511	0.9136	69.00	13	0.2680
			Total	72.30	578	1	48.51	69	1
	Asian-headed CUs	Male-headed CUs	Gift	55.20	20	0.0507	46.63	19	0.3451
			Non-Gift	80.09	258	0.9493	93.39	18	0.6549
			Total	78.30	278	1	69.38	37	1
		Female-headed CUs	Gift	50.46	13	0.1065	24.38	21	1.0000
			Non-Gift	42.02	131	0.8935	-	-	-
			Total	42.78	144	1	24.38	21	1
Average/Total		Gift	58.00	7,550	0.1044	46.28	4,743	0.4791	
		Non-Gift	68.92	54,501	0.8956	83.69	2,852	0.5209	
		Total	67.59	62,051	1	60.33	7,595	1	

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.<sup>2</sup> Number of purchase events.

Figure C.7

Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (65~74)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing		
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
CUs with Heads Ages 65~74	European-headed CUs	Male-headed CUs	Gift	66.99	358	0.1671	57.21	155	1.0000
			Non-Gift	65.42	1,827	0.8329	-	-	-
			Total	65.68	2,185	1	57.21	155	1
		Female-headed CUs	Gift	51.76	332	0.1692	30.09	135	1.0000
			Non-Gift	70.44	1,198	0.8308	-	-	-
			Total	66.38	1,530	1	30.09	135	1
	Hispanic-headed CUs	Male-headed CUs	Gift	34.25	88	0.2430	48.44	25	0.9195
			Non-Gift	54.60	172	0.7570	53.00	2	0.0805
			Total	47.71	260	1	48.78	27	1
		Female-headed CUs	Gift	42.00	24	0.1765	18.88	26	1.0000
			Non-Gift	61.06	77	0.8235	-	-	-
			Total	56.53	101	1	18.88	26	1
	African American-headed CUs	Male-headed CUs	Gift	53.32	31	0.0972	36.06	17	1.0000
			Non-Gift	72.04	213	0.9028	-	-	-
			Total	69.66	244	1	36.06	17	1
		Female-headed CUs	Gift	49.89	79	0.1283	48.63	27	0.7943
			Non-Gift	60.18	445	0.8717	170.00	2	0.2057
			Total	58.63	524	1	57.00	29	1
	Asian-headed CUs	Male-headed CUs	Gift	49.54	61	0.2305	52.00	24	1.0000
			Non-Gift	65.08	155	0.7695	-	-	-
			Total	60.69	216	1	52.00	24	1
		Female-headed CUs	Gift	76.80	35	0.2654	93.50	6	1.0000
			Non-Gift	79.15	94	0.7346	-	-	-
			Total	78.51	129	1	93.50	6	1
Average/Total			Gift	58.00	7,550	0.1044	46.28	4,743	0.4791
			Non-Gift	68.92	54,501	0.8956	83.69	2,852	0.5209
			Total	67.59	62,051	1	60.33	7,595	1

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.

Figure C.8

Conditional Probability of Clothing Gift Expenditures for CUs with Heads of Certain Genders, Ethnicities, and Ages (75+)

CUs with Head of Certain Ages	CUs with Heads of Certain Ethnicity	CUs headed by Gender	CLOGFTA	CUs Purchasing of Adult Clothing			CUs purchasing of Infant Clothing		
				Mean <sup>1</sup>	N <sup>2</sup>	Probability	Mean <sup>1</sup>	N <sup>2</sup>	Probability
CUs with Heads Ages 75+	European-headed CUs	Male-headed CUs	Gift	60.25	167	0.1503	44.63	63	1.0000
			Non-Gift	66.90	850	0.8497	-	-	-
			Total	65.81	1,017	1	44.63	63	1
		Female-headed CUs	Gift	47.19	183	0.1393	27.20	80	1.0000
			Non-Gift	59.35	899	0.8607	-	-	-
			Total	57.29	1,082	1	27.20	80	1
	Hispanic-headed CUs	Male-headed CUs	Gift	37.43	7	0.1653	28.50	2	1.0000
			Non-Gift	31.50	42	0.8347	-	-	-
			Total	32.35	49	1	28.50	2	1
		Female-headed CUs	Gift	69.23	40	0.3592	11.47	15	1.0000
			Non-Gift	77.19	64	0.6408	-	-	-
			Total	74.13	104	1	11.47	15	1
	African American-headed CUs	Male-headed CUs	Gift	103.10	21	0.3893	16.75	12	1.0000
			Non-Gift	70.75	48	0.6107	-	-	-
			Total	80.59	69	1	16.75	12	1
		Female-headed CUs	Gift	37.11	9	0.0611	41.20	5	1.0000
			Non-Gift	47.96	107	0.9389	-	-	-
			Total	47.12	116	1	41.20	5	1
	Asian-headed CUs	Male-headed CUs	Gift	49.00	3	0.0611	109.00	2	0.5023
			Non-Gift	51.30	44	0.9389	54.00	4	0.4977
			Total	51.15	47	1	72.33	6	1
		Female-headed CUs	Gift	-	-	-	-	-	-
			Non-Gift	73.68	44	1.0000	-	-	-
			Total	73.68	44	1	-	-	-
Average/Total	Gift	58.00	7,550	0.1044	46.28	4,743	0.4791		
	Non-Gift	68.92	54,501	0.8956	83.69	2,852	0.5209		
	Total	67.59	62,051	1	60.33	7,595	1		

Note: Calculated using the 2001 CEX

<sup>1</sup> Mean expenditure for each purchase event.

<sup>2</sup> Number of purchase events.

## APPENDIX D

ANOVA TEST: SIGNIFICANT MEAN EXPENDITURE DIFFERENCES ON ADULT AND  
INFANT CLOTHING BY CUs WITH HEADS OF CERTAIN AGES BASED ON CLOTHING  
PURCHASE EVENT AND ITEM PURCHASED

Table D.1

ANOVA Test: Significant Mean Differences on Adult Clothing Expenditures by CUs with Heads of Certain Ages (Purchase Event)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 14~19	Ages 20~24	1.71004	6.14486	1.000	-16.9149	20.3350
	Ages 25~34	4.59496	5.83722	.994	-13.0975	22.2875
	Ages 35~44	1.71400	5.80241	1.000	-15.8730	19.3010
	Ages 45~54	-8.50805	5.81843	.828	-26.1436	9.1275
	Ages 55~64	-3.11878	5.87210	.999	-20.9170	14.6795
	Ages 65~74	2.71711	5.95996	1.000	-15.3474	20.7816
	Ages 75+	5.84477	6.18988	.982	-12.9167	24.6062
Ages 20~24	Ages 14~19	-1.71004	6.14486	1.000	-20.3350	16.9149
	Ages 25~34	2.88492	2.46944	.941	-4.5999	10.3697
	Ages 35~44	.00396	2.38599	1.000	-7.2279	7.2359
	Ages 45~54	-10.21809(*)	2.42469	.001	-17.5673	-2.8689
	Ages 55~64	-4.82882	2.55080	.556	-12.5602	2.9026
	Ages 65~74	1.00706	2.74701	1.000	-7.3191	9.3332
	Ages 75+	4.13473	3.21553	.904	-5.6115	13.8809
Ages 25~34	Ages 14~19	-4.59496	5.83722	.994	-22.2875	13.0975
	Ages 20~24	-2.88492	2.46944	.941	-10.3697	4.5999
	Ages 35~44	-2.88097	1.41663	.459	-7.1748	1.4128
	Ages 45~54	-13.10302(*)	1.48087	.000	-17.5915	-8.6145
	Ages 55~64	-7.71374(*)	1.67942	.000	-12.8040	-2.6234
	Ages 65~74	-1.87786	1.96468	.980	-7.8328	4.0770
	Ages 75+	1.24980	2.57944	1.000	-6.5684	9.0680
Ages 35~44	Ages 14~19	-1.71400	5.80241	1.000	-19.3010	15.8730
	Ages 20~24	-.00396	2.38599	1.000	-7.2359	7.2279
	Ages 25~34	2.88097	1.41663	.459	-1.4128	7.1748
	Ages 45~54	-10.22205(*)	1.33710	.000	-14.2748	-6.1693
	Ages 55~64	-4.83278(*)	1.55412	.040	-9.5433	-.1223
	Ages 65~74	1.00311	1.85871	.999	-4.6306	6.6368
	Ages 75+	4.13077	2.49967	.718	-3.4457	11.7072

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .



Table D.1 (continued)

ANOVA Test: Significant Mean Differences on Adult Clothing Expenditures by CUs with Heads of Certain Ages (Purchase Event)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 45~54	Ages 14~19	8.50805	5.81843	.828	-9.1275	26.1436
	Ages 20~24	10.21809(*)	2.42469	.001	2.8689	17.5673
	Ages 25~34	13.10302(*)	1.48087	.000	8.6145	17.5915
	Ages 35~44	10.22205(*)	1.33710	.000	6.1693	14.2748
	Ages 55~64	5.38928(*)	1.61290	.019	.5006	10.2779
	Ages 65~74	11.22516(*)	1.90812	.000	5.4417	17.0086
	Ages 75+	14.35282(*)	2.53663	.000	6.6643	22.0413
Ages 55~64	Ages 14~19	3.11878	5.87210	.999	-14.6795	20.9170
	Ages 20~24	4.82882	2.55080	.556	-2.9026	12.5602
	Ages 25~34	7.71374(*)	1.67942	.000	2.6234	12.8040
	Ages 35~44	4.83278(*)	1.55412	.040	.1223	9.5433
	Ages 45~54	-5.38928(*)	1.61290	.019	-10.2779	-.5006
	Ages 65~74	5.83588	2.06601	.089	-.4262	12.0979
	Ages 75+	8.96354(*)	2.65744	.017	.9089	17.0182
Ages 65~74	Ages 14~19	-2.71711	5.95996	1.000	-20.7816	15.3474
	Ages 20~24	-1.00706	2.74701	1.000	-9.3332	7.3191
	Ages 25~34	1.87786	1.96468	.980	-4.0770	7.8328
	Ages 35~44	-1.00311	1.85871	.999	-6.6368	4.6306
	Ages 45~54	-11.22516(*)	1.90812	.000	-17.0086	-5.4417
	Ages 55~64	-5.83588	2.06601	.089	-12.0979	.4262
	Ages 75+	3.12766	2.84631	.957	-5.4994	11.7548
Ages 75+	Ages 14~19	-5.84477	6.18988	.982	-24.6062	12.9167
	Ages 20~24	-4.13473	3.21553	.904	-13.8809	5.6115
	Ages 25~34	-1.24980	2.57944	1.000	-9.0680	6.5684
	Ages 35~44	-4.13077	2.49967	.718	-11.7072	3.4457
	Ages 45~54	-14.35282(*)	2.53663	.000	-22.0413	-6.6643
	Ages 55~64	-8.96354(*)	2.65744	.017	-17.0182	-.9089
	Ages 65~74	-3.12766	2.84631	.957	-11.7548	5.4994

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .

Table D.2

ANOVA Test: Significant Mean Differences on Infant Clothing Expenditures by CUs with Heads of Certain Ages (Purchase Event)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Age 14~19	Age 20~24	-1.02060	7.88228	1.000	-24.9175	22.8763
	Age 25~34	5.99870	7.35540	.992	-16.3009	28.2983
	Age 35~44	12.23465	7.39854	.717	-10.1957	34.6650
	Age 45~54	23.39521(*)	7.50223	.039	.6505	46.1399
	Age 55~64	26.85361(*)	7.56300	.009	3.9246	49.7826
	Age 65~74	30.10024(*)	8.06219	.005	5.6579	54.5426
	Age 75+	41.89617(*)	9.06517	.000	14.4130	69.3793
Age 20~24	Age 14~19	1.02060	7.88228	1.000	-22.8763	24.9175
	Age 25~34	7.01930	3.58822	.512	-3.8592	17.8978
	Age 35~44	13.25525(*)	3.67583	.008	2.1111	24.3994
	Age 45~54	24.41581(*)	3.88031	.000	12.6518	36.1799
	Age 55~64	27.87421(*)	3.99655	.000	15.7578	39.9907
	Age 65~74	31.12084(*)	4.87568	.000	16.3391	45.9026
	Age 75+	42.91677(*)	6.39927	.000	23.5159	62.3176
Age 25~34	Age 14~19	-5.99870	7.35540	.992	-28.2983	16.3009
	Age 20~24	-7.01930	3.58822	.512	-17.8978	3.8592
	Age 35~44	6.23595	2.34166	.134	-.8633	13.3352
	Age 45~54	17.39652(*)	2.65113	.000	9.3590	25.4340
	Age 55~64	20.85491(*)	2.81852	.000	12.3099	29.3999
	Age 65~74	24.10154(*)	3.96786	.000	12.0721	36.1310
	Age 75+	35.89748(*)	5.73779	.000	18.5020	53.2929
Age 35~44	Age 14~19	-12.23465	7.39854	.717	-34.6650	10.1957
	Age 20~24	-13.25525(*)	3.67583	.008	-24.3994	-2.1111
	Age 25~34	-6.23595	2.34166	.134	-13.3352	.8633
	Age 45~54	11.16057(*)	2.76856	.001	2.7670	19.5541
	Age 55~64	14.61896(*)	2.92924	.000	5.7383	23.4996
	Age 65~74	17.86559(*)	4.04727	.000	5.5954	30.1358
	Age 75+	29.66153(*)	5.79299	.000	12.0988	47.2243

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .

Table D.2 (continued)

ANOVA Test: Significant Mean Differences on Infant Clothing Expenditures by CUs with Heads of Certain Ages (Purchase Event)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Age 45~54	Age 14~19	-23.39521(*)	7.50223	.039	-46.1399	-.6505
	Age 20~24	-24.41581(*)	3.88031	.000	-36.1799	-12.6518
	Age 25~34	-17.39652(*)	2.65113	.000	-25.4340	-9.3590
	Age 35~44	-11.16057(*)	2.76856	.001	-19.5541	-2.7670
	Age 55~64	3.45840	3.18207	.960	-6.1888	13.1056
	Age 65~74	6.70502	4.23385	.760	-6.1309	19.5409
	Age 75+	18.50096(*)	5.92484	.038	.5384	36.4635
Age 55~64	Age 14~19	-26.85361(*)	7.56300	.009	-49.7826	-3.9246
	Age 20~24	-27.87421(*)	3.99655	.000	-39.9907	-15.7578
	Age 25~34	-20.85491(*)	2.81852	.000	-29.3999	-12.3099
	Age 35~44	-14.61896(*)	2.92924	.000	-23.4996	-5.7383
	Age 45~54	-3.45840	3.18207	.960	-13.1056	6.1888
	Age 65~74	3.24663	4.34062	.995	-9.9130	16.4062
	Age 75+	15.04256	6.00161	.193	-3.1527	33.2378
Age 65~74	Age 14~19	-30.10024(*)	8.06219	.005	-54.5426	-5.6579
	Age 20~24	-31.12084(*)	4.87568	.000	-45.9026	-16.3391
	Age 25~34	-24.10154(*)	3.96786	.000	-36.1310	-12.0721
	Age 35~44	-17.86559(*)	4.04727	.000	-30.1358	-5.5954
	Age 45~54	-6.70502	4.23385	.760	-19.5409	6.1309
	Age 55~64	-3.24663	4.34062	.995	-16.4062	9.9130
	Age 75+	11.79594	6.61961	.632	-8.2729	31.8648
Age 75+	Age 14~19	-41.89617(*)	9.06517	.000	-69.3793	-14.4130
	Age 20~24	-42.91677(*)	6.39927	.000	-62.3176	-23.5159
	Age 25~34	-35.89748(*)	5.73779	.000	-53.2929	-18.5020
	Age 35~44	-29.66153(*)	5.79299	.000	-47.2243	-12.0988
	Age 45~54	-18.50096(*)	5.92484	.038	-36.4635	-.5384
	Age 55~64	-15.04256	6.00161	.193	-33.2378	3.1527
	Age 65~74	-11.79594	6.61961	.632	-31.8648	8.2729

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .

Table D.3

ANOVA Test: Significant Mean Differences on Adult Clothing Expenditures by CUs with Heads of Certain Ages (Item Purchased)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 14~19	Ages 20~24	-.70031	.67433	.969	-2.7442	1.3436
	Ages 25~34	-1.05371	.64156	.724	-2.9983	.8909
	Ages 35~44	-.55587	.63774	.989	-2.4889	1.3771
	Ages 45~54	-.03317	.64007	1.000	-1.9732	1.9069
	Ages 55~64	-.04966	.64637	1.000	-2.0089	1.9095
	Ages 65~74	.24688	.65725	1.000	-1.7453	2.2390
	Ages 75+	.06211	.67889	1.000	-1.9956	2.1199
Ages 20~24	Ages 14~19	.70031	.67433	.969	-1.3436	2.7442
	Ages 25~34	-.35340	.27156	.899	-1.1765	.4697
	Ages 35~44	.14444	.26241	.999	-.6509	.9398
	Ages 45~54	.66714	.26802	.200	-.1452	1.4795
	Ages 55~64	.65065	.28276	.293	-.2064	1.5077
	Ages 65~74	.94718(*)	.30680	.042	.0173	1.8771
	Ages 75+	.76242	.35078	.368	-.3008	1.8257
Ages 25~34	Ages 14~19	1.05371	.64156	.724	-.8909	2.9983
	Ages 20~24	.35340	.27156	.899	-.4697	1.1765
	Ages 35~44	.49784(*)	.16042	.040	.0116	.9841
	Ages 45~54	1.02054(*)	.16945	.000	.5069	1.5342
	Ages 55~64	1.00404(*)	.19191	.000	.4224	1.5857
	Ages 65~74	1.30058(*)	.22584	.000	.6160	1.9851
	Ages 75+	1.11582(*)	.28271	.002	.2589	1.9727
Ages 35~44	Ages 14~19	.55587	.63774	.989	-1.3771	2.4889
	Ages 20~24	-.14444	.26241	.999	-.9398	.6509
	Ages 25~34	-.49784(*)	.16042	.040	-.9841	-.0116
	Ages 45~54	.52270(*)	.15435	.016	.0548	.9906
	Ages 55~64	.50620	.17872	.087	-.0355	1.0479
	Ages 65~74	.80274(*)	.21475	.005	.1518	1.4537
	Ages 75+	.61798	.27393	.318	-.2123	1.4483

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .

Table D.3 (continued)

ANOVA Test: Significant Mean Differences on Adult Clothing Expenditures by CUs with Heads of Certain Ages (Item Purchased)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 45~54	Ages 14~19	.03317	.64007	1.000	-1.9069	1.9732
	Ages 20~24	-.66714	.26802	.200	-1.4795	.1452
	Ages 25~34	-1.02054(*)	.16945	.000	-1.5342	-.5069
	Ages 35~44	-.52270(*)	.15435	.016	-.9906	-.0548
	Ages 55~64	-.01650	.18687	1.000	-.5829	.5499
	Ages 65~74	.28004	.22157	.912	-.3916	.9516
	Ages 75+	.09528	.27931	1.000	-.7513	.9419
Ages 55~64	Ages 14~19	.04966	.64637	1.000	-1.9095	2.0089
	Ages 20~24	-.65065	.28276	.293	-1.5077	.2064
	Ages 25~34	-1.00404(*)	.19191	.000	-1.5857	-.4224
	Ages 35~44	-.50620	.17872	.087	-1.0479	.0355
	Ages 45~54	.01650	.18687	1.000	-.5499	.5829
	Ages 65~74	.29654	.23919	.920	-.4285	1.0215
	Ages 75+	.11177	.29348	1.000	-.7778	1.0013
Ages 65~74	Ages 14~19	-.24688	.65725	1.000	-2.2390	1.7453
	Ages 20~24	-.94718(*)	.30680	.042	-1.8771	-.0173
	Ages 25~34	-1.30058(*)	.22584	.000	-1.9851	-.6160
	Ages 35~44	-.80274(*)	.21475	.005	-1.4537	-.1518
	Age 45~54	-.28004	.22157	.912	-.9516	.3916
	Ages 55~64	-.29654	.23919	.920	-1.0215	.4285
	Ages 75+	-.18477	.31671	.999	-1.1447	.7752
Ages 75+	Ages 14~19	-.06211	.67889	1.000	-2.1199	1.9956
	Ages 20~24	-.76242	.35078	.368	-1.8257	.3008
	Ages 25~34	-1.11582(*)	.28271	.002	-1.9727	-.2589
	Ages 35~44	-.61798	.27393	.318	-1.4483	.2123
	Ages 45~54	-.09528	.27931	1.000	-.9419	.7513
	Ages 55~64	-.11177	.29348	1.000	-1.0013	.7778
	Ages 65~74	.18477	.31671	.999	-.7752	1.1447

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .

Table D.4

ANOVA Test: Significant Mean Differences on Infant Clothing Expenditures by CUs with Heads of Certain Ages (Item Purchased)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 14~19	Ages 20~24	5.96124	17.27993	1.000	-46.4352	58.3577
	Ages 25~34	-17.85553	16.18489	.956	-66.9316	31.2205
	Ages 35~44	2.83713	16.32142	1.000	-46.6529	52.3272
	Ages 45~54	27.30881	16.61406	.724	-23.0686	77.6862
	Ages 55~64	31.50307	16.84901	.572	-19.5867	82.5929
	Ages 65~74	37.80687	18.16411	.427	-17.2706	92.8843
	Ages 75+	38.92829	20.36166	.543	-22.8126	100.6692
Ages 20~24	Ages 15~19	-5.96124	17.27993	1.000	-58.3577	46.4352
	Ages 25~34	-23.81677(*)	7.64352	.039	-46.9936	-.6400
	Ages 35~44	-3.12411	7.92852	1.000	-27.1651	20.9169
	Ages 45~54	21.34757	8.51468	.192	-4.4708	47.1659
	Ages 55~64	25.54183	8.96448	.084	-1.6404	52.7241
	Ages 65~74	31.84563	11.24312	.087	-2.2459	65.9372
	Ages 75+	32.96705	14.52824	.311	-11.0857	77.0198
Ages 25~34	Ages 15~19	17.85553	16.18489	.956	-31.2205	66.9316
	Ages 20~24	23.81677(*)	7.64352	.039	.6400	46.9936
	Ages 35~44	20.69266(*)	5.12017	.001	5.1672	36.2181
	Ages 45~54	45.16435(*)	5.98787	.000	27.0078	63.3208
	Ages 55~64	49.35861(*)	6.61185	.000	29.3100	69.4072
	Ages 65~74	55.66240(*)	9.47430	.000	26.9343	84.3905
	Ages 75+	56.78382(*)	13.20699	.000	16.7374	96.8302
Ages 35~44	Ages 15~19	-2.83713	16.32142	1.000	-52.3272	46.6529
	Ages 20~24	3.12411	7.92852	1.000	-20.9169	27.1651
	Ages 25~34	-20.69266(*)	5.12017	.001	-36.2181	-5.1672
	Ages 45~54	24.47169(*)	6.34764	.003	5.2243	43.7191
	Ages 55~64	28.66595(*)	6.93935	.001	7.6243	49.7076
	Ages 65~74	34.96974(*)	9.70569	.008	5.5400	64.3995
	Ages 75+	36.09116	13.37395	.123	-4.4615	76.6438

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .

Table D.4 (continued)

ANOVA Test: Significant Mean Differences on Infant Clothing Expenditures by CUs with Heads of Certain Ages (Item Purchased)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 45~54	Ages 15~19	-27.30881	16.61406	.724	-77.6862	23.0686
	Ages 20~24	-21.34757	8.51468	.192	-47.1659	4.4708
	Ages 25~34	-45.16435(*)	5.98787	.000	-63.3208	-27.0078
	Ages 35~44	-24.47169(*)	6.34764	.003	-43.7191	-5.2243
	Ages 55~64	4.19426	7.60218	.999	-18.8572	27.2457
	Ages 65~74	10.49805	10.19013	.970	-20.4006	41.3967
	Ages 75+	11.61947	13.72957	.990	-30.0115	53.2505
Ages 55~64	Ages 15~19	-31.50307	16.84901	.572	-82.5929	19.5867
	Ages 20~24	-25.54183	8.96448	.084	-52.7241	1.6404
	Ages 25~34	-49.35861(*)	6.61185	.000	-69.4072	-29.3100
	Ages 35~44	-28.66595(*)	6.93935	.001	-49.7076	-7.6243
	Ages 45~54	-4.19426	7.60218	.999	-27.2457	18.8572
	Ages 65~74	6.30379	10.56886	.999	-25.7433	38.3509
	Ages 75+	7.42521	14.01296	1.000	-35.0651	49.9155
Ages 65~74	Ages 15~19	-37.80687	18.16411	.427	-92.8843	17.2706
	Ages 20~24	-31.84563	11.24312	.087	-65.9372	2.2459
	Ages 25~34	-55.66240(*)	9.47430	.000	-84.3905	-26.9343
	Ages 35~44	-34.96974(*)	9.70569	.008	-64.3995	-5.5400
	Ages 45~54	-10.49805	10.19013	.970	-41.3967	20.4006
	Ages 55~64	-6.30379	10.56886	.999	-38.3509	25.7433
	Ages 75+	1.12142	15.56948	1.000	-46.0886	48.3314
Ages 75+	Ages 15~19	-38.92829	20.36166	.543	-100.6692	22.8126
	Ages 20~24	-32.96705	14.52824	.311	-77.0198	11.0857
	Ages 25~34	-56.78382(*)	13.20699	.000	-96.8302	-16.7374
	Ages 35~44	-36.09116	13.37395	.123	-76.6438	4.4615
	Ages 45~54	-11.61947	13.72957	.990	-53.2505	30.0115
	Ages 55~64	-7.42521	14.01296	1.000	-49.9155	35.0651
	Ages 65~74	-1.12142	15.56948	1.000	-48.3314	46.0886

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .

APPENDIX E

ANOVA TEST: SIGNIFICANT MEAN EXPENDITURE DIFFERENCES ON ADULT AND  
INFANT CLOTHING GIFTS BY CUs WITH HEADS OF CERTAIN AGES BASED ON  
PURCHASE EVENT AND ITEM PURCHASED



Table E.1

ANOVA Test: Significant Mean Differences on Adult Clothing Gift Expenditures by CUs with Heads of Certain Ages (Purchase Event)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 14~19	Ages 20~24	-5.62545	17.28452	1.000	-58.0275	46.7766
	Ages 25~34	-7.32047	16.64004	1.000	-57.7686	43.1277
	Ages 35~44	5.00435	16.55988	1.000	-45.2008	55.2095
	Ages 45~54	-3.59110	16.51766	1.000	-53.6682	46.4860
	Ages 55~64	4.98275	16.54075	1.000	-45.1644	55.1299
	Ages 65~74	2.27889	16.63786	1.000	-48.1627	52.7205
	Ages 75+	1.63748	16.99882	1.000	-49.8984	53.1734
Ages 20~24	Ages 14~19	5.62545	17.28452	1.000	-46.7766	58.0275
	Ages 25~34	-1.69502	6.33034	1.000	-20.8869	17.4969
	Ages 35~44	10.62980	6.11653	.662	-7.9139	29.1735
	Ages 45~54	2.03435	6.00128	1.000	-16.1600	20.2286
	Ages 55~64	10.60820	6.06455	.655	-7.7779	28.9943
	Ages 65~74	7.90434	6.32463	.917	-11.2703	27.0789
	Ages 75+	7.26293	7.22096	.974	-14.6291	29.1550
Ages 25~34	Ages 14~19	7.32047	16.64004	1.000	-43.1277	57.7686
	Ages 20~24	1.69502	6.33034	1.000	-17.4969	20.8869
	Ages 35~44	12.32482(*)	3.94313	.038	.3703	24.2793
	Ages 45~54	3.72937	3.76187	.976	-7.6756	15.1344
	Ages 55~64	12.30322(*)	3.86200	.031	.5947	24.0118
	Ages 65~74	9.59936	4.25878	.320	-3.3121	22.5108
	Ages 75+	8.95795	5.50259	.733	-7.7244	25.6403
Ages 35~44	Ages 14~19	-5.00435	16.55988	1.000	-55.2095	45.2008
	Ages 20~24	-10.62980	6.11653	.662	-29.1735	7.9139
	Ages 25~34	-12.32482(*)	3.94313	.038	-24.2793	-.3703
	Ages 45~54	-8.59546	3.38977	.181	-18.8723	1.6814
	Ages 55~64	-.02160	3.50055	1.000	-10.6343	10.5911
	Ages 65~74	-2.72546	3.93396	.997	-14.6522	9.2012
	Ages 75+	-3.36687	5.25522	.998	-19.2993	12.5656

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .

Table E.1 (continued)

ANOVA Test: Significant Mean Differences on Adult Clothing Gift Expenditures by CUs with Heads of Certain Ages (Purchase Event)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 45~54	Ages 14~19	3.59110	16.51766	1.000	-46.4860	53.6682
	Ages 20~24	-2.03435	6.00128	1.000	-20.2286	16.1600
	Ages 25~34	-3.72937	3.76187	.976	-15.1344	7.6756
	Ages 35~44	8.59546	3.38977	.181	-1.6814	18.8723
	Ages 55~64	8.57386	3.29504	.155	-1.4158	18.5635
	Ages 65~74	5.86999	3.75226	.772	-5.5059	17.2458
	Ages 75+	5.22859	5.12062	.971	-10.2958	20.7529
Ages 55~64	Ages 14~19	-4.98275	16.54075	1.000	-55.1299	45.1644
	Ages 20~24	-10.60820	6.06455	.655	-28.9943	7.7779
	Ages 25~34	-12.30322(*)	3.86200	.031	-24.0118	-.5947
	Ages 35~44	.02160	3.50055	1.000	-10.5911	10.6343
	Ages 45~54	-8.57386	3.29504	.155	-18.5635	1.4158
	Ages 65~74	-2.70386	3.85263	.997	-14.3840	8.9763
	Ages 75+	-3.34527	5.19462	.998	-19.0940	12.4034
Ages 65~74	Ages 14~19	-2.27889	16.63786	1.000	-52.7205	48.1627
	Ages 20~24	-7.90434	6.32463	.917	-27.0789	11.2703
	Ages 25~34	-9.59936	4.25878	.320	-22.5108	3.3121
	Ages 35~44	2.72546	3.93396	.997	-9.2012	14.6522
	Ages 45~54	-5.86999	3.75226	.772	-17.2458	5.5059
	Ages 55~64	2.70386	3.85263	.997	-8.9763	14.3840
	Ages 75+	-.64140	5.49602	1.000	-17.3039	16.0211
Ages 75+	Ages 14~19	-1.63748	16.99882	1.000	-53.1734	49.8984
	Ages 20~24	-7.26293	7.22096	.974	-29.1550	14.6291
	Ages 25~34	-8.95795	5.50259	.733	-25.6403	7.7244
	Ages 35~44	3.36687	5.25522	.998	-12.5656	19.2993
	Ages 45~54	-5.22859	5.12062	.971	-20.7529	10.2958
	Ages 55~64	3.34527	5.19462	.998	-12.4034	19.0940
	Ages 65~74	.64140	5.49602	1.000	-16.0211	17.3039

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .

Table E.2

ANOVA Test: Significant Mean Differences on Infant Clothing Gift Expenditures by CUs with Heads of Certain Ages (Purchase Event)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 14~19	Ages 20~24	.22440	9.40951	1.000	-28.3075	28.7563
	Ages 25~34	3.06488	8.61279	1.000	-23.0512	29.1809
	Ages 35~44	6.81282	8.57125	.993	-19.1773	32.8029
	Ages 45~54	7.78931	8.59679	.986	-18.2782	33.8569
	Ages 55~64	8.12891	8.60807	.982	-17.9728	34.2307
	Ages 65~74	8.92735	8.89477	.974	-18.0437	35.8984
	Ages 75+	21.02699	9.55854	.352	-7.9568	50.0108
Ages 20~24	Ages 14~19	-.22440	9.40951	1.000	-28.7563	28.3075
	Ages 25~34	2.84048	4.76487	.999	-11.6078	17.2887
	Ages 35~44	6.58841	4.68936	.855	-7.6309	20.8077
	Ages 45~54	7.56491	4.73590	.752	-6.7955	21.9253
	Ages 55~64	7.90451	4.75634	.712	-6.5179	22.3269
	Ages 65~74	8.70295	5.25745	.716	-7.2389	24.6448
	Ages 75+	20.80259(*)	6.31582	.022	1.6515	39.9537
Ages 25~34	Ages 14~19	-3.06488	8.61279	1.000	-29.1809	23.0512
	Ages 20~24	-2.84048	4.76487	.999	-17.2887	11.6078
	Ages 35~44	3.74794	2.76249	.877	-4.6286	12.1245
	Ages 45~54	4.72443	2.84077	.711	-3.8895	13.3383
	Ages 55~64	5.06403	2.87471	.646	-3.6528	13.7809
	Ages 65~74	5.86248	3.64445	.745	-5.1884	16.9133
	Ages 75+	17.96212(*)	5.05281	.009	2.6408	33.2834
Ages 35~44	Ages 14~19	-6.81282	8.57125	.993	-32.8029	19.1773
	Ages 20~24	-6.58841	4.68936	.855	-20.8077	7.6309
	Ages 25~34	-3.74794	2.76249	.877	-12.1245	4.6286
	Ages 45~54	.97649	2.71221	1.000	-7.2476	9.2006
	Ages 55~64	1.31609	2.74774	1.000	-7.0157	9.6479
	Ages 65~74	2.11454	3.54516	.999	-8.6352	12.8643
	Ages 75+	14.21418	4.98166	.083	-8.914	29.3198

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .

Table E.2 (continued)

ANOVA Test: Significant Mean Differences on Infant Clothing Gift Expenditures by CUs with Heads of Certain Ages (Purchase Event)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 45~54	Ages 14~19	-7.78931	8.59679	.986	-33.8569	18.2782
	Ages 20~24	-7.56491	4.73590	.752	-21.9253	6.7955
	Ages 25~34	-4.72443	2.84077	.711	-13.3383	3.8895
	Ages 35~44	-.97649	2.71221	1.000	-9.2006	7.2476
	Ages 55~64	.33960	2.82642	1.000	-8.2308	8.9100
	Ages 65~74	1.13804	3.60649	1.000	-9.7977	12.0738
	Ages 75+	13.23768	5.02549	.144	-2.0008	28.4762
Ages 55~64	Ages 14~19	-8.12891	8.60807	.982	-34.2307	17.9728
	Ages 20~24	-7.90451	4.75634	.712	-22.3269	6.5179
	Ages 25~34	-5.06403	2.87471	.646	-13.7809	3.6528
	Ages 35~44	-1.31609	2.74774	1.000	-9.6479	7.0157
	Ages 45~54	-.33960	2.82642	1.000	-8.9100	8.2308
	Ages 65~74	.79845	3.63328	1.000	-10.2186	11.8154
	Ages 75+	12.89808	5.04476	.172	-2.3988	28.1950
Ages 65~74	Ages 14~19	-8.92735	8.89477	.974	-35.8984	18.0437
	Ages 20~24	-8.70295	5.25745	.716	-24.6448	7.2389
	Ages 25~34	-5.86248	3.64445	.745	-16.9133	5.1884
	Ages 35~44	-2.11454	3.54516	.999	-12.8643	8.6352
	Ages 45~54	-1.13804	3.60649	1.000	-12.0738	9.7977
	Ages 55~64	-.79845	3.63328	1.000	-11.8154	10.2186
	Ages 75+	12.09964	5.51975	.357	-4.6376	28.8369
Ages 75+	Ages 14~19	-21.02699	9.55854	.352	-50.0108	7.9568
	Ages 20~24	-20.80259(*)	6.31582	.022	-39.9537	-1.6515
	Ages 25~34	-17.96212(*)	5.05281	.009	-33.2834	-2.6408
	Ages 35~44	-14.21418	4.98166	.083	-29.3198	.8914
	Ages 45~54	-13.23768	5.02549	.144	-28.4762	2.0008
	Ages 55~64	-12.89808	5.04476	.172	-28.1950	2.3988
	Ages 65~74	-12.09964	5.51975	.357	-28.8369	4.6376

Note:  $p \leq .05$

\* The mean difference is significant at  $p \leq .05$ .

Table E.3

ANOVA Test: Significant Mean Differences on Adult Clothing Gift Expenditures by CUs with Heads of Certain Ages (Item Purchased)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 14~19	Ages 20~24	.23039	.62275	1.000	-1.6579	2.1187
	Ages 25~34	.29644	.58999	1.000	-1.4925	2.0854
	Ages 35~44	-.06534	.58621	1.000	-1.8428	1.7121
	Ages 45~54	.25706	.58499	1.000	-1.5167	2.0308
	Ages 55~64	.01815	.58591	1.000	-1.7584	1.7947
	Ages 65~74	.06715	.59211	1.000	-1.7282	1.8625
	Ages 75+	-.09862	.60953	1.000	-1.9468	1.7496
Ages 20~24	Ages 14~19	-.23039	.62275	1.000	-2.1187	1.6579
	Ages 25~34	.06605	.26661	1.000	-.7423	.8744
	Ages 35~44	-.29573	.25812	.947	-1.0784	.4869
	Ages 45~54	.02667	.25534	1.000	-.7476	.8009
	Ages 55~64	-.21225	.25745	.992	-.9929	.5684
	Ages 65~74	-.16325	.27124	.999	-.9857	.6592
	Ages 75+	-.32901	.30743	.963	-1.2612	.6032
Ages 25~34	Ages 14~19	-.29644	.58999	1.000	-2.0854	1.4925
	Ages 20~24	-.06605	.26661	1.000	-.8744	.7423
	Ages 35~44	-.36178	.16401	.348	-.8591	.1355
	Ages 45~54	-.03938	.15959	1.000	-.5233	.4445
	Ages 55~64	-.27830	.16295	.682	-.7724	.2158
	Ages 65~74	-.22930	.18397	.918	-.7871	.3285
	Ages 75+	-.39506	.23406	.695	-1.1048	.3146
Ages 35~44	Ages 14~19	.06534	.58621	1.000	-1.7121	1.8428
	Ages 20~24	.29573	.25812	.947	-.4869	1.0784
	Ages 25~34	.36178	.16401	.348	-.1355	.8591
	Ages 45~54	.32240	.14497	.337	-.1172	.7620
	Ages 55~64	.08348	.14867	.999	-.3673	.5343
	Ages 65~74	.13248	.17145	.994	-.3874	.6523
	Ages 75+	-.03328	.22435	1.000	-.7135	.6470

Note:  $p \leq .05$

\* The mean difference is significant at  $p \leq .05$ .

Table E.3 (continued)

ANOVA Test: Significant Mean Differences on Adult Clothing Gift Expenditures by CUs with Heads of Certain Ages (Item Purchased)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 45~54	Ages 14~19	-.25706	.58499	1.000	-2.0308	1.5167
	Ages 20~24	-.02667	.25534	1.000	-.8009	.7476
	Ages 25~34	.03938	.15959	1.000	-.4445	.5233
	Ages 35~44	-.32240	.14497	.337	-.7620	.1172
	Ages 55~64	-.23891	.14378	.712	-.6749	.1970
	Ages 65~74	-.18991	.16723	.949	-.6970	.3171
	Ages 75+	-.35568	.22114	.745	-1.0262	.3148
Ages 55~64	Ages 14~19	-.01815	.58591	1.000	-1.7947	1.7584
	Ages 20~24	.21225	.25745	.992	-.5684	.9929
	Ages 25~34	.27830	.16295	.682	-.2158	.7724
	Ages 35~44	-.08348	.14867	.999	-.5343	.3673
	Ages 45~54	.23891	.14378	.712	-.1970	.6749
	Ages 65~74	.04900	.17044	1.000	-.4678	.5658
	Ages 75+	-.11676	.22358	1.000	-.7947	.5612
Ages 65~74	Ages 14~19	-.06715	.59211	1.000	-1.8625	1.7282
	Ages 20~24	.16325	.27124	.999	-.6592	.9857
	Ages 25~34	.22930	.18397	.918	-.3285	.7871
	Ages 35~44	-.13248	.17145	.994	-.6523	.3874
	Ages 45~54	.18991	.16723	.949	-.3171	.6970
	Ages 55~64	-.04900	.17044	1.000	-.5658	.4678
	Ages 75+	-.16576	.23933	.997	-.8914	.5599
Ages 75+	Ages 14~19	.09862	.60953	1.000	-1.7496	1.9468
	Ages 20~24	.32901	.30743	.963	-.6032	1.2612
	Ages 25~34	.39506	.23406	.695	-.3146	1.1048
	Ages 35~44	.03328	.22435	1.000	-.6470	.7135
	Ages 45~54	.35568	.22114	.745	-.3148	1.0262
	Ages 55~64	.11676	.22358	1.000	-.5612	.7947
	Ages 65~74	.16576	.23933	.997	-.5599	.8914

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .

Table E.4

ANOVA Test: Significant Mean Differences on Infant Clothing Gift Expenditures by CUs with Heads of Certain Ages (Item Purchased)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 14~19	Ages 20~24	18.63999	18.08448	.970	-36.2142	73.4942
	Ages 25~34	8.41771	16.81401	1.000	-42.5829	59.4183
	Ages 35~44	17.22302	16.75284	.970	-33.5920	68.0381
	Ages 45~54	31.31592	16.80966	.577	-19.6715	82.3033
	Ages 55~64	29.94559	16.88407	.638	-21.2675	81.1587
	Ages 65~74	30.80157	17.42612	.642	-22.0557	83.6588
	Ages 75+	37.45531	18.56235	.470	-18.8484	93.7590
Ages 20~24	Ages 14~19	-18.63999	18.08448	.970	-73.4942	36.2142
	Ages 25~34	-10.22228	8.48737	.931	-35.9664	15.5218
	Ages 35~44	-1.41697	8.36554	1.000	-26.7915	23.9576
	Ages 45~54	12.67593	8.47877	.810	-13.0420	38.3939
	Ages 55~64	11.30560	8.62534	.895	-14.8570	37.4681
	Ages 65~74	12.16158	9.64337	.913	-17.0889	41.4120
	Ages 75+	18.81532	11.57089	.735	-16.2817	53.9124
Ages 25~34	Ages 14~19	-8.41771	16.81401	1.000	-59.4183	42.5829
	Ages 20~24	10.22228	8.48737	.931	-15.5218	35.9664
	Ages 35~44	8.80530	5.06407	.662	-6.5551	24.1657
	Ages 45~54	22.89821(*)	5.24900	.000	6.9768	38.8196
	Ages 55~64	21.52787(*)	5.48261	.002	4.8979	38.1578
	Ages 65~74	22.38386(*)	6.97546	.029	1.2258	43.5420
	Ages 75+	29.03759(*)	9.46298	.045	.3343	57.7409
Ages 35~44	Ages 14~19	-17.22302	16.75284	.970	-68.0381	33.5920
	Ages 20~24	1.41697	8.36554	1.000	-23.9576	26.7915
	Ages 25~34	-8.80530	5.06407	.662	-24.1657	6.5551
	Ages 45~54	14.09290	5.04963	.098	-1.2237	29.4095
	Ages 55~64	12.72257	5.29204	.240	-3.3294	28.7745
	Ages 65~74	13.57855	6.82669	.489	-7.1283	34.2854
	Ages 75+	20.23229	9.35386	.375	-8.1400	48.6046

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .

Table E.4 (continued)

ANOVA Test: Significant Mean Differences on Infant Clothing Gift Expenditures by CUs with Heads of Certain Ages (Item Purchased)

(I) Ages	(J) Ages	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Ages 45~54	Ages 14~19	-31.31592	16.80966	.577	-82.3033	19.6715
	Ages 20~24	-12.67593	8.47877	.810	-38.3939	13.0420
	Ages 25~34	-22.89821(*)	5.24900	.000	-38.8196	-6.9768
	Ages 35~44	-14.09290	5.04963	.098	-29.4095	1.2237
	Ages 55~64	-1.37033	5.46927	1.000	-17.9598	15.2192
	Ages 65~74	-.51435	6.96498	1.000	-21.6407	20.6120
	Ages 75+	6.13939	9.45526	.998	-22.5405	34.8193
Ages 55~64	Ages 14~19	-29.94559	16.88407	.638	-81.1587	21.2675
	Ages 20~24	-11.30560	8.62534	.895	-37.4681	14.8570
	Ages 25~34	-21.52787(*)	5.48261	.002	-38.1578	-4.8979
	Ages 35~44	-12.72257	5.29204	.240	-28.7745	3.3294
	Ages 45~54	1.37033	5.46927	1.000	-15.2192	17.9598
	Ages 65~74	.85598	7.14269	1.000	-20.8094	22.5213
	Ages 75+	7.50972	9.58691	.994	-21.5695	36.5889
Ages 65~74	Ages 14~19	-30.80157	17.42612	.642	-83.6588	22.0557
	Ages 20~24	-12.16158	9.64337	.913	-41.4120	17.0889
	Ages 25~34	-22.38386(*)	6.97546	.029	-43.5420	-1.2258
	Ages 35~44	-13.57855	6.82669	.489	-34.2854	7.1283
	Ages 45~54	.51435	6.96498	1.000	-20.6120	21.6407
	Ages 55~64	-.85598	7.14269	1.000	-22.5213	20.8094
	Ages 75+	6.65374	10.51223	.998	-25.2322	38.5396
Ages 75+	Ages 14~19	-37.45531	18.56235	.470	-93.7590	18.8484
	Ages 20~24	-18.81532	11.57089	.735	-53.9124	16.2817
	Ages 25~34	-29.03759(*)	9.46298	.045	-57.7409	-.3343
	Ages 35~44	-20.23229	9.35386	.375	-48.6046	8.1400
	Ages 45~54	-6.13939	9.45526	.998	-34.8193	22.5405
	Ages 55~64	-7.50972	9.58691	.994	-36.5889	21.5695
	Ages 65~74	-6.65374	10.51223	.998	-38.5396	25.2322

Note:  $p \leq .05$ \* The mean difference is significant at  $p \leq .05$ .