Abstract

LEE, EUN-KYUNG. Creation of *Casual Index* Based on Habit Stocks and General Social Behaviors. (Under the direction of Dr. Moon W. Suh and Dr. William Oxenham.)

A fashion preference indicator called "*Casual Index*" was created to signify and measure the degree of casualness at any given time point by using various statistical and econometrics models. The indices were created based on two approaches; one for theoretically constructed and the other for practical application. The theory-based *Casual Index* is a composite index formulated from two sub-indices that were derived from the general social behaviors and apparel demand patterns of contemporary Americans. The consumption-based *Casual Index* is also a composite index aimed at practical application, derived from consumption data on certain apparel items. In addition, the *Total Casual Index* was created by combining the consumption-based *Casual Indices* of men and women based on unit volumes of apparel consumption.

In deriving the various casual indices, the General Social Survey data from National Opinion Research Center (University of Chicago) and the Current Industrial Report MQ23A of U.S. Bureau of Census from 1972 through 1998 were applied.

For the first time, the behavioral patterns of the society and the habit formation by consumers were combined in creating and successfully validating theoretically formulated *Casual Index*. The statistical methods applied were proven to be highly effective. The consumption-based *Casual Index* was shown to be most useful for practical applications as well as for forecasting for the future casual trends. Although somewhat subjective in the formulation, the newly created *Total Casual Index* is

expected to enhance its utility in the absence of complex data and mathematical models. The casual indices derived for both men and women suggest that the casual trends have shifted dynamically during the last three decades. Based on the *Total Casual Index*, the 1998 figure (75.7) is shown to be higher than that of 1972 (63.7).

Creation of *Casual Index* Based on Habit Stocks and General Social Behaviors

by

Eun-Kyung Lee

**A thesis submitted to the Graduate Faculty of
North Carolina State University
in partial fulfillment of the
requirements for the Degree of
Doctor of Philosophy**

Textile Technology Management

Raleigh

2001

APPROVED BY:

Chairman of Advisory Committee | **Co-Chairman of Advisory Committee**

Biography

The author, Eun-Kyung Lee was born on July 31, 1970 in Seoul, Korea to Young-Joo Park and Yong-Tae Lee. She received her B.S. degree in Clothing and Textiles in February 1993 from Yonsei University in Seoul. Upon graduation, she worked at Galleria Department Stores of Hanwha Corporation as an assistant manager in women's apparel for three and half years. She was married to Dr. Jin H. Lee in 1995.

In January 1996, she was enrolled in Textile Management & Technology program at the College of Textiles, North Carolina State University and received her M.S. degree in August 1997 under the direction of Dr. William Oxenham. She began her doctoral study in Fiber and Polymer Science at the College and transferred to the Textile Technology Management program in May 1998.

During her doctoral course work, she was recipient and trainee of Hewlette Teaching Fellowship, Alcoa Teaching Diversity Fellowship, and Research Ethics Fellowship in North Carolina State University. Her doctoral work in the College of Textiles was supported by National Textile Center.

She has been actively involved in several professional organizations. She is currently a member of ITAA (International Textile and Apparel Association), TI (Textile Institute), and KSEA (Korean-American Science and Engineer Association). In addition, she has served as an International Student Representative of Chancellor-Student Liaison Committee in North Carolina State University. She also served as a Vice President of Textile Association for Graduate Student and Korean Student Association.

Acknowledgments

I would like to express my sincere gratitude to Prof. Moon W. Suh, Chairman of my Advisory Committee, for the intellectual stimulation which helped shape this research and for the long hours of patience and investment on my behalf. He has continuously demonstrated great enthusiasm, vision and support enabling me to complete the doctoral study.

I also express my sincere gratitude to Prof. William Oxenham, Co-chairman of the committee for his support, encouragement and timely guidance throughout the duration of my stay at the College.

My gratitudes are due to Prof. Matthew Holt, Department of Agricultural and Resource Economics, for his advice and guidance in developing econometric models. My thanks are also extended to Mr. Carl Priestland, formal Chief Economist of AAMA, for providing his insight and expertise in the U.S. apparel market and international trade matters. His assistance in obtaining the needed apparel related data and in-depth advices were invaluable. Thanks to Prof. Peter Kilduff, Department of Textile and Apparel Technology Management, for his interest and support in this research and sharing his wisdom of macro side of apparel market. Special thanks are also to Ronald Funderburk, of Sara Lee Direct, for supplying the apparel shipment data.

On financial side, I sincerely thank National Textile Center, for supporting this research for the last three years.

On my personal side, I cannot thank enough my loving husband, Jin who has endured years of separation while sending his love across the miles. Needless to say, I owe everything to my parents in Seoul, Korea who cheered me continuously with abundance of love.

Finally, my thanks must go to many of my friends, Severine Gahide, Wooseong Kang, Ina Bauer-Kurz, Robert Allison, Sedef Uncu, Christie Jo Phillips, John Decker, Eric Akunda, and Dr. Paul Bloom. With their encouragement, advice and friendship, the road to this final point has been much less painful and more pleasurable.

Table of Contents

List of Tables

List of Figures

1 Introduction

Dynamic changes are taking place in America in all aspects of living. The "traditional" or "average" American household no longer represents the contemporary populace. Instead, a new demographic profile that is more diverse, heterogeneous and fragmented has emerged. According to recent reports in economic magazines, 29% or 77 million of the U.S. population are the *baby boomers*, 20% or 50 million, are Generation *X* and 23% or 60 million, are Generation *Y*. [The Atlantic Monthly, 8/1999, The Business Journal, 4/14/2000] Each of these groups has its own characteristics, needs, and wants. Interestingly, even with their diverse backgrounds, many contemporary Americans share common traits. They are highly independent, educated, individualistic, youth-oriented, trying to have more free time, and are adaptive to new technologies.

On the apparel side, there have been dramatic changes in the 1990s. The trend towards an acceptance of more casual dress codes has been in place for almost a decade now. In the early 1990s, when "Casual Friday" hit the business world, it caught most men off-guard. While most of their closets were full of suits, jackets, and dress slacks and shirts for the office, their casual wardrobe consisted of not much more than a pair or two of old jeans, a few comfortable faded shirts, and tattered sneakers or deck shoes. Realizing they could not wear these in the office, men began searching for and buying dressier casual clothes.

In apparel, a newly formulated demand creates a fashion. When casual was demanded, it defined and created a new fashion. Upscale designers like Calvin Klein, Ralph Lauren, Georgio Armani and many more, have introduced more casual lines, while many apparel manufacturers, including Haggar, Farah, and Levi Strauss, have either beefed up their respective product menus with casual wear or have reclassified existing products as casual wear. Retailers have offered and displayed more “dress-up casual” options along with new innovative products. Wrinkle-free cotton apparel, for example, has satisfied the new needs for maintaining neat appearance with casual attire.

As briefly described above, Americans' life-style and needs have changed dramatically and this change has defined and created a new fashion demand. It may be said without a rigorous proof that Americans have become more casual and moved away from being formal in many respects. Surprisingly, however, very little systematic research for testing this perception can be found in apparel or textile research. Cotton Incorporated's *Lifestyle Monitor*^{TM} survey which began in October 1994 is the only on-going survey research found to date. Since they first started surveying seven years ago, *Lifestyle Monitor*^{TM} interviewed more than 30,000 American consumers including 18,000 women between the ages of 16 and 70. Each interview is comprised of about 125 questions on such topics as fashion likes and dislikes, casual dressing, denim, apparel shopping and related topics. [WWD, 3/16/2000] Currently, Cotton Incorporated publishes *Lifestyle Monitor*^{TM} three times a year. While this survey shows the upto date trend, no systematic analysis has been performed in providing results. To indicate contemporary American's Casual/Formal trends, more formal research with credible data is needed. In addition, this type of consumer survey relies on the actual questionnaires and a special panel, requiring a dedicated system for the set of objectives. In other words, any projection or forecasting of trends and indexing of the current trends cannot be accomplished in the absence of the on-going panel surveys.

Realizing these shortfalls and the lack of formal research in the analysis of the apparel market trends based on the complex dynamic consumer behaviors coupled with extremely short life cycles, an attempt will be made to create a fashion preference indicator called "*Casual Index*" that will signify and measure the degree of casualness at any given time point. There can be many possible ways to create such an index. An initial attempt was to design a multi-dimensional *Casual Index* which would consist of a number of sub-indices. The sub-indices would represent different dimensions of fashion. An economic axis, an apparel color axis, a fabric weight axis, a yarn component of fabric axis and a public lifestyle axis would be the examples. However, to estimate such sub-indices, accurate, reliable, and continuous data are necessary. Due to the uncertainty of obtaining such data and the lack of prior research on the subject, an alternate attempt was made to define and create a *Casual Index* based on two dimensions only, namely, a theory-based index and a consumption-based practical index. The theory-based index is again comprised of two sub-indices that were derived from general social behavior and consumer demand analysis.

The primary research issue is to create a numerical index for apparel trends based on two approaches: one for theoretically constructed and the other for practical application. To construct a theory-based index, two-dimensional sub-indices will be created so that the index will reflect the qualitative aspects of the life style as well as the quantitative side of consumer demand. This index, created with two theoretically independent propositions, will be combined to create a composite *Casual Index*. This, in turn, will be validated and simplified by use of consumption data on certain apparel items. This effort is to design a simplified scheme for measuring and forecasting a *Casual Index* without involving the complex theoretical models obtained for theory developed. These indices created so far are composed of four independent indicators, in terms of the unit volume and dollar values for both men and women. In order to simplify and unify the *Casual Indices* and arrive at a single value, *Total Casual Index* will be created.

From these basic ideas, theoretical models were developed that can estimate contemporary American's general opinion change in every aspect of life as well as specifically preference changes in apparel. For theoretical backgrounds, some research from sociological and political sciences were referenced to investigate general opinion change and several demand analyses from econometrics area were applied to estimate changes in apparel preferences.

However, even in sociological or political science, due to the scarcity of appropriate data, it was in the late 1970s, that researchers began to examine the issues of public opinion systematically. Chafetz and Ebaugh (1983), Smith (1990) and Davis (1980, 1992) investigated liberal and conservative social trends in the United States and Kiecolt (1988) studied the links between attitudes and social structure. Even though these studies are not directly related to the Casual/Formal issues, their definition of and approach to dichotomize Liberalism/Conservatism and their methods of analysis were mainly referenced in the first part of theory-based index.

In econometrics, development of theories on consumer demand systems has had a long history. Davenant (1699) published the first empirical study about a numerical schedule of the demand for wheat in 1699. In the eighteenth century, such writers as Verri (1771) and Lloyd (1771) gradually sorted out the independent influences of demand and supply on market prices, and by 1776 Adam Smith could write "price varies directly as the quantity demanded, which depends on price; and inversely as the quantity supplied, which also depends on price" (1776). Since then, numerous studies have been made for developing practical demand theories as well as in applying the system of equation. For example, Stone (1954) developed a linear expenditure demand system and studies by Barten (1977) and Deaton and Muellbauer (1980) used an ordinary demand system to model consumer expenditures and tested the underlying theoretical hypotheses.

In recent years, there has been growing interest in the role of habit formation in the consumer's allocation decisions. Several researchers have attempted to formulate a consumer behavior model based on habit formation. The main idea is that goods may be purchased and consumed based on "formed habits" in such a way that an individual's current preferences are based on his/her past consumption patterns. Therefore, a change in price or income would cause a change in consumption that would induce a change in tastes, and subsequently promote a further change in consumption. In this research Deanton and Mulellbauer's (1980) Almost Ideal Demand (AID) System, one of the recently developed demand systems, is extended to incorporate habit terms. This model is then applied to a variant of the differential demand system for examining the stock effects on apparel consumption.

As briefly introduced above, the theory-based index is based on two different theories - social science and demand theories. This type of approach has been discussed but never materialized due to the difficulties of obtaining the relevant data and relating them to the observed qualitative phenomena. Furthermore, this method will provide a reliable mathematical foundation for the ongoing changes with or without a capability in forecasting and prediction. These two theory-based sub-indices will be combined and supplement each other in forming a composite *Casual Index.* The composite index thus formed will reflect the preferred choice of the apparel by the consumer as well as the underlying social trends that can be readily translated into consumer behaviors. The *Casual Index* constructed and estimated from theories will be regressed on the actual apparel demand data to develop a system for estimating and forecasting C*asual Index* without going through the complex mathematical models and social science data. This validation process is to increase the utility and application potential of the *Casual Index* developed.

Finally, the consumption-based composite *Casual Indices* will be simplified and unified and *Total Casual Index* will be created. This index is to express the casualness of a given time point in one simple figure.

2 Research Objectives and Scope

The main objective of this research is to create a *Casual Index* for numerically expressing the degree of casualness in apparel theoretically as well as practically. While a theory-based index is estimated from contemporary American's general social opinion and consumer demand, practically derived index is estimated from apparel consumption data and validates the usefulness of the theory-based index. Both indices are composite measures that reflect the preferred type of apparel, and will therefore facilitate numerical tracking of opinion changes. This part of the study will be carried out in two procedures; a theory-based *Casual Index* will be developed and will then be validated by using a consumption-based index. The theory-based *Casual Index* will be created in two dimensions; one is to find a causal relationship between apparel consumption patterns and the general social behaviors and the other is to analyze actual apparel demand by various categories from the early 1970's to the late 1990's. An endeavor will be made to define and create an accurate index as a management decision support tool for various industries and government. Industry executives may apply the index for strategic issues relating to manufacturing planning, marketing & sales and product development. The index itself is expected to broaden the scope of strategic decisions and enhance the accuracy of projections based on the user-specific decision objectives.

Figures 1(a) and 1(b) present schematics of the research process. The remainder of this dissertation will be organized as follows: In the next section, the theoretical background of this study will be reviewed; several studies in sociological/political and consumer demand that are relevant to this study will be summarized; the conceptual framworks of Casual/Formal in this study will be defined; the each stage of creating theory-based *Casual Index*, from two sub-indices derived from general social behavior and the consumer apparel demand, to the composite index of these two will be shown; consumption-based *Casual Index* will be derived and the forecasting accuracy of the created indices will be tested. In each stage, data structure, models, and methods of analyses will be described and then in the last, this study will be concluded with a discussion of the results, as well as implications of the research findings and future prospects.

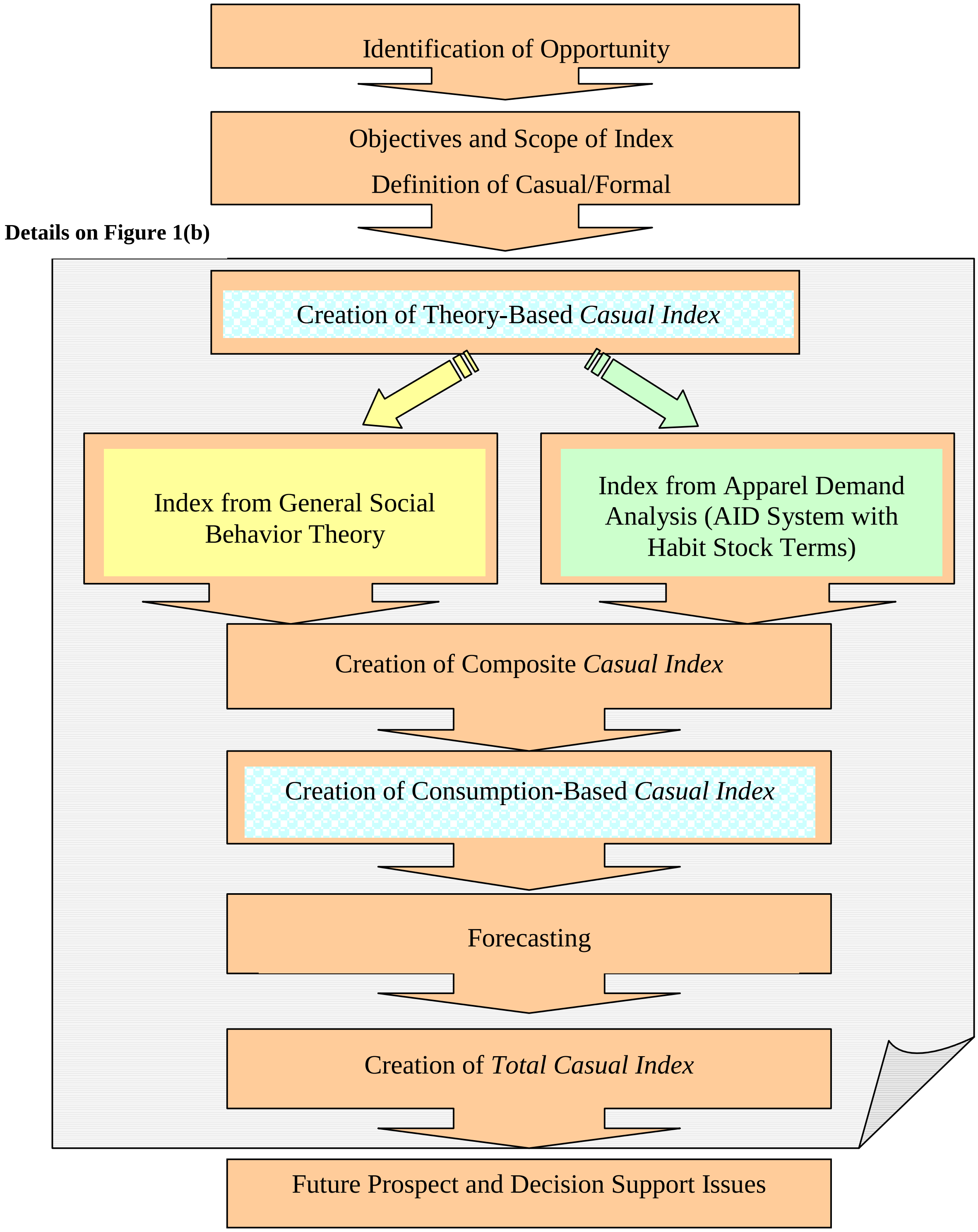

Figure 1(a). Schematics of Research Process

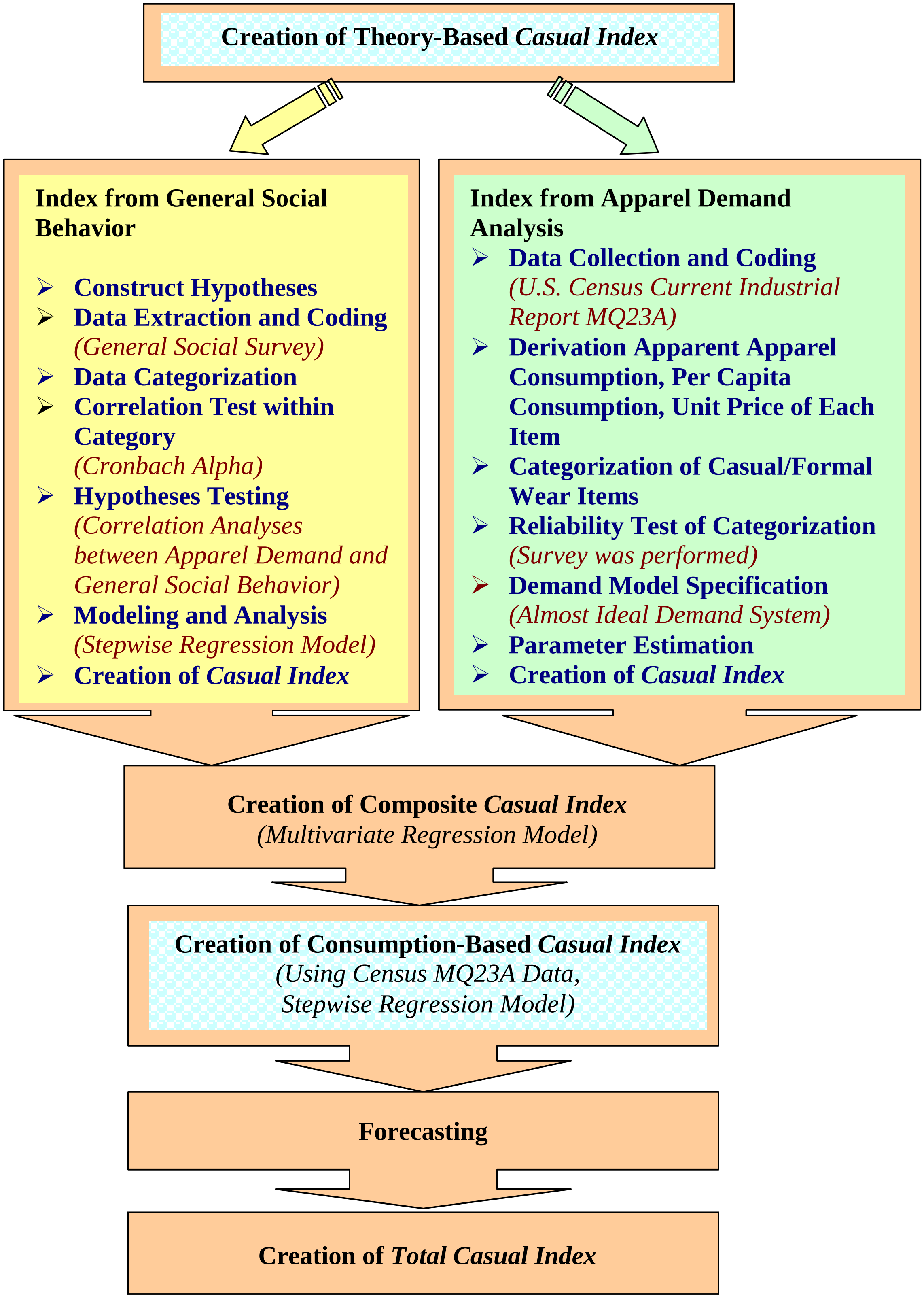

Figure 1(b). Detailed Schematics of Research Process

3 Theoretical Backgrounds

As noted above, the main objective of this research is to create a composite index that measures the degree of casualness in apparel through theories and also by use of the actual data readily available. Theory-based *Casual Index* is estimated from contemporary Americans' general social opinion as well as consumer demands. To create such an index with two independent propositions, many academic studies from economics, political science, sociology, marketing as well as textile and apparel were reviewed. Among them, some research from sociological and political sciences were mainly referenced to investigate general opinion change and the first component of theory-based *Casual Index* was created based on those theories. For the second component of theory-based index, several demand analyses from econometrics area were applied to estimate changes in apparel preferences of consumers. In this section, the previous research in sociological and political science will be reviewed followed by the consumer demand analyses in economics as well as textiles and apparel.

3.1 Previous Research in Sociological and Political Sciences

There are numerous studies on social change or opinion change in sociological and political sciences. However, they are either very broad historical reviews or case studies on particular issues, or a small cluster of issues. There are few works that empirically evaluate changes across a range of phenomena. This was partly due to the scarcity of appropriate data. It was in the late 1970s that researchers like Glenn (1976), Winsborough (1975), and Davis (1980) started to examine the issues of public opinion systematically. It was about the same time when the National Opinion Research Center (NORC) started asking identical questions of national samples of adult Americans in its General Social Survey (GSS). This rigidity of GSS made it possible to track trends in Americans' opinion within a variety of social groups, using repeated samples from the same statistical universe. Since they published the first Codebook and data-file in 1972, they continued their survey with the same format until now. In this part, a critical review will be made to the selected literatures. The studies either concern socio-political Liberal/Conservative continuum or analyzing GSS items. As GSS is the main source of analyses in this study and the dichotomy of Liberalism/Conservatism is the main conceptual framework in the first part of this study, these studies were selected. Table 1 is the summary of selected previous research about social opinion changes.

As summarized in Table 1, there have been many studies of attitude change of particular topics and the general liberalism have been hypothesized popularly by many political commentators and scholars.

Table 1. Summary of Previous Research about General Social Opinion Change Analyzed with GSS Items

Author	# of GSS Items	Covered Period	Major Topic/Findings
Davis(1975)	9	1972-1973	Comparative study with Stouffer (1954)'s study about tolerance of communists, atheists, and socialists.
Ladd(1976)	AIPO survey	1960-1970	Relationship between socioeconomic Status (SES) and liberalism. Tested racial, sex equality, and political liberalism.
Smith(1978)	66	1972-1977	Relationship of age to liberal/conservative attitude change.
Davis(1980)	12	1972-1978	Found consistent conservative trends.
Knoke(1979)	11	1972-1978	By using LISREL, measured the relationship between stratification and the political belief of the electorate and compared the results from CPS with GSS items.
Smith(1980)	89	1972-1978	Social liberal/conservative trends.
Chafetz & Ebaugh(1983)	36	1972-1980	Relationship between conservatism with Civil Liberties, Abortion, and Economic scale.
Hammond(1986)	27	1982-1984	Yuppies have more liberal lifestyles.
Luloff, Miller & Beaulieu(1986)	16	1972-1980	Relationship between social conservatism and racial equity, abortion, and civil liberties.
Himmelstein & McRae(1988)	7	1980	Inverse relationship between socioeconomic status and conservatism.
Robinson & Fleishman(1988)	1	1974-1986	Liberal/conservative trends with different survey results.
Gibson(1989)	Other survey	1965-1975	Measured political intolerance and found repressive public policy reflected neither the intolerance of the mass public nor the political elite in the state.
McBroom & Reed(1990)	experiment	1971-1986	Conservative trends with the evidence of political-economic conservatism, sex-role traditionalism, and opposition to abortion.
Smith(1990)	455	1945-1987	Liberal/conservative trends in the U.S. since WWII.
Davis(1992)	42	1972-1989	Time series analysis of liberal/conservative trends.
Miller(1994)	20	1972-1989	Relationship between liberalism/conservatism and age of the individual and the time period of the interview.
Wilson(1994)	15	1976-1988	Extended Davis (1975)' study of political tolerance.
Mitchell(1996)	6	1974-1994	Baby boomers are more conservative on some issues like national spending, sexual tolerance, but more liberal on issues like labor.

Davis(1997)	50	1972-1996	Time series analysis of social change.
Hoffmann & Miller(1997)	1	1972-1994	Relationship between Conservatism trends and religious group.
Hoffmann & Miller(1998)	1	1972-1994	Measure the degree of polarization within religious groups.
Sares(1998)	5	1990-1994	Education and social influence to prosocial and sociopolitical outcomes.

However, there has been little cross-topical examination and synthesizing about the nature, causes, and extent of general liberalism. It has not been subjected to systematic and empirical examination.

Among the listed research papers, several studies after 1980s such as Chafetz and Ebaugh (1983), Smith (1980, 1990) and Davis (1980, 1992, 1997) analyzed the broad contour of social change using more advanced statistical methods. As directors of the NORC, Davis and Smith published many research papers and have been active in extensively examining social changes using GSS items. Especially, Smith analyzed 455 survey items over the period of 1930 to 1987 in his 1990's "Liberal and Conservative Trends in the U.S. since World War II" paper. His list of 455 survey items and the length of period he covered were by far the most extensive and the widest range of scope. However, he analyzed this massive amount of data using only time series analysis in one-dimension, which is Liberal/Conservative plateau.

As an extension of Smith's (1990) study, Davis (1992) analyzed 42 GSS items from early 1970s to the late 1980s. He selected 42 items from the Smith's 455 survey items but used various statistical models like a multivariate causal model with cohort effects. He found out that within cohorts, conservatism was stronger between the early and late 1970s but in the 80s liberalism was stronger. Between cohorts, however, in all items liberalism was slightly stronger.

Similar but slightly different research was found in Chafetz and Ebaugh's paper published in 1983. They analyzed 36 GSS items from 1972 to 1980 using factor analysis to give a weight to each item and compared them. Different from Davis (1980) research, they analyzed more items like civil liberties, but overall their results showed the same trend as Davis.

Another interesting research is found in a paper by Kiecolt (1988). He critically reviewed many studies concerning social change and pointed out the importance of identifying factors that specify the relationships between attitudes and social structure.

Despite limitations in method of analyses described above, the procedure of GSS item selection, the definition of Liberalism/Conservatism and the method of analysis mainly from Smith’s (1980, 1990) and Davis’ (1980, 1992, 1997) papers were adopted in this research.

3.2 Previous Research in Consumer Demand Analysis

Demand analysis comprises a major part of micro-economic theory. There have been numerous demand studies since the 17th century. It was only in the late 1900s, however, when empirical research made great progress. This is partly due to the improvement of computing capability with credible data as in the previously mentioned research.

Compared with its rich history of demand analysis in economics, there has not been much formal research on estimation of consumer demand in the textile and apparel area. However, there exist a couple of studies that measured consumer demand by using simple statistical methods. Realizing this lack of research, some brief history of demand analysis will be presented in the next section followed by a critical review of several basic demand studies in textile and apparel area.

3.2.1 Brief History of Demand Analysis

Demand analysis has had a long history in many areas including economics and statistics. Demand analysis can be classified into two related but separable areas - empirical and theoretical. The first one is the work of economists interested in the discovery of general laws governing the operation of markets, particularly agricultural markets; and the latter is the work of those, originally statisticians, interested in the psychological laws governing so called consumer preference [Deaton, 1972]. As computing capacities and skills have expanded, empirical research has produced more sophisticated demand equations while, at the same time, theoretical economists and mathematicians have enormously contributed to the development of the pure mathematics of preference relations.

Of the two areas, the empirical seems to have the longer history. In 1699, Davenant (1699) published the work about a numerical schedule of the demand for wheat. In the eighteenth century such writers as Verri (1771) and Lloyd (1771) gradually sorted out the independent influences of demand and supply on market prices, and by 1776 Adams Smith (1776) wrote "price varies directly as the quantity demanded, which depends on price; and inversely as the quantity supplied, which also depends on price."

For the theoretical area, Daniel Bernouilli (1738) laid the foundation of preference theory by writing that “any increase in wealth, no matter how insignificant, will always result in an increase in utility which is inversely proportional to the quantity of goods already possessed.” Later in the nineteenth century the specific elements of preference theory in economics were constructed by various writers whose aim was to provide a secure axiomatic foundation for the model of market equilibrium suggested by Smith.

Throughout the eighteenth and nineteenth centuries the empirical approach had made little or no progress in the measurement of demand curves despite its early and promising beginning. Significant progress was however made in the investigation of the influence of income on consumption patterns mainly by Baxter (1860), Ducpetiaux (1855), Dieterici (1838-57), and LePlay (1855). Among them, Engel (1857) made an outstanding contribution by formulating empirical laws between income and particular categories of expenditure.

In the late nineteenth century the fusion of the theoretical and empirical approaches in the writings of Marshall (1890) was considered to be the most important discovery. His work encouraged agricultural economists to apply the new technique of correlation to the analysis of single markets. In 1907 Benini (1907) used multiple regression analysis to estimate a demand function for coffee in Italy with the prices of coffee and sugar as arguments. In 1914 Lehfeldt (1914) estimated the elasticity of the demand for wheat in England under the direct inspiration of Marshall. But the serious progress in the econometric study of demand was achieved by agricultural economists in the United States, beginning with Moore (1929). His work stimulated not only statisticians interested in estimation techniques and the relation between correlation analysis and causal models but also economists interested in the construction of many-equation models describing the total operation of markets. Also at this time there were two important developments in England. First, Allen and Hicks (1934) rediscovered the Slutsky model of consumer preference and second, Allen and Bowley (1935) analyzed British family budgets, which marked the first major analysis of cross-section data based on a theoretical model.

Since 1935, there have been a number of important developments in both the theoretical and empirical sides. On the theoretical side, Samuelson (1938) introduced the revealed preference theory for the first time. In 1950, Houthakker (1950) and Samuelson (1950) developed this theory and debated about the long-standing consistency or integrability problem, or the derivation of conditions under which demand functions may lead back to a preference mapping.

On the empirical side, Stone (1953, 1954) published two important papers suggesting the need for further investigation. These were: the extension of the analysis to a wide range of commodities, the treatment of the special problems associated with durable goods and application of the more sophisticated computational and econometric techniques. After Stone's linear expenditure model, Houthakker and Taylor (1966) updated his methodology by analyzing a wide range of commodities in the United States.

One of the notable changes after 1950s is the gradual evolution in the research questions. In the classical approach, the main question was "what is the income or price elasticity of good X?" However the research questions after 1950s have been focused on more methodological issues: for example, how should demand functions be specified? What is the best way of allowing for changes in prices? These are the questions of how to measure elasticities rather than what numerical values the coefficients should take. In particular, attention has focused on the theory of demand and its relevance to applied demand analysis.

During the 1980s and 1990s, efforts were made in order to combine the theoretical approach with pragmatic functionalism. The Rotterdam model and habit stock model applied in this research were also formulated and developed in this period mainly by Theil and Barten. Now, more attention is given to model selection and in fitting econometric models which are likely to be appropriate in a given situation. With the help of rapid computing equipment, the estimation of parameters in models became a more and more routine exercise. The economists now pay more attention to the selection of appropriate data and to the specification of appropriate models involving reasonable postulates rather than to statistical and computing problems. These are the fundamental problems of consumer demand analysis of recent.

3.2.2 Empirical Studies on Consumer Demand for U.S. Apparel Industry

As reviewed in the previous section, economic demand analyses have been well developed both theoretically as well as empirically. However, until now, not many formal research papers have been found in the area of consumer demand analysis for the apparel industry. Only some literatures were found on the use of the Consumer Expenditure Survey (CES) or limited data sources.

Winakor's paper published in 1962 may be one of the earliest research analyzing changes in clothing expenditures in the U.S. The main purpose of this research was to analyze the factors causing the decline in the share of total expenditures devoted to clothing after WWII. He examined the elasticities of three major variables - total expenditure, price of clothing relative to other goods, and time. His research was updated with expanded sample data. [Winakor, 1989] He was again interested in explaining the reason of declining aggregate expenditures for clothing and shoes (CSX) as a share of total expenditures. For the analysis, he used Survey of Current Business and Current Population Reports published by the U.S. Department of Commerce. Different from his first paper, he analyzed the data and tested his hypothesis using more advanced statistical methods such as Box-Jenkins AR(1) model, a regression analysis. He concluded his analysis by noting that clothing inventory no longer has much effect on current clothing expenditures; clothing expenditures have become a matter of habit. His research was the first to which analyze a long period of data so that he could catch the change of time trends. However, his lack of theoretical background of modeling and analysis techniques could not reflect the consumer's changes in demand for the long run.

After 1980, several researchers have attempted estimating clothing or consumer demands using statistical analysis tools. Mokhtari (1992) introduced a method for applying cointegration techniques to econometric modeling of U.S. clothing expenditures. Others such as Dardis *et al.* (1981), Frisbee (1985), and Houthakker and Taylor (1970) have also contributed to the ever-growing field of U.S. clothing expenditure analysis.

Dardis *et al.* (1981) estimated the relationship among clothing expenditures and total expenditures, and other variables. This research is valuable in the fact that they used quantitative models and suggested several important factors which might affect the consumer's expenditures on clothing consumption.

Similar, but more theoretical and advanced research has been done by Norum (1989) to examine the effects of various socioeconomic and demographic characteristics on household expenditures for apparel. This study used 1980-81 Consumer Expenditure Survey collected by BLS (Bureau of Labor Statistics) to estimate quarterly household expenditure. He found that 1) the income elasticity is inelastic, which is consistent with other research, 2) the pattern of clothing expenditure varies with the age-sex composition of households, 3) male 18 and older showed no significant effect on overall clothing expenditures, whereas the effects existed for females in the same age group, 4) education had a significant positive relationship with clothing expenditures, and 5) region and race had little impact on household apparel expenditures.

As summarized in the above, Dardis *et al.* (1981) and Norum (1989) analyzed consumer expenditures and tested variables that could explain the structure of consumer demand using statistical and econometrical models. They are the pioneers who began setting up theoretical models to estimate the consumer demand quantitatively. Unfortunately, the Consumer Expenditure Survey does not provide full information of individual household's apparel expenditure and thus have limitations to be tested fully with theoretical models.

As mentioned above, a more complete set of data was needed in order to explain the consumer purchase behavior more precisely. Recently, one paper attempted a comprehensive analysis on a new set of data which had not been used previously. Suh and Funderburk (1997) proposed new statistical models in order to analyze the NPD consumer panel data of detailed monthly records of apparel-related transactions at household level. Suh and Funderburk (1997) used 76 monthly NPD data from January 1990 through April 1996. They chose five Men's apparel items and classified them into two categories (casual and dress) in two statistical models. One of the significant outcomes from the work of Suh and Funderburk (1997) was that the statistical models used could not only explain the past demands well but also were capable of forecasting the future demands effectively.

Suh and Funderburk's statistical model and analysis were considered to be useful for understanding U.S. apparel sales data and forming a strategy for the future. However, the modeling work presented in their study was very fundamental and not comprehensive. A more comprehensive model using other economic and social variables may be needed. Also, five items in Men's wear were not enough to represent the whole fashion trend. More apparel items should be applied so that consumer's preference shift and apparel trend can be estimated more precisely.

4 Definition of Casual vs. Formal

As described briefly in the introduction, this research began with the assumption that Americans became more *casual* than *formal* during the last three decades. There is no historical record what was the origin of the casual wear or from when casual wear became popular. Before the 1920s, dichotomy did not exist between clothing for work and clothing for social or leisure functions. In 1960s, when the U.S. was in a turbulence of a social awakening centered around Vietnam War and the Civil Rights movement, jeans became popular especially among young adults. With economic growth and prosperity in 1980s, the casual wear demands also continued to grow even though the economic growth did not directly result in increased demand for most dress apparel.

It was also mid-1980s when the Casual Workplace phenomenon also called 'Casual Friday' or 'Dress down Day' arose. Since then, Casual Friday phenomena have grown continuously and now became an innovation in today's corporate workplace in U.S. The birth of Casual Friday is attributed to several different factors. It is credited, in part, to the high-tech companies in the Silicon Valley. Thirty years ago, they began hiring primarily people from blue-collar backgrounds as well as increased numbers of women in the workplace and work-at-home employees. Because these employees were more comfortable in the casual clothing they had worn all their lives, employers adopted relaxed dress codes. Further impetus for Casual Friday came from employer's needs to improve the morale of white-collar workers that saw their colleagues laid off during the late 1980s and early 1990s. In the past 10 years, the trend toward casual wear everyday has spread through the corporate world. By the late 1990s, employees below middle management in one third of U.S. companies had gone casual five days a week, according to an Evans Research Associates' survey. Casual Friday is intertwined with American Society's urge to wear comfortable clothing all the time.

As described briefly above, the casual wear demands continued to grow during the modern history of U.S. Especially during the last three decades, Americans seem to have become more *casual* than *formal* in every respect of living. However, many companies have reported confusions concerning how to define casual wear in their workplaces. There are great needs to define what *casual* or *formal* means. It should be noted that the casual/formal in this research not only applies to apparel fashion but also applies to all aspects of lifestyle. Unfortunately, *casual* and *formal* are abstract concepts and must be clarified and redefined to one’s liking. The American Heritage Dictionary lists one definition of the word "*casual*" as "informal; relaxed." This, no doubt, helps it little to define *casual*. Part of the problem is that the definition for *casual* and *formal* can be very broad, vague and thus is perhaps subject to change over time. The terms *casual* and *formal* are enormous and many-faced in their meanings but many people described them as single entity, oversimplifying their complexities. For example, in apparel magazines, casual wear is often meant by leisurewear, such as blue jeans, shorts, T-shirts, and so on. There was no definitive author or work that one can reference as an authoritative pronouncement on what contemporary *casual* means.

Due to such difficulties it is beyond our ability to offer a comprehensive universally accepted definition or rigorous criteria for measuring *casualness* and *formalness*. Instead, a list of attributes for *casual/formal* was developed with the help of several references such as *Lifestyle Monitor*™ from Cotton Incorporated and a couple of research from the NORC. To develop such a list, first, many research papers on political and sociological science have been reviewed. Among them, a few of the Smith’s (1980, 1990) and Davis' research (1980, 1992) about Americans' sociopolitical trends dichotomized as liberal/conservative seem to be relevant to the current research.

As reviewed in the previous section, Smith (1990) developed the most extensive collection of sociopolitical liberal/conservative attitude trend data. He collected 455 items mainly from the General Social Survey, the American National Election Studies and over a dozen different survey organizations. To develop this extensive collection, he first surveyed contemporary liberalism often described as interventionist, reform, social, new, etc. and made a list of its prime attributes. The list of attributes developed were then evaluated how issues had been viewed by two archetypical liberal and conservative groups, the Americans for Democratic Action (ADA) and the American Conservative Union (ACU), respectively. His definition of liberalism has many common traits with the concept of *Casual*. Some of his key words were selected as a base definition of casual if they were widely used and if they covered a range of *casual/formal* theme. By expanding his definition, a list of attributes for *casual* was developed. Some of the selected key words from Smith's study were libertarian, democratic, reformist, humanitarian, egalitarian, permissive, and multinational. Expanded attributes were diversity, equal right, equality, relaxed, satisfaction, etc.

The list compiled is not comprehensive and is somewhat subjective. It represents extensive range of social phenomena, but clearly misses or under-represents many important issues. Also, it ignores the problem that the attributes are not always complementary and are occasionally contradictory. Table 2 lists the attributes of casual, developed for this research and the *Casual Index* will be created within this conceptual framework.

Table 2. A List of Attributes of Casual

A List of Attributes of Casual
➢ Tolerance and approval of diversity in life style. ➢ Support for the welfare and for the protection of society. ➢ Gender and racial equality. ➢ Opting for change and new technology. ➢ Favor for a full extension of electoral right. ➢ Tolerating and often approving of nontraditional life styles and practices. ➢ Favor for supporting the management of business and the economy by the government. ➢ Support for civil liberties such as free speech and freedom to protest. ➢ Active lifestyle. ➢ Pragmatic, independent, individualistic and self-indulgence. ➢ More educated and interested in education. ➢ Supporting the UN and other collective efforts.

5 Model Selection and Specification

In this section, the Almost Ideal Demand (AID) System incorporating habit stock terms will be introduced with the theoretical background and the mathematical derivation. Derived estimable equations will be used as our base model to create a theory-based index as a demand component.

5.1 Almost Ideal Demand (AID) System with Habit Stock Terms

As reviewed in the theoretical background sections, many functional forms and specification of demand models have been developed in economics. Since Stone (1954) first explicitly derived the linear expenditure system from the consumer theory, the Rotterdam model proposed by Theil (1975) and Barten (1968, 1977) and the translog model proposed by Christensen, Jorgenson, and among others seem to be the most important models in use. Both of these models have been extensively estimated and have been used to test the homogeneity and symmetry restrictions of demand theory. In this research, the Almost Ideal Demand (AID) System first developed by Deaton and Muellbauer (1980) is applied. This demand model is known to hold the generality of the Rotterdam model and the translog model and believed to have advantages over those two models. Deaton and Muellbauer (1980) listed these advantages in their paper and asserted that neither the Rotterdam nor the translog models can possess all, only AID System can possess all the properties. Some of the advantages they listed were 1) it gives an arbitrary first-order approximation to any demand system, 2) it satisfies the axioms of choice exactly, 3) it aggregates perfectly over consumers without invoking parallel linear Engel curves, 4) it has a functional form which is consistent with known household-budget data, 5) it is simple to estimate, largely avoiding the need for non-linear estimation, and 6) it can be used to test the restrictions of homogeneity and symmetry through linear restrictions on fixed parameters.

Considering these advantages, the AID System was selected as a basic demand function in this research. This basic AID System was extended by incorporating dynamic habit effects after the manner of Pollak and Wales (1969) and Blanciforti and Green (1983). By including a dynamic structure into the AID System explicitly, these authors examined the relationship between estimated price and income elasticity estimates.

In the following section, the mathematical derivation of basic AID System as well as habit stock effects will be shown.

5.2 Basic AID Model Setup

The main purpose of this study is to model the Casual/Formal categories of apparel demand by using habit formation models of the sort conceived by Manser (1976), Pollak and Wales (1969), Blanciforti and Green (1983), Pollak and Wales (1992), and Holt and Goodwin (1997), among others. The habit formation model is based on hypotheses that are 1) past consumption influences current preferences and current demand and 2) a higher level of past consumption of a good implies, *ceteris paribus*, a higher level of present consumption of that good.

Deaton and Muellbauer (1980) developed and estimated a demand system, named Almost Ideal Demand (AID) System. When they applied their system to annual British data, they found plausible parameter estimates and reasonable elasticities estimates. However, they concluded that some elements other than current prices and current total expenditures were needed to explain consumer behavior more theoretically coherent and empirically robust way. One way to improve their original system was by adding dynamic elements. Pollak (1970) is one of the researchers who developed dynamic demand function based on the assumption that the consumption in the previous period influences current preference and demand, but that consumption in the more distant past does not. Ray (1984) extended the AID System by adding family size and tested empirically. Blanciforti and Green (1983) more systematically suggested incorporating habit effects into the AID System after the manner of Pollak and Wales (1969). By explicitly including dynamic structure into the AID System, AID System was generalized more dynamically with the test of several restrictions rejected by Deaton and Muellbauer (1980) in their original system.

Similar to Pollak and Wales' (1969) and Blanciforti and Green (1983)'s dynamic demand systems, however, our system is specified to include both linear and nonlinear habit augmentation terms to model habit formation in apparel demand.

To explain the model setup, the preference functions known as *PIGLOG (Price Independent Generalized Linear Log)* class, are represented via the expenditure function that defines the minimum expenditure necessary to attain a specific utility level at given prices. This function *e(u,p)* for utility *u* and price vector *p* can be denoted by

$$\log e(u, p) = (1-u)\log\{a(p)\} + u\log\{b(p)\} \tag{5.1}$$

Next, we take specific functional forms for $\log a(p)$ and $\log b(p)$. We take

$$\log a(p) = a_0 + \sum_i a_i \log p_{it} + \frac{1}{2}\sum_i \sum_j \gamma_{it}^{*} \log p_{it} \log p_{jt} \tag{5.2}$$

$$\log b(p) = \log a(p) + \beta_0 \prod_i p_{it}^{\beta_i} \tag{5.3}$$

so that the AIDS cost function is written

$$\log e\left(u, \underline{p}_t\right) = \alpha_0 + \sum_i \alpha_i \log p_{it} + \frac{1}{2}\sum_i \sum_j \gamma_{it}^{*} \log p_{it} \log p_{jt} + u\beta_0 \prod_{i=1}^{n} p_{it}^{\beta_i} \tag{5.4}$$

where p_{it} represents the price of apparel item *i* at time *t*, *u* is the consumer's (unobservable) utility index, and α_0, α_i, β_i, $\gamma_{ij} = \left(\tilde{\gamma}_{ij} + \tilde{\gamma}_{ji}\right)/2$ are the parameters to be estimated.

Demand functions can be derived directly from equation (5.4). It is fundamental property of the cost function that its price derivatives are the quantities demanded: $\partial e(u,p)/\partial p_{it} = q_{it}$. Multiplying both sides by $p_{it}/e(u,p)$ we find

$$\frac{\partial \log e(u,p)}{\partial \log p_{it}} = \frac{p_{it}q_{it}}{e(u,p)} = w_{it} \tag{5.5}$$

where $w_{it} = p_{it}q_{it}/\mu_t$ is the i^{th} expenditure (budget) share, with q_{it} denoting the quantity of the i^{th} item purchased. For a utility-maximizing consumer, total expenditure μ is equal to *e(u,p)* and this equality can be inverted to give *u* as a function of *p* and *x*, the indirect utility function. Total group expenditure is denoted by $\mu_t = \sum_{i=1}^{n} p_{it}q_{it}$. Hence, logarithmic differentiation of (5.4) gives the budget shares as a function of prices and utility:

$$w_{it} = \alpha_i + \sum_j \gamma_{ij} p_{jt} + \beta_i \left(\log \mu_t - \log P_t\right),\ i = 1,\ldots,n \tag{5.6}$$

where

$$\log P_t = \alpha_0 + \sum_i \alpha_i \log p_{it} + \frac{1}{2}\sum_i \sum_j \tilde{\gamma}_{ij} \log p_{it} \log p_{jt} \tag{5.7}$$

is the price index used in the AID system to deflate total group expenditure. The standard parameter restrictions induced by economic theory associated with the static AID model defined by (5.6.) and (5.7) are given by:

$$\textit{Adding up}: \sum_{i=1}^{n} \alpha_i = 1, \sum_{i=1}^{n} \gamma_{ij} = 0 \forall j, \sum_{i=1}^{n} \beta_i = 0. \tag{5.8}$$

$$\textit{Homogeneity}: \sum_{i=1}^{n} \gamma_{ij} = 0 \forall j\,. \tag{5.9}$$

Symmetry: $\gamma_{ij} = \gamma_{ji.}$ (5.10)

The model defined by (5.6.) and (5.7), subject to the parameter restrictions identified in (5.8) to (5.10), constitutes the basic static AID demand system. As such, there is no scope for the prior history of consumer purchase patterns to influence the demand for various apparel items purchased at present. The dynamic generalizations of the AID system considered so far have assumed that habit-forming behavior is characterized by short memory; parameters in the expenditure function depend only on last period's consumption.

To achieve this generalization, lagged expenditure terms were introduced into the expenditure function in (5.4) in a manner advocated by Pollak (1970), Phlips (1972), McCarthy (1974), Ray (1984), and Pollak and Wales (1992). Thus, the dynamic expenditure function that includes habit-augmenting terms have been developed as follows:

$$\begin{aligned}\ln e\left(u, \underline{p}_t \right) &= \alpha_0 + \sum_i \delta_i r_{it-1} + \sum_i \left(\alpha_i + \kappa_i \mu_{t-1}\right) \log p_{it} \\ &+ \frac{1}{2} \sum_i \sum_j \left(\gamma_{ij} + \theta_{ij}\mu_{t-1}\right) \log p_{it} \log p_{jt} + u \prod_{i=1}^{n} p_{it}^{(\beta_i + \eta_i \mu_{it-1})},\end{aligned} \tag{5.11}$$

where $r_{it-1} = p_{it-1} q_{it-1} / \mu_{t-1}$ is lagged expenditure on the i^{th} item, and where δ_i, κ_i, η_i, and $\theta_{ij}, i, j = 1, \ldots, n$ are additional parameters to be estimated that capture the consumers' 'habit response' with respect to lagged apparel purchases. The consumer's perception of 'fixed expenditure' on clothing in the present period not only depends on current apparel prices, but also on the consumer's standard of living in the previous period as measured by lagged purchases.

Subsequently, we obtained an estimable AID demand system that incorporates the general nonlinear, non-additive habit effects in its specification. The resulting *n*-equation demand system is given by:

$$w_{it} = \alpha_i + \kappa_i \mu_{t-1} + \sum_j \left(\gamma_{ij} + \theta_{ij}\mu_{t-1}\right) p_{jt} + \left(\beta_i + \theta_{ij}\mu_{t-1}\right)\left(\log \mu_t - \log P_t^*\right) + \nu_{it}, \; i = 1, \ldots, n, \tag{5.12}$$

where ε_{it} is a white noise error term and where the general deflator $\ln P_t^*$ is now given by

$$\log P_t^* = \alpha_0 + \sum_i \delta_i r_{it-1} + \sum_i \left(\alpha_i + \kappa_i \mu_{t-1}\right) \log p_{it} + \frac{1}{2} \sum_i \sum_j \left(\gamma_{ij} + \theta_{ij}\mu_{t-1}\right) \log p_{it} \log p_{jt} \tag{5.13}$$

6 Data and Hypotheses

In this study, two data sets were analyzed. GSS (General Social Survey) was the main source for the first component of the theory-based composite index and the Current Industrial Report MQ23A – Apparel series from U.S. Census Bureau was used for the second part of the index. Both data sets cover almost three decades: 1972-1998. In this section, the data structure, the procedure of data collection, the data handling including missing data and the hypotheses will be described in each data set.

6.1 GSS Data and Hypotheses

GSS is conducted by NORC and it is annual personal interview sampling of the United States adult population, English speakers 18 and older, and living in households. Surveys have been completed in 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1980,1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1993, 1994, 1996, and 1998. There are a total of 38,116 completed interviews. GSS has been surveyed annually until 1994 and then became biennial.

The basic purposes of the GSS are 1) to gather data on contemporary American society in order to monitor and explain trends and constants in attitudes, behaviors, and attributes, 2) to examine the structure and functioning of society in general as well as the role played by relevant subgroups, 3) to compare the United States to other societies in order to place American society in comparative perspective and develop cross-national models of human society, and 4) to make high-quality data easily accessible to scholars, students, policy makers, and others, with minimal cost and waiting. [NORC homepage] In 1972 to 1974, the design was of the modified probability type with quota elements introduced at the final stage. Full probability sampling was employed in half of the 1975 and 1976 surveys and the 1977, 1979, 1980, 1982-1991, 1993-1994, 1998 surveys. [GSS Cumulative Codebook, 1999]

GSS items cover a deliberately wide variety of content: detailed background characteristics with special emphasis on current and parental socioeconomic status; abortion, sex, and sex roles; racial attitudes, morale and satisfaction measures; a vocabulary test; crime and violence, etc. Roughly half the items are permanent and appear each year. The others are assigned to one of three rotation schemes arranged so zero-order correlations for any two variables can be obtained. The exact wording of these questions is retained to facilitate time trend studies as well as replications of earlier findings.

The GSS 1972-1998 Cumulative Codebook was purchased from the Roper Center and the corresponding data set was downloaded from the NCSU library. Figure 2 shows an example of one item from the 1998 Codebook.

As shown in Figure 2, "[VAR: CAPPUN]" refers to the variable name. A mnemonic was assigned to each question to promote standardization in the use of General Social Survey variable names. Under the heading "RESPONSE", all possible answers to the questions are listed. The term "PUNCH" represents the code or numerical value which was assigned to each response. [GSS Cumulative Codebook, 1999]

[VAR: CAPPUN]

82. Do you favor or oppose the death penalty for persons convicted of murder?

RESPONSE	PUNCH	YEAR									COL: 360
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Favor	1	6933	154	5410	154	4,274	1151	2215	2059	1906	24,256
Oppose	2	2936	165	1696	165	1,242	337	580	621	693	8,435
Don't know	8	607	32	399	33	364	112	184	214	220	2,165
No answer	9	33	3	37	1	27	6	13	10	13	143
Not applicable	BK	3117	0	0	0	0	0	0	0	950	4,067

Figure 2. An Example of GSS Item

The whole data set from 1972 to 1998 was analyzed for this research. It should be noted that there are no data available in 1979, 1981, 1992, 1995 and 1997. To deal with these missing years, a moving average technique of order 3 was applied and 27 estimated data points were assigned for the analysis. Table 3 shows the calculation of moving average of order 3 with 27 data.

Table 3. Calculation of Moving Average of Order 3 to Deal with Missing Data

Year	Data No.	MA order 3
1972	1	1972
1973	2	1973
1974	3	1974
1975	4	1975
1976	5	1976
1977	6	1977
1978	7	1978
-	8	(1978+1980)/2
1980	9	1980
-	10	(1980+1982)/2
1982	11	1982
1983	12	1983
1984	13	1984
1985	14	1985

1986	15	1986
1987	16	1987
1988	17	1988
1989	18	1989
1990	19	1990
1991	20	1991
-	21	(1991+1993)/2
1993	22	1993
1994	23	1994
-	24	(1994+1996)/2
1996	25	1996
-	26	(1996+1998)/2
1998	27	1998

"-" Indicates missing data.

Main hypotheses are "Is there any causal relationship between apparel purchase patterns and the general social opinion?" and "Is there any public opinion change in terms of casual/formal dichotomy during 1972-1998?" If so, "how much change can be detected and what is the threshold?"

To test these main hypotheses, 112 GSS items were selected and were classified into 13 categories according to the related topics. All GSS items were carefully reviewed and only items repeated during the whole sample period were pre-selected. These pre-selected items were screened by the definition of Casual/Formal listed in the previous section so that the items can represent the characteristics of Casual/Formal issues. In each of the thirteen categories, a matching hypothesis was assigned according to the theoretical backgrounds of previous research. It should be noted that the referenced theories were from sociological and political science within the Liberal/Conservative dichotomy not from textiles and apparel due to the lack of references in these areas. The selected 112 items and the matching hypothesis with references are tabulated in Table 4. (See Appendix 17.1 for full questionnaires and the answers.)

Table 4. Selected 112 GSS Items with 13 Categories and the Matching Hypotheses

<table>
<tr><th>Category No.</th><th>Category Topic</th><th>No. of Items</th><th>Mnemonics</th></tr>
<tr><td>1</td><td>Abortion</td><td>6</td><td>ABDEFECT, ABNOMORE, ABHLTH, ABPOOR, ABRAPE, ABSINGLE</td></tr>
<tr><td colspan="4">H1: People, supporting legal abortions will prefer casual wear to formal.
(Smith(1978, 1990), Davis(1975,1992), Chafetz & Ebough (1983), McBroom & Reed(1990), Luloff et al.(1986), Hammond(1986))</td></tr>
<tr><td>2</td><td>Civil Liberties</td><td>9</td><td>COLATH, COLCOM, COLHOMO, LIBATH, LIBCOM, LIBHOMO, SPKATH, SPKCOM, SPKHOMO</td></tr>
<tr><td colspan="4">H2: People, supporting civil liberties will prefer casual wear to formal.
(Smith(1980, 1990), Davis(1975,1992), Chafetz & Ebough (1983), Luloff et al.(1986), Wilson(1994))</td></tr>
<tr><td>3</td><td>Confidence</td><td>8</td><td>CONFINAN, CONBUS, CONJUDGE, DEGREE, FAIR, HELPFUL, SATCITY, SATFIN</td></tr>
<tr><td colspan="4">H3: People, having more confidence in people running institutions and in the society living will prefer casual wear to formal.
(Smith(1978), Chafetz & Ebough (1983), Sares(1998))</td></tr>
<tr><td>4</td><td>Social Welfare & Violence</td><td>14</td><td>CAPPUN, COURTS, EQWLTH, HELPBLK, HELPPOOR, FEAR, GUNLAW, OWNGUN, PISTOL, POLATTAK, POLESCAP, POLHITOK, RIFLE, SHOTGUN</td></tr>
<tr><td colspan="4">H4: People, advocating social welfare and less violence will prefer casual wear to formal.
(Smith(1990), Davis(1975, 1992)-conservative direction, Sares(1998), Mitchell(1996))</td></tr>
<tr><td>5</td><td>Family</td><td>4</td><td>CHLDMORE, CHLDIDEL, CHLDNUM, FAMGEN</td></tr>
<tr><td colspan="4">H5: People, having smaller family will prefer casual wear to formal.
(Smith(1978, 1990), Hammond(1986))</td></tr>
<tr><td>6</td><td>Federal Government Responsibility</td><td>9</td><td>NATARMS, NATCITY, NATCRIME, NATDRUG, NATEDUC, NATENVIR, NATFARE, NATHEAL, NATSPAC</td></tr>
<tr><td colspan="4">H6: People, supporting government’s spending on national problems will prefer casual wear to formal.
(Chafetz & Ebough (1983),Smith(1978, 1990) Davis(1980)-conservative direction, Hammond(1986))</td></tr>
<tr><td>7</td><td>Feminism</td><td>4</td><td>FEFAM, FEHOME, FEPRES, FEWORK</td></tr>
<tr><td colspan="4">H7: People, supporting equal rights for women will prefer casual wear to formal.
(Smith(1978, 1980, 1990), Davis(1992, 1997), McBroom & Reed(1990), Hammond(1986))</td></tr>
<tr><td>8</td><td>Labor</td><td>9</td><td>JOBFIND, JOBLOSE, JOBMEANS, JOBSEC, MEMUNION, RICHWORK, UNEMP, UNION, WKSUB</td></tr>
<tr><td colspan="4">H8: People, having higher standards of their work will prefer casual wear to formal.
(Smith(1990))</td></tr>
<tr><td>9</td><td>Lifestyle & Socio-Political Participation</td><td>13</td><td>DRINK, LIFE, MEMGREEK, MEMHOBBY, MEMPOLIT, MEMPROF, MEMSCHL, MEMSPORT, MEMSERV, SOCBAR,</td></tr>
</table>

			SOCFREND, SOCOMMUN, TVHOURS
H9: People, having active lifestyles and participating actively in social and political activities will prefer casual wear to formal. *(Smith(1990))*			
10	Politics	7	ANOMIA7, COMMUN, NATAID, PARTYID, POLVIEWS, USINTL, USUN
H10: People, supporting liberal, international and multi-national policy in politics will prefer casual wear to formal. *(Smith(1990), Davis(1975), Chafetz & Ebough (1983), Miller(1994))*			
11	Race & Ethnicity	12	BUSING, NATRACE, RACCLOS, RACDIS, RACFEW, RACINTEG, RACMAR, RACMOST, RACOPEN, RACPRES, RACSEG, SPKRAC
H11: People, opposing racism will prefer casual wear to formal. *(Smith(1980, 1990), Davis(1992, 1997), Knoke(1979), McBroom & Reed(1990), Luloff et al.(1986), Hammond(1986), Wilson(1994))*			
12	Religion	8	ATTEND, CONCLERG, FUND, LETDIE1, MEMCHURH, POSTLIFE, RELITEN, SUICIDE1
H12: People who are less religious will prefer casual wear to formal wear. *(Smith(1990), Davis(1992), Hoffman & Miller (1997, 1998), Luloff et al(1986))*			
13	Tolerance & Permissiveness	9	GRASS, HOMOSEX, PORNINF, PORNLAW, PORNMORL, PORNOUT, PORNRAPE, PREMARSC, XMOVIE
H13: People who are tolerating non-traditional practices and open for sex will prefer casual wear to formal. *(Smith(1990), Davis(1997), McBroom & Reed(1990), Hammond(1986), Mitchell(1996), Wilson(1994))*			

Each variable was extracted from the original cumulative data file using a GSS variable search/extract program provided by Social Science Data Collection, the data services unit of the library of the University of California, San Diego. [SSDC Access Data] Sex was selected for a control variable. Thus two sub-sets of data files (male/female) were created for each variable from 1972 to 1998 and thus each data set is an array of 27 years by 112 items clustered into 13 categories. However, the created two sub-sets of data files were merely an array of all possible answers for each variable. Among them, only a couple of answers that were assigned as casual and formal should be counted and coded as a final data set. (Assigned answers are listed in Appendix 17.1 along with the original questionnaires.) Using SQL, a simple program was created so that it can count how many respondents answered casual and formal for each variable in each year. The results of this program was coded and the final data sets were created after all items were clustered into 13 categories and the missing years were filled up according to the suggested moving average technique shown in Table 3.

Most of the 13 categories were from either GSS subject list or previous research. Only the category of "Lifestyle & Socio-Political Participation" was created by this study's own purpose. After all 112 items were clustered into 13 categories, correlations within each category were tested to check whether the items in the category measure the same thing. In other words, correlations among items within a category were analyzed so that only highly correlated items can form a category. To perform this correlation test, Cronbach's Coefficient Alpha was checked in each category. Cronbach's Coefficient Alpha estimates the reliability of scale by determining the internal consistency of the test or the average correlation of items within the test. [Cronbach, 1951] Only one example (Abortion category) among 13 categories is tabulated in Tables 5 to 6, and the rest of the results are listed in Appendix 17.2.

Table 5. The Results of Correlation Test by Cronbach's Coefficient Alpha for Abortion Category for Male Population

Abortion (Male)	
Cronbach's Coefficient Alpha	
Variables	Alpha
Raw	0.678521
Standardized	0.619328

Cronbach's Coefficient Alpha with Deleted Variable				
	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
ABDEFECT	0.837850	0.450007	0.464295	0.528779
ABHLTH	0.721849	0.490297	0.380157	0.563578

ABNOMORE	0.037997	0.717261	0.309505	0.591570
ABPOOR	0.117061	0.705629	0.404113	0.553834
ABRAPE	0.763444	0.477931	0.377489	0.564655
ABSINGLE	-.121502	*0.747302*	0.181635	*0.639477*

Table 6. The Results of Correlation Test by Cronbach's Coefficient Alpha for Abortion Category for Female Population

Abortion (Female)	
Cronbach's Coefficient Alpha	
Variables	Alpha
Raw	0.796700
Standardized	0.792718

Cronbach's Coefficient Alpha with Deleted Variable				
	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
ABDEFECT	0.904077	0.659812	0.689558	0.725551
ABHLTH	0.741807	0.721387	0.509422	0.769382
ABNOMORE	0.274548	0.813880	0.464340	0.779804
ABPOOR	0.345895	0.804979	0.544986	0.761008
ABRAPE	0.841213	0.682315	0.590574	0.750075
ABSINGLE	0.239148	0.818546	0.476220	0.777078

As shown in Tables 5 and 6, Cronbach's Alpha procedure returns two coefficients: raw and standardized. Raw correlation is calculated based on item correlation whereas the standardized one is based on covariance. The more the items are inter-related, the more likely the test is consistent and also the higher the correlation coefficient is, the higher the covariance is. Because the variances of some variables vary widely, the standardized scores are used to estimate reliability. The overall standardized alphas of male and female are 0.619 and 0.797 respectively. These are acceptable coefficient values that are relatively close and greater than Nunnally's suggested value of 0.70. [SAS Online Documents], [Nunnally, 1978]

The second set of tables of Tables 5 and 6 show how each item is correlated with the entire test and what the Alpha will be if that variable is deleted. For example, the first line of second table in Table 5 shows that if ABDEFECT is deleted, the Alpha will be dropped to 0.450007 (raw) or 0.528779 (standardized). Therefore, the variable ABDEFECT should remain in the Abortion category. A variable was dropped from a category if both of the deleted Alphas were greater than overall Alphas. Keeping in these rules in mind, all 112 variables were examined and the decision whether the item should remain or deleted in the category was made. In the Abortion category shown above, ABSINGLE was dropped for male and all variables remained for female. Based on the correlation check, a total of 81 and 85 items were selected for male and female, respectively. The final selected items are tabulated in Tables 7 and 8.

Table 7. Final Selected GSS Items and the Categories for Male

Total 81 Items

Category No.	Category Topic	No. of Items	Mnemonics
1	Abortion	5	ABDEFECT, ABNOMORE, ABHLTH, ABPOOR, ABRAPE
2	Civil Liberties	9	COLATH, COLCOM, COLHOMO, LIBATH, LIBCOM, LIBHOMO, SPKATH, SPKCOM, SPKHOMO
3	Confidence	5	CONFINAN, CONBUS, CONJUDGE, FAIR, SATFIN
4	Social Welfare & Violence	10	CAPPUN, COURTS, EQWLTH, HELPBLK, HELPPOOR, OWNGUN, POLATTAK, POLESCAP, POLHITOK, RIFLE
5	Family	2	CHLDIDEL, FAMGEN
6	Federal Gov. Responsibility	6	NATARMS, NATCITY, NATDRUG, NATEDUC, NATENVIR, NATHEAL
7	Feminism	2	FEHOME, FEWORK
8	Labor	7	JOBFIND, JOBLOSE, JOBMEANS, JOBSEC, MEMUNION, RICHWORK, UNEMP
9	Lifestyle & Socio-Political Participation	10	LIFE, MEMGREEK, MEMHOBBY, MEMPOLIT, MEMPROF, MEMSCHL,

			MEMSPORT, MEMSERV, SOCBAR, TVHOURS
10	Politics	4	COMMUN, POLVIEWS, USINTL, USUN
11	Race & Ethnicity	9	BUSING, RACCLOS, RACDIS, RACINTEG, RACMAR, RACMOST, RACOPEN, RACSEG, SPKRAC
12	Religion	6	ATTEND, CONCLERG, FUND, LETDIE1, RELITEN, SUICIDE1
13	Tolerance & Permissiveness	6	HOMOSEX, PORNINF, PORNMORL, PORNOUT, PORNRAPE, XMOVIE

Table 8. Final Selected GSS Items and the Categories for Female

Total 85 Items

Category No.	Category Topic	No. of Items	Mnemonics
1	Abortion	6	ABDEFECT, ABHLTH, ABNOMORE, ABPOOR, ABRAPE, ABSINGLE
2	Civil Liberties	9	COLATH, COLCOM, COLHOMO, LIBATH, LIBCOM, LIBHOMO, SPKATH, SPKCOM, SPKHOMO
3	Confidence	6	CONFINAN, CONBUS, CONJUDGE, FAIR, HELPFUL, SATCITY
4	Social Welfare & Violence	9	EQWLTH, FEAR, HELPBLK, HELPPOOR, GUNLAW, OWNGUN, POLHITOK, RIFLE, SHOTGUN
5	Family	2	CHLDIDEL, FAMGEN
6	Federal Gov. Responsibility	6	NATARMS, NATCITY, NATDRUG, NATEDUC, NATENVIR, NATHEAL
7	Feminism	3	FEHOME, FEPRES, FEWORK
8	Labor	7	JOBFIND, JOBLOSE, JOBMEANS, JOBSEC, RICHWORK, UNEMP, UNION
9	Lifestyle & Socio-Political Participation	11	LIFE, MEMGREEK, MEMHOBBY, MEMPOLIT, MEMPROF, MEMSCHL, MEMSPORT, MEMSERV, SOCBAR, SOCFREND, TVHOURS
10	Politics	4	ANOMIA7, POLVIEWS, USINTL, USUN
11	Race & Ethnicity	9	BUSING, RACCLOS, RACDIS,RACINTEG, RACMAR, RACMOST, RACOPEN, RACSEG, SPKRAC
12	Religion	6	ATTEND, CONCLERG, FUND, LETDIE1, RELITEN, SUICIDE1
13	Tolerance & Permissiveness	7	GRASS, HOMOSEX, PORNINF, PORNLAW, PORNOUT, PORNRAPE, PREMARSC

The answers from the selected GSS items were polarized with either (+) or (-) sign according to the casualness of the answer. That is, if the answer represents casualness, (+) was assigned, and if the answer represents formalness, (-) was assigned. For each item, the proportion of the (+) answers and the (-) answers were calculated and the trichotomous answers by subtracting the proportion of (-) from (+) were reported. To check the magnitude of opinion shift for each category, the average score of each category for each year was calculated. The calculated average scores are tabulated in Tables 9 and 10. These average scores are mainly used for the analyses and expected to indicate the overall opinion shift from "formal" to " casual" or vice versa over the three decades.

Table 9. Average GSS Item Scores of 13 Categories for Male

CATEGORY	ABORTION	Civil Liberties	CONFIDENCE	Social Welfare & Violence	Family	Federal Government Responsibility
1972	272	89	366	-179	151	336
1973	333	93	358	-174	165	458
1974	304	88	365	-155	202	449
1975	272	81	313	-191	318	384
1976	295	120	329	-205	192	369
1977	295	89	402	-201	325	356
1978	243	109	364	-207	341	318
1979	264	131	342	-211	337	274
1980	286	131	320	-212	345	231
1981	301	133	352	-202	378	326
1982	317	135	382	-178	407	420
1983	242	156	346	-238	360	402
1984	229	168	259	-169	365	153
1985	251	140	337	-209	387	270
1986	265	184	333	-192	319	190
1987	277	210	420	-178	467	195
1988	134	97	272	-156	421	200
1989	187	160	246	-168	473	232
1990	166	153	228	-145	431	224
1991	200	180	205	-136	437	216
1992	202	178	216	-149	468	236
1993	203	177	227	-163	499	256

1994	366	347	497	-353	904	427
1995	350	352	480	-323	900	409
1996	333	356	462	-292	896	391
1997	304	338	478	-228	781	413
1998	276	320	494	-165	666	436

CATEGORY	Feminism	Labor	Lifestyle & Socio-Political Participation	Politics	Race & Ethnicity	Religion	Tolerance & Permissiveness
1972	148	278	-346	214	33	123	-219
1973	165	267	-327	235	47	129	-170
1974	174	261	-272	214	56	108	-208
1975	212	267	-255	149	27	154	-206
1976	199	255	-287	180	62	151	-194
1977	188	275	-260	182	46	166	-196
1978	236	270	-236	183	105	167	-219
1979	236	293	-241	166	114	158	-216
1980	245	283	-247	150	105	157	-214
1981	316	257	-239	169	143	169	-211
1982	316	225	-198	172	178	178	-208
1983	340	245	-248	184	106	204	-203
1984	291	252	-204	105	136	150	-161
1985	399	276	-169	132	136	165	-184
1986	339	252	-214	143	136	205	-184
1987	325	295	-291	125	180	178	-227
1988	238	179	-140	121	148	166	-121
1989	216	196	-126	136	135	176	-134
1990	236	177	-127	114	145	168	-125
1991	235	182	-124	151	170	175	-104
1992	264	185	-126	151	175	175	-121
1993	294	187	-129	151	181	176	-138
1994	496	210	79	15	234	369	-153
1995	514	219	78	11	217	379	-154
1996	532	261	27	58	233	389	-154
1997	514	245	12	70	224	325	-150
1998	496	229	-3	82	238	262	-145

Table 10. Average GSS Item Scores of 13 Categories for Female

CATEGORY	ABORTION	Civil Liberties	CONFIDENCE	Social Welfare & Violence	Family	Federal Government Responsibility
1972	249	5	434	90	161	460
1973	334	73	407	110	197	538
1974	374	91	436	114	239	517
1975	346	25	428	103	390	539
1976	344	40	389	101	259	506
1977	368	36	469	95	408	486
1978	316	65	493	98	431	524
1979	319	105	439	102	413	458

1980	323	105	385	110	430	391
1981	365	98	450	142	482	518
1982	407	91	519	175	533	644
1983	275	132	486	120	467	570
1984	282	131	379	141	511	177
1985	249	109	401	147	476	220
1986	306	172	452	150	424	291
1987	285	134	499	213	616	239
1988	166	109	300	107	564	308
1989	201	152	294	111	604	319
1990	191	123	249	117	519	277
1991	196	151	273	141	604	324
1992	204	174	284	136	632	318
1993	212	198	295	131	660	313
1994	447	365	426	228	1165	592
1995	427	367	395	237	1144	570
1996	406	370	388	246	1123	548
1997	363	406	414	239	1021	575
1998	321	442	441	231	920	602

CATEGORY	Feminism	Labor	Lifestyle & Socio-Political Participation	Politics	Race & Ethnicity	Religion	Tolerance & Permissiveness
1972	245	291	-362	135	-7	-19	-266
1973	283	267	-344	137	28	15	-220
1974	323	292	-236	147	36	1	-228
1975	325	298	-255	97	32	56	-232
1976	327	296	-297	72	41	57	-187
1977	273	306	-236	123	42	40	-223
1978	400	329	-267	114	101	92	-220
1979	400	347	-257	86	113	73	-215
1980	386	338	-251	66	115	55	-210
1981	563	306	-210	85	165	55	-212
1982	563	251	-163	95	206	60	-214
1983	506	318	-257	131	144	128	-219
1984	444	364	-235	93	184	45	-222
1985	464	301	-179	82	143	90	-194
1986	447	320	-246	91	174	108	-214
1987	488	402	-322	20	209	83	-300
1988	324	248	-137	79	191	106	-154
1989	349	253	-146	95	184	99	-167
1990	332	233	-106	80	160	116	-132
1991	377	278	-154	123	203	113	-146
1992	384	279	-152	97	221	114	-137
1993	392	280	-149	71	239	114	-128
1994	803	354	172	-49	275	286	-151
1995	785	340	164	-48	258	280	-140
1996	767	355	66	21	284	274	-129
1997	738	372	52	19	297	318	-100
1998	708	389	38	17	336	362	-72

6.2 Current Industrial Report MQ23A

To analyze the casual trend of contemporary Americans, Current Industrial Report MQ23A series provided by U.S. Census Bureau were employed. These are the quarterly reports including quantity of production and shipment figures for men's and junior boys', misses' and junior girls', children's and infants, and women's apparel for all fibers. The annual summary also includes revisions of the quarterly data originally estimated and a table containing domestic output, exports, and imports. In this study, the annual reports from 1972 to 1998 were analyzed and the revised annual summary data was coded.

All apparel items for men’s and women’s from 1972 to 1998 were coded with unit volumes as well as dollar values. Underwear, nightgowns, pajamas, sleepwear, and all items for infants and children’s were not included to keep age consistency with GSS data. After coding, all MQ23A items were compared with NPD items and a couple of items were either excluded or merged into other items. This procedure was necessary because MQ23A series list over 30 items for men’s and women’s, respectively, and over the course of thirty years, items were added or stopped being recorded due to the various reasons. Excluded items were men’s casual suits, women’s fur trimmed coat, men’s and women’s down and feather filled jacket, padded jacket, separate vests, sweatpants, team sports uniform, warm-up jogging suits, play suits, and ski wear. Merged items were other knit shirts (merged to knit outerwear sport-shirts), athletic shorts (merged to shorts), pullover sweater and jersey (merged to sweaters), and Jean-cut casual slacks that only existed during 1972-1977, were merged to jeans and dungarees. Part of the reason NPD was used, as a standard is that NPD is known for the most reliable and extensive panel data in existence. NPD consists of panel members' diaries with detailed information on the products (style, color, size, fiber contents, and etc.), the consumers (age, sex, income, education, and etc.), and purchase specifics (store type, price, and etc.). However, it could not be used as a main data source because NPD is only available back to 1990.

The important feature of the coded MQ23A data is manufacturer’s shipment data, which includes the portion of apparel that will be exported to the foreign countries but does not reflect the portion of imported from outside of the U.S. To be compatible for the objectives of this research, domestic apparel demands needed to be estimated. To estimate this figure, apparent apparel consumption of each item was derived for each year from the manufacturers' shipment MQ23A plus imports minus exports. However, from 1972 to 1978, import/export data were not available. Therefore, a backward projection method for the missing years was used and the apparent apparel consumption for this period was estimated.

For the further analyses, two kinds of adjustments were made to the derived apparent apparel consumption from MQ23A. Those were inflation and population adjustment.

Inflation adjustment was made by applying PPI (Producer Price Index) Apparel index to the dollar values of the derived apparent apparel consumption data. PPI is popularly used as a deflator of economic series by adjusting other economic time series for price changes and translate those series into inflation-free dollars. Over 10,000 PPIs for individual products and groups of products are released each month. PPI was selected rather than CPI (Consumer Price Index) because MQ23A data can be classified as wholesale values rather than as retail values. PPIs measure price change from the perspective of the seller whereas the Consumer Price Index (CPI) measures price change from the purchaser's perspective. Original PPI data provided from BLS (Bureau of Labor Statistics) measures price change compared to the price of 1981. In other words, 1981 is the base year of calculation. However, in this study, 1998 was used as a base year and PPI was recalculated. The original PPI Apparel Index and the recalculated PPI are tabulated in Table 11.

Table 11. Original PPI Apparel Index and Recalculated PPI with 1998 as a Base Year

	Original PPI Apparel Index	Recalculated PPI with 1998 base
1972	59.1	46.7
1973	61.3	48.4
1974	66.7	52.6
1975	68.6	54.2
1976	72.0	56.8
1977	75.8	59.9
1978	78.4	61.9
1979	82.5	65.2
1980	88.7	70.0
1981	95.7	75.6
1982	100.0	79.0
1983	101.6	80.2
1984	103.6	81.8
1985	105.0	82.9
1986	106.3	84.0
1987	108.4	85.6
1988	111.7	88.2
1989	114.5	90.4
1990	117.5	92.8
1991	119.7	94.5
1992	122.2	96.5
1993	123.2	97.3
1994	123.5	97.5
1995	124.3	98.1
1996	125.1	98.8
1997	125.7	99.2
1998	126.6	100.0

Population adjustment was also made for the further analyses, and per capita consumption and unit price were estimated. Per capita consumption was derived by total unit volume of apparent apparel consumption divided by total male/female population over the age of eight to exclude infants and young children. Infants and young children populations were not included to make a consistent data structure with the total apparent apparel consumption data. Population estimation was referenced from U.S. Census Bureau. Unit price of each item was also calculated by total dollar value divided by total unit volume. As a result, a total eight sets of data: men's and women's total apparent apparel consumption with unit volume and dollar values, per capita consumption and unit price of each item were created for analysis.

Final stage of data handling was categorization of casual and formal. All items were dichotomized into casual or formal according to a set of definitions. The definitions of casual and formal wear are listed below. It should be noted that these definitions are only for the purpose of categorization of *Casual/Formal wear*, a subset of the overall definition of *Casualness* that covers every respect of lifestyles, which is described in the previous section

<u>Definition of Casual wear</u>

Appropriate for wear or use in an informal occasion.

- Attire that fits for *corporate casual, business casual.* You feel comfortable and relaxed when working but it should be appropriate for meeting clients.
- Attire that can be worn for leisure outings such as spectator sports, tennis, golf, dancing, etc.
- Attire that can be worn for blue-collar work.
- Attire that can be worn for light social, casual meeting, casual dinner.

Definition of Formal wear

Appropriate for wear or use on a formal occasion.

- Attire that can be worn for a wedding, cocktail party, formal reception and formal party, etc.
- Attire that can be worn for formal business meetings e.g. business dinner, business presentation, and business conference.
- Attire that can be worn when formal wear is required e.g. restaurant, theater, and show, etc.

After all items in MQ23A were categorized, a reliability test was performed to check the degree of correspondence between the author's categorization technique and the other textile experts'. Reliability test is a common method to check the reliability between two sets of frequencies of classified symbol data based on the results of analysis of the same communications by two independent groups of analysis. [Janis et al. 1943] A survey was created with the explanation of the overall research objectives, the purpose of this survey, the definition of Casual/Formal wear and the list of items. Ten textile/apparel experts including six university professors, two industry executives, and two industry senior researchers were selected as judges and they were asked to categorize each item either casual or formal whichever they think the item should belong to by the definitions listed above. The survey form was distributed in person to help them understand the purpose of this survey and fully inform them regarding directions on how to complete the form. Also, when the completed survey forms were collected, each judge was interviewed and his or her opinion was recorded. The sample survey form of the reliability test is included in the Appendix 17.3. The collected survey forms were carefully compared with author's categorization and the results of the reliability test are summarized in Table 12.

Table 12. The Results of Reliability Test of Categorization of Casual and Formal Wear

Author		*Judge One*	
		Formal	Casual
	Formal	12	7
	Casual	0	32

Total N = 51
N Agree = 44 % Agree = 86.3

Author		*Judge Two*	
		Formal	Casual
	Formal	14	5
	Casual	1	31

Total N = 51
N Agree = 45 % Agree = 88.2

Author		*Judge Three*	
		Formal	Casual
	Formal	6	13
	Casual	0	32

Total N = 51
N Agree = 38 % Agree = 74.5

Author		*Judge Four*	
		Formal	Casual
	Formal	10	9
	Casual	4	28

Total N = 52
N Agree = 38 % Agree = 74.5

Author		*Judge Five*	
		Formal	Casual
	Formal	16	2
	Casual	3	30

Total N = 51
N Agree = 46 % Agree = 90.2

Author		*Judge Six*	
		Formal	Casual
	Formal	17	4
	Casual	2	28

Total N = 51
N Agree = 45 % Agree = 88.2

Author		*Judge Seven*	
		Formal	Casual
	Formal	15	4
	Casual	0	32

Total N = 51
N Agree = 47 % Agree = 92.2

Author		*Judge Eight*	
		Formal	Casual
	Formal	11	10
	Casual	1	29

Total N = 51
N Agree = 40 % Agree = 78.4

Author		*Judge Nine*	
		Formal	Casual
	Formal	15	3
	Casual	0	33

Total N = 51
N Agree = 48 % Agree = 94.1

Author		*Judge Ten*	
		Formal	Casual
	Formal	11	9
	Casual	1	30

Total N = 51
N Agree = 41 % Agree = 80.4

As shown in Table 12, the numbers along the diagonal represent agreements between the author and the judges, while the other scores represent disagreements. One clear pattern of disagreement to emerge was women's dress and skirts. Perhaps this disagreement could be explained by the fact that women's dress and skirts could be either casual or formal according to the price, style, and fiber contents. MQ23A reports these items by the price range and the fiber content. Based on advice provided by the industry experts, those two items were divided into casual dress/formal dress and casual skirts/formal skirts according to the price range.

In any case, the large extent of agreement between the author and the outside judges (the range was 74.5 percent to 94.1 percent and the average agreement was 84.7 percent.) gives fair confidence that the basic distinction between casual and formal wear is a reasonable and reliable one. While the reliability test is certainly not extensive enough to establish a clear line between casual and formal wear, there are no strong indications that the categorizations are necessarily unreliable either.

Including divided dress and skirts into casual and formal, the number of items categorized to the Casual/Formal categories is 5(Men's), 6(Women's) for formal, 15(Men's), and 11(Women's) for casual respectively. Items within casual and formal category by men's and women's were summed up and the ratios of the casual consumption to the total consumption were calculated.

7 Preliminary Results of Trend Analyses of General Social Opinion and Apparel Demand

The GSS and Apparel Consumption databases that were created contain twenty-seven years of historic information about general opinion change and apparel demand. In this part, before the databases were applied to the models to create the *Casual Index*, preliminary analyses were made to describe the basic features of the data and to check whether there are any noticeable time trends. The analyses will include descriptive statistics that provide summaries about the sample and simple time series analyses. In this section, overall apparel consumption trends as well as general social opinion change during the last three decades will be summarized. In the final section, preliminary analysis of the relationship between apparel purchase pattern and the general social opinion change will be made. Thirteen hypotheses proposed in the previous section will be tested based on this relationship.

7.1 Apparel Consumption Trends During 1972-1998

Tables 13 and 15 are the estimated casual and formal shares to the total apparel consumption for men's and women’s during 1972 to 1998 based on MQ23A data. Tables 14 and 16 are the descriptive statistics based on the data listed in Tables 13 and 15. As shown in Tables 13 and 15, the casual shares increased continuously during the last three decades whereas the formal wear shares decreased markedly. The trends are illustrated in Figures 3 and 4. Both in unit volume and dollar values, men’s casual share were higher than women’s casual share during the sample period. However, for the rate of change in casual share, women’s rates were higher than the men’s both in unit volume and in dollar values. (Women’s and men’s rate of increase was 58% and 21 %, respectively, when calculated with base year 1972, in unit volume, whereas they were 41% and 36% in dollar values.) For the formal wear, there were no significant differences between men’s and women’s in both unit volume and dollar values. (For unit volume, men’s and women’s rate of increase was 55% and 58%, respectively, whereas for dollar values, both men’s and women’s were 29%.) Therefore, the figures listed in Tables 13 and 15 represent casual consumption trends for the last twenty-seven years and they will be used as dependent variables in the rest of the analyses. The entire research activities to create a *Casual Index* are to estimate casual shares with two different approaches.

Table 13. Men's Casual and Formal Shares to the Total Apparel Consumption Based on MQ23A Data During 1972-1998

Men's	Unit Volume		Dollar Values	
	Formal Share	Casual Share	Formal Share	Casual Share
1972	0.27	0.73	0.52	0.48
1973	0.25	0.75	0.50	0.50
1974	0.23	0.77	0.47	0.53
1975	0.20	0.80	0.43	0.57
1976	0.19	0.81	0.42	0.58
1977	0.19	0.81	0.39	0.61
1978	0.20	0.80	0.41	0.59
1979	0.20	0.80	0.40	0.60
1980	0.18	0.82	0.37	0.63
1981	0.17	0.83	0.36	0.64
1982	0.18	0.82	0.36	0.64
1983	0.18	0.82	0.36	0.64
1984	0.19	0.81	0.38	0.62
1985	0.18	0.82	0.38	0.62
1986	0.23	0.77	0.42	0.58
1987	0.12	0.88	0.36	0.64
1988	0.17	0.83	0.37	0.63
1989	0.17	0.83	0.37	0.63
1990	0.13	0.87	0.28	0.72
1991	0.12	0.88	0.28	0.72
1992	0.11	0.89	0.25	0.75
1993	0.10	0.90	0.23	0.77
1994	0.10	0.90	0.23	0.77
1995	0.11	0.89	0.21	0.79
1996	0.11	0.89	0.22	0.78
1997	0.13	0.87	0.24	0.76
1998	0.12	0.88	0.24	0.76

Table 14. Descriptive Statistics of Men's Apparel Shares During 1972-1998

	Var.	N	Max.	Min.	Median	Mean	Range	Std.Dev.
Unit Volume.	Formal	27	0.27	0.10	0.18	0.168	0.17	0.048
	Casual	27	0.90	0.73	0.82	0.832	0.17	0.048
Dollar Values	Formal	27	0.52	0.21	0.37	0.350	0.31	0.088
	Casual	27	0.79	0.48	0.63	0.650	0.31	0.088

Table 15. Women's Casual and Formal Shares to the Total Apparel Consumption Based on MQ23A During 1972-1998

	Formal Share	Casual Share	Formal Share	Casual Share
Women'	**Unit Volume**		**Dollar Values**	
1972	0.56	0.44	0.59	0.41
1973	0.56	0.44	0.58	0.42
1974	0.54	0.46	0.57	0.43
1975	0.54	0.46	0.57	0.43
1976	0.53	0.47	0.57	0.43
1977	0.52	0.48	0.57	0.43
1978	0.51	0.49	0.59	0.41
1979	0.52	0.48	0.60	0.40
1980	0.51	0.49	0.58	0.42
1981	0.49	0.51	0.56	0.44
1982	0.46	0.54	0.54	0.46
1983	0.45	0.55	0.54	0.46
1984	0.44	0.56	0.52	0.48
1985	0.43	0.57	0.50	0.50
1986	0.44	0.56	0.51	0.49
1987	0.41	0.59	0.53	0.47
1988	0.41	0.59	0.49	0.51
1989	0.36	0.64	0.44	0.56
1990	0.38	0.62	0.43	0.57
1991	0.34	0.66	0.44	0.56
1992	0.33	0.67	0.40	0.60
1993	0.33	0.67	0.42	0.58
1994	0.37	0.63	0.43	0.57
1995	0.40	0.60	0.47	0.53
1996	0.40	0.60	0.47	0.53
1997	0.39	0.61	0.44	0.56
1998	0.40	0.60	0.42	0.58

Table 16. Descriptive Statistics of Women's Apparel Shares During 1972-1998

	Var.	N	Max.	Min.	Median	Mean	Range	Std.Dev.
Unit Volume.	**Formal**	27	0.56	0.33	0.44	0.445	0.23	0.073
	Casual	27	0.67	0.44	0.56	0.555	0.23	0.073
Dollar Values	**Formal**	27	0.60	0.40	0.52	0.510	0.20	0.065
	Casual	27	0.60	0.40	0.48	0.490	0.20	0.065

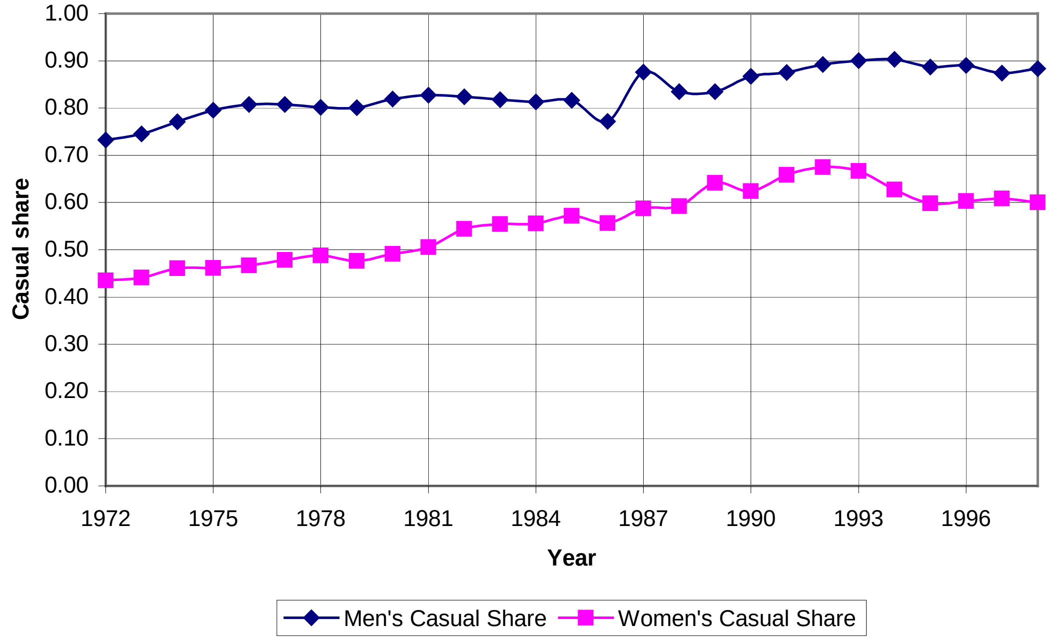

Figure 3. Men's and Women's Casual Shares from 1972-1998 in Unit Volume

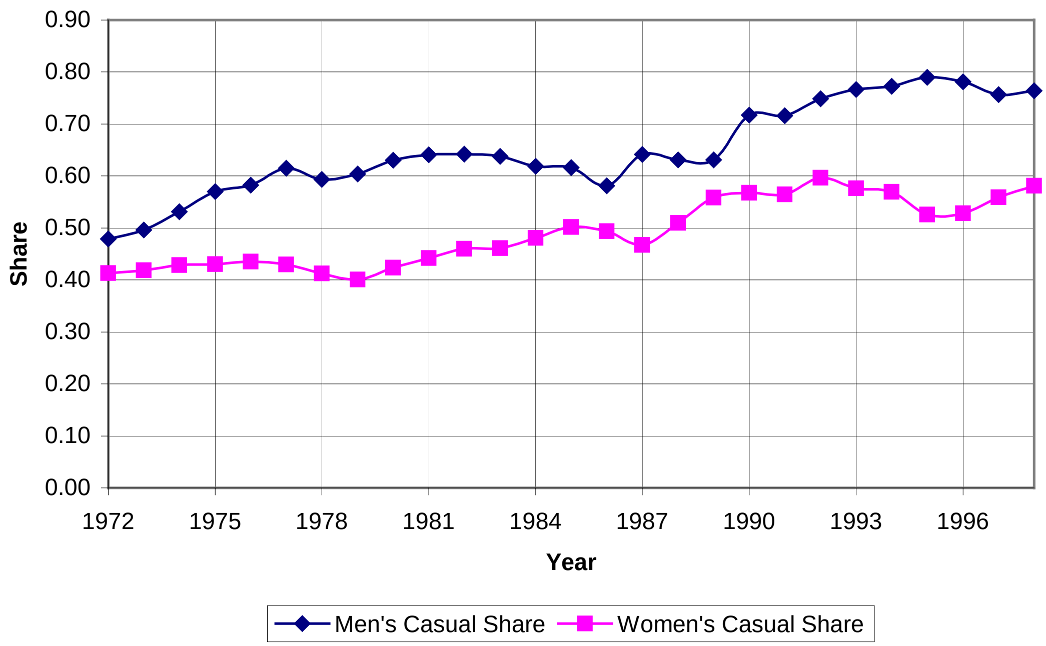

Figure 4. Men's and Women's Casual Shares from 1972-1998 in Dollar Values

Men’s and women’s per capita consumption of apparel is summarized in Figures 5 and 6.

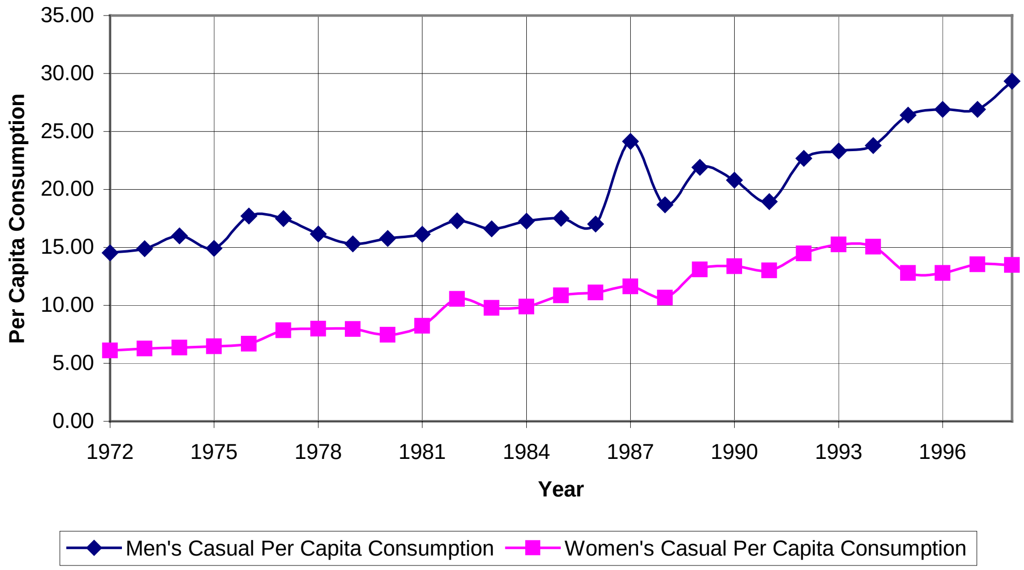

Figure 5. **Men's and Women's Per Capita Consumption of Casual Wear from 1972-1998**

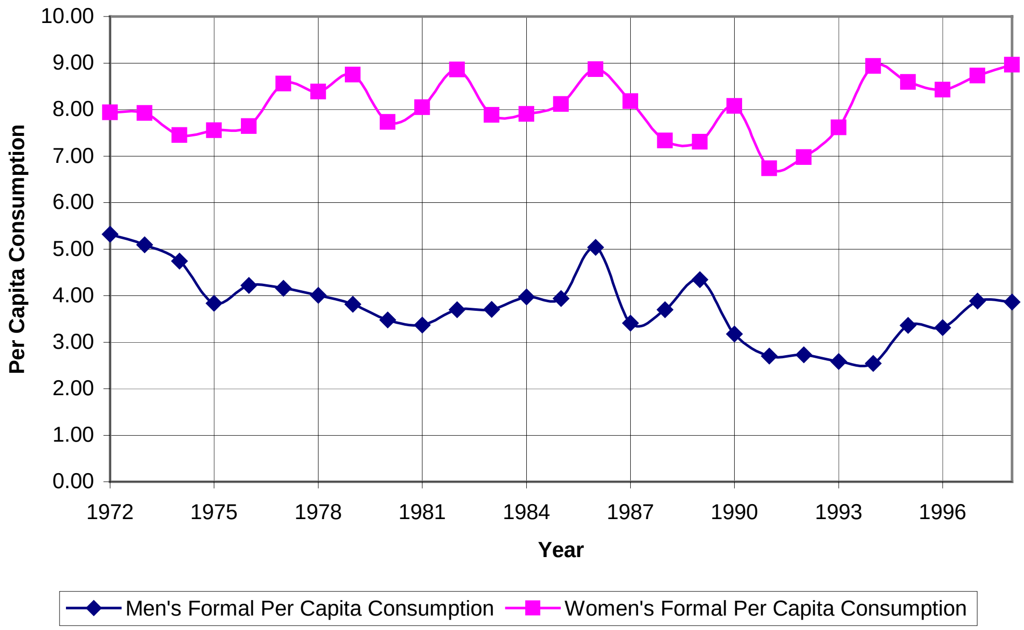

Figure 6. **Men's and Women's Per Capita Consumption of Formal Wear from 1972-1998**

As shown in Figures 5 and 6 for casual wear consumption, there were increasing trends in both men's and women's until 1993. After 1993, there was a decreasing trend in women's casual consumption, whereas men's casual consumption showed even higher rate of increasing trend. However, it was found that men consume casual wear almost three times as much as women do each year.

In case of formal wear, as illustrated in Figure 6, women's consumption was greater than men's. In terms of trends, both men's and women's consumption showed a constant decrease until 1991 (in the case of men's, until 1993), then showed increasing trends.

Lastly, the apparel trend analyses in unit price of casual and formal wear for men's and women's are shown in Figure 7.

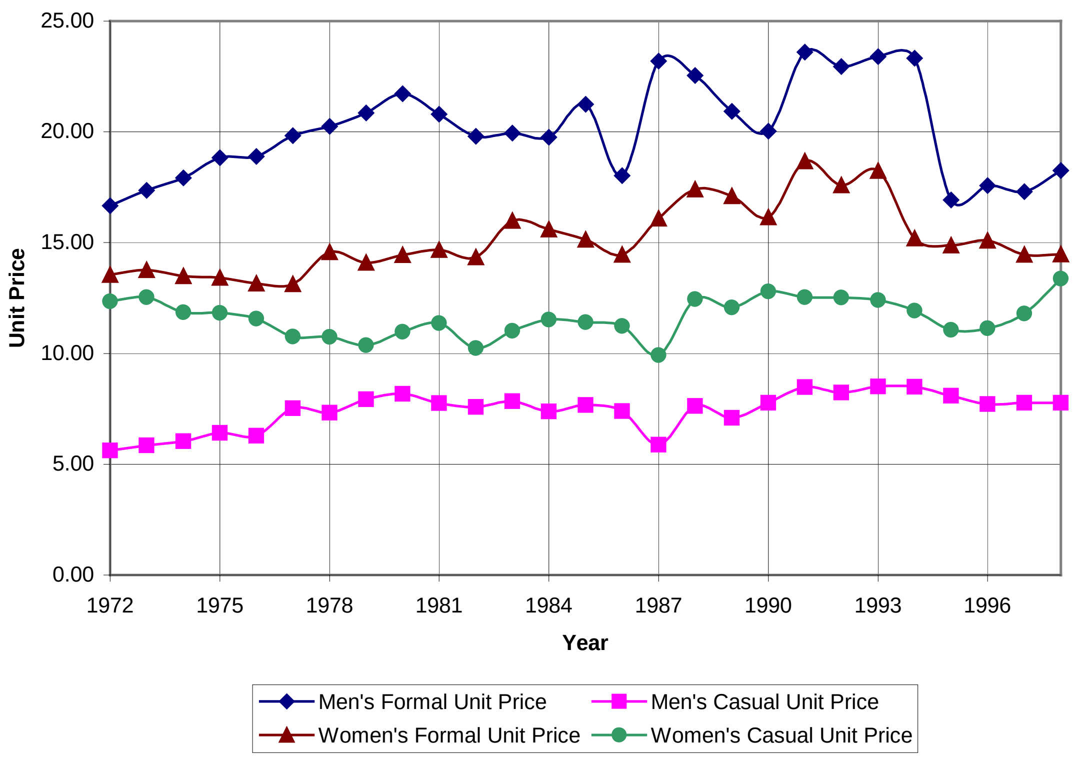

Figure 7. Men's and Women's Unit Price of Apparel (U.S. Current Dollars)

Men’s formal wear was by far the most expensive item. Overall, the unit prices of formal wear were higher than those of casual wear, which intuitively make sense. In case of casual wear, women’s casual was more expensive than men’s. Perhaps, this could explain why men consume more casual wear in terms of per capita consumption. Overall, the price of apparel has risen when compared to the price thirty years ago. Except for women’s casual wear, the price of apparel has experienced decreasing trends after 1993. Women’s casual wear showed a decreasing trend until 1987 and then showed an increase. There were two points where the prices dropped abruptly in this figure. They were in 1987 (21% drop for men's and 12% drop for women's) for casual and 1995 and 1994 for formal (27% drop for men's and 17% drop for women's). The price drop in 1987 might be from the tragic crash in financial system and the stock market in 1987. Also, the price drop in 1995 could be the effect of NAFTA and 807 provisions. NAFTA was incepted in 1993 and it may have affected the overall price of apparel to be lower.

As analyzed above, men’s and women’s apparel demands showed dynamic movement during the last three decades. It was clearly found that casual trend in apparel has been increasing markedly whereas formal trend has been decreasing steadily. In order to broaden the outlook, the general social behavior that will cover every aspect of lifestyle will be examined in the next section to see if the same casual trend found in apparel can be found in them, too.

7.2 Trend Analysis of General Social Survey During 1972-1999

In this section, the results of preliminary analyses with GSS database constructed in the previous section will be shown. Tables 17 and 18 show the descriptive statistics of GSS dataset.

Table 17. Descriptive Statistics of GSS Data for Male Population

Variable	N	Max.	Min.	Med.	Mean	Range	Std.Dev.	Sum
abortion	27	366	134	272	265.44	232	56.81	7167
civil	27	356	81	153	174.63	275	88.49	4715
confidence	27	497	205	346	347.89	292	86.57	9393
social	27	-136	-353	-191	-199.22	217	51.94	-5379
family	27	904	151	387	442.04	753	212.84	11935
federal	27	458	153	326	317.44	305	94.69	8571
feminism	27	532	148	264	302.37	384	116.96	8164
labor	27	295	177	252	241.52	118	37.31	6521
lifestyles	27	79	-346	-204	-170.85	425	119.85	-4613
politics	27	235	11	150	139.37	224	55.48	3763
race	27	238	27	136	137.41	211	63.86	3710
religion	27	389	108	169	197.11	281	77.37	5322
tolerance	27	-104	-227	-184	-174.78	123	36.95	-4719

Table 18. Descriptive Statistics of GSS Data for Female Population

Variable	N	Max.	Min.	Med.	Mean	Range	Std.Dev.	Sum
abortion	27	447	166	319	306.5185	281	78.00166	8276
civil	27	442	5	123	158.1111	437	122.1214	4269
confidence	27	519	249	414	400.9259	270	74.13912	10825
social	27	246	90	131	145.7407	156	51.27047	3935
family	27	1165	161	511	570.1111	1004	278.9045	15393
federal	27	644	177	486	437.9259	467	136.7032	11824
feminism	27	803	245	400	459.1111	558	167.0123	12396
labor	27	402	233	306	311.3704	169	44.43158	8407
lifestyles	27	172	-362	-210	-165.519	534	145.1992	-4469
politics	27	147	-49	86	77	196	50.95096	2079
race	27	336	-7	174	162	343	91.97031	4374
religion	27	362	-19	92	115.5926	381	99.42266	3121
tolerance	27	-72	-300	-210	-186.37	228	52.51824	-5032

Based on the average scores of GSS selected items with 13 categories listed in Tables 9 and 10, linear regression analyses were performed to check whether there were notable opinion changes during the last three decades. Figures 8(a) to 8(m) are the linear trend plotting of 13 categories from GSS for male and female population.

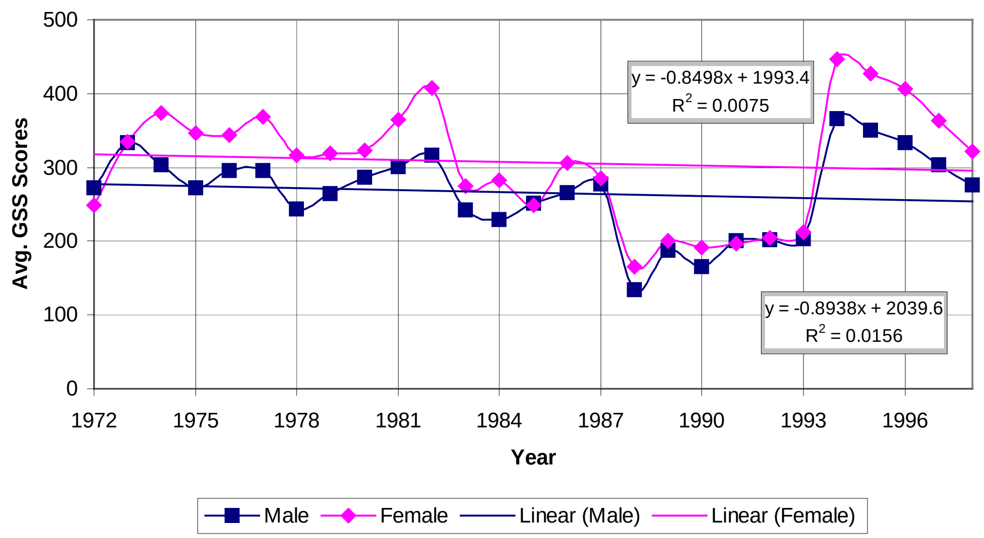

Figure 8-(a). Linear Trend Analysis of Avg. GSS Scores of Abortion Category

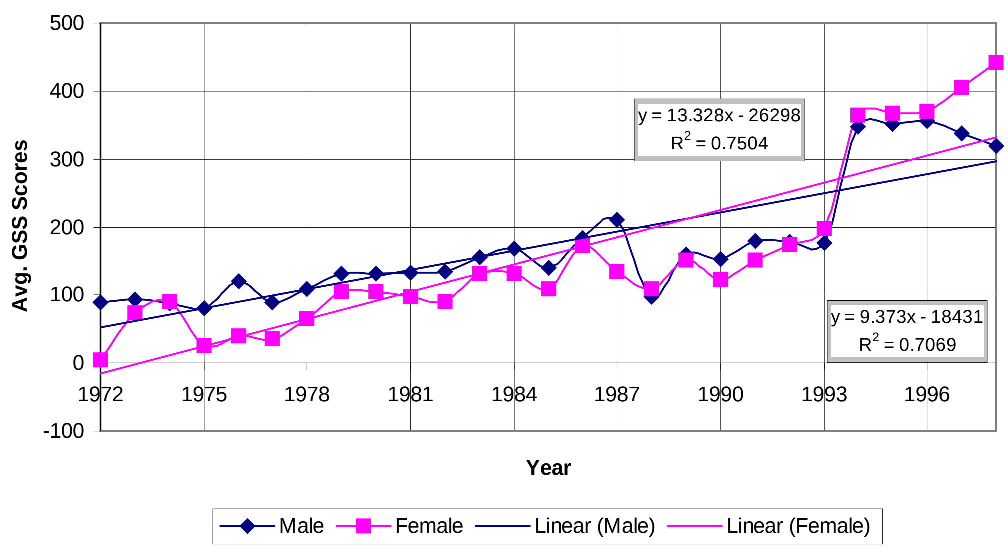

Figure 8-(b). Linear Trend Analysis of Avg. GSS Scores of Civil Liberties Category

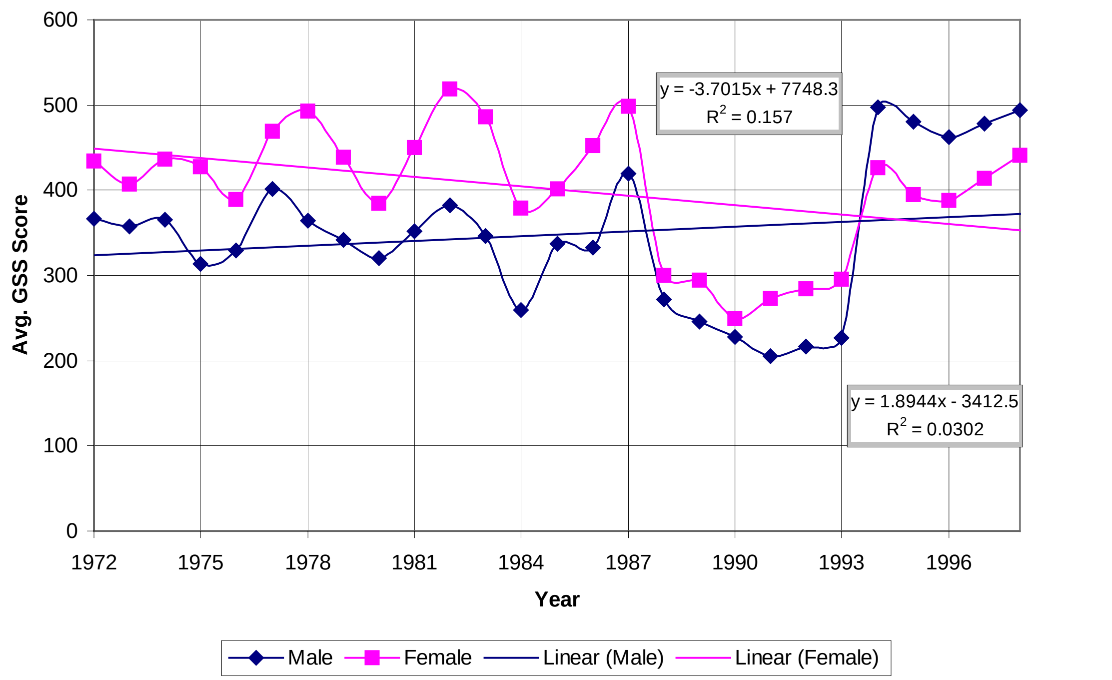

Figure 8-(c). Linear Trend Analysis of Avg. GSS Scores of Confidence Category

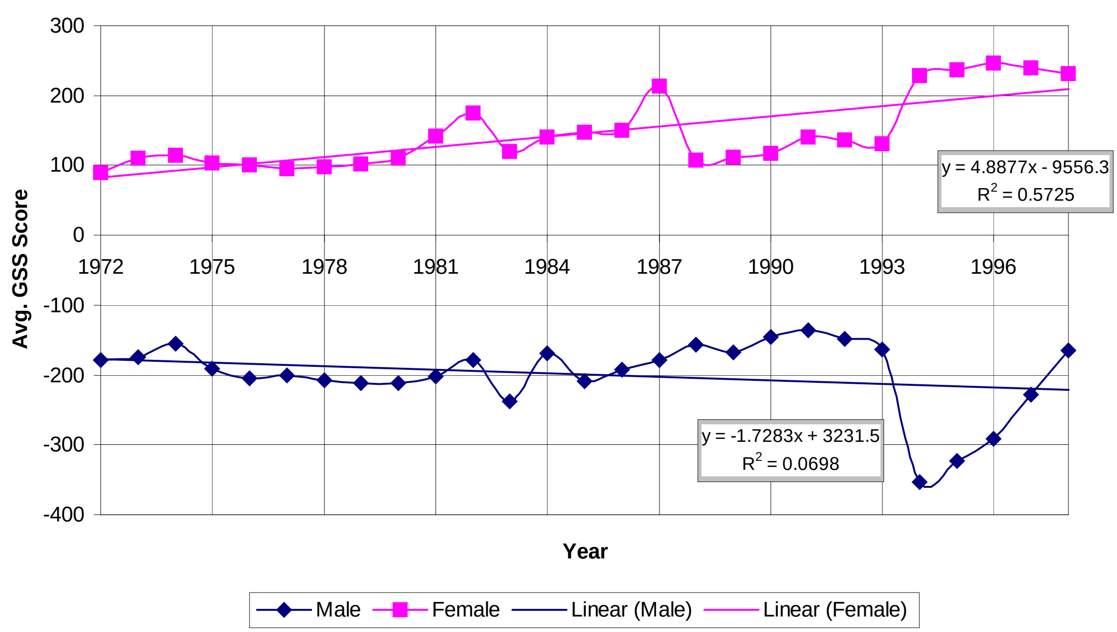

Figure 8-(d). Linear Trend Analysis of Avg. GSS Scores of Social Welfare & Violence Category

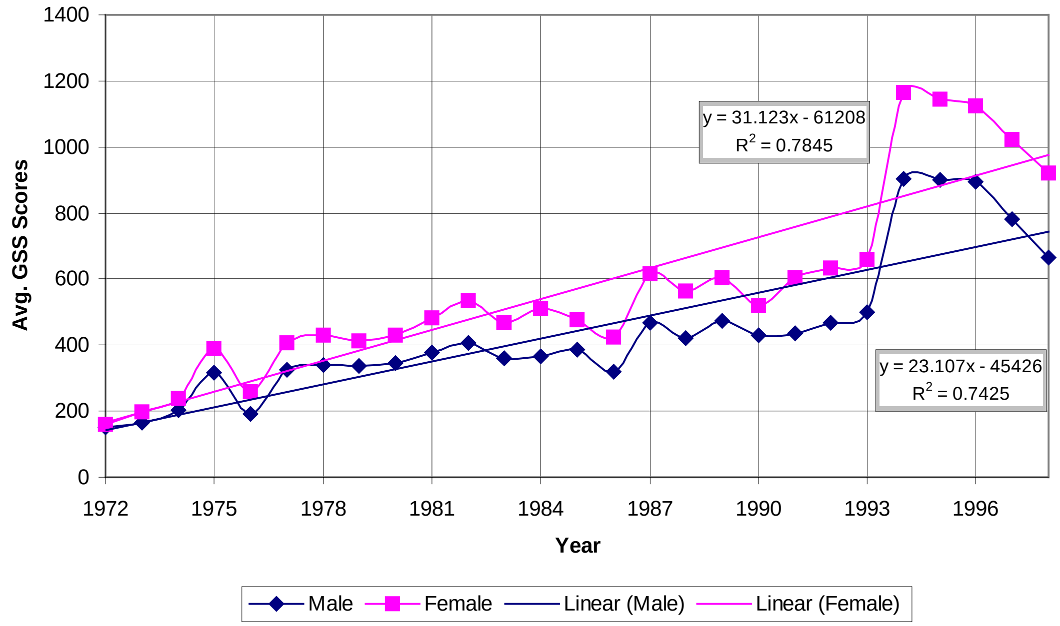

Figure 8-(e). Linear Trend Analysis of Avg. GSS Scores of Family Category

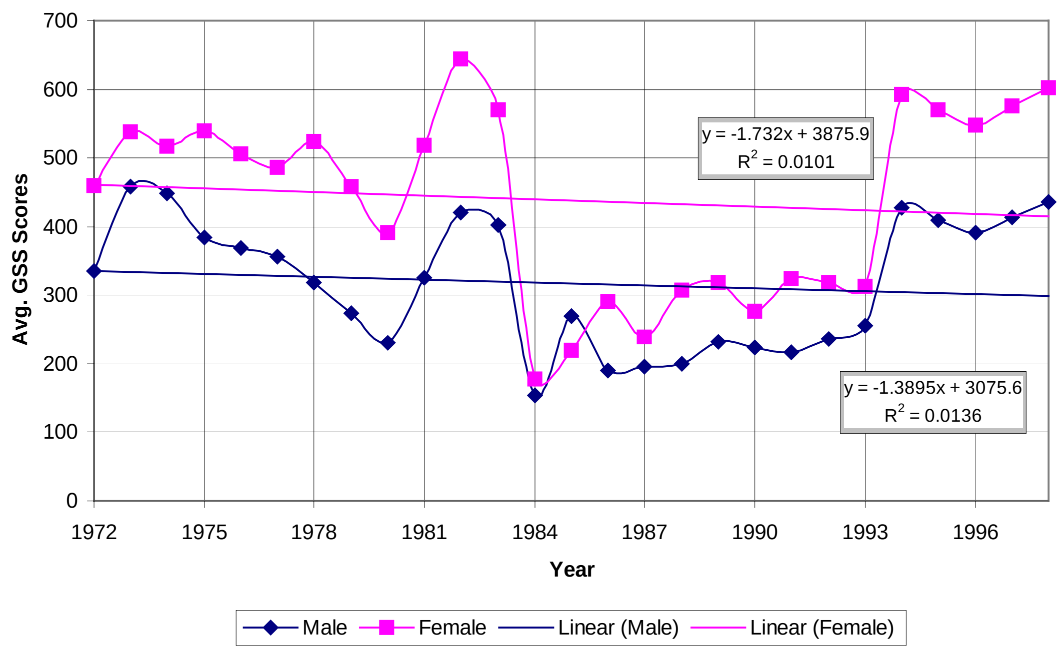

Figure 8-(f). Linear Trend Analysis of Avg. GSS Scores of Federal Government Responsibility Category

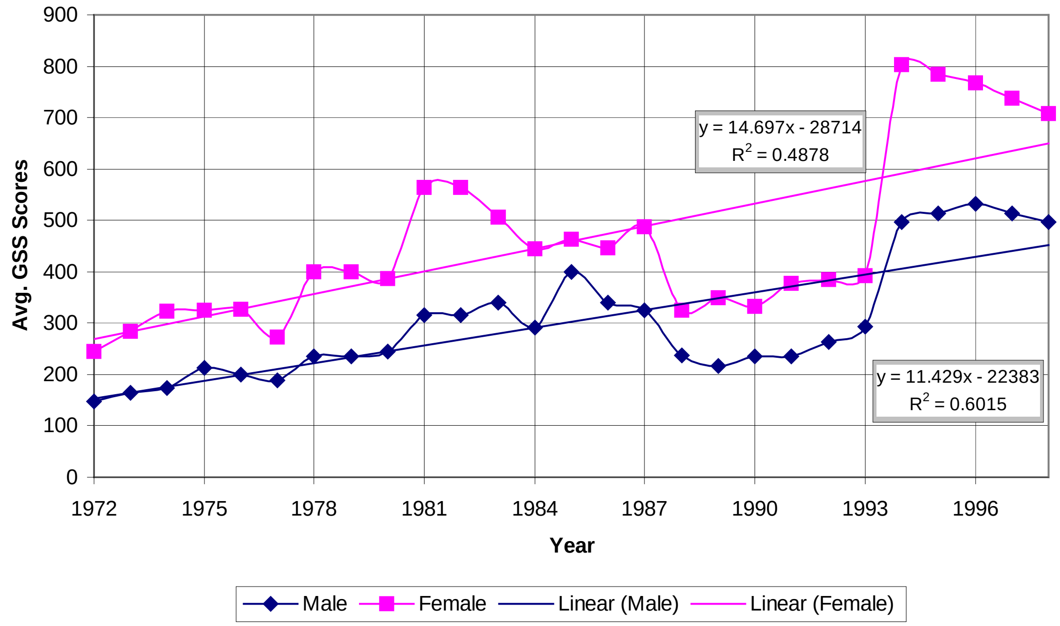

Figure 8-(g). Linear Trend Analysis of Avg. GSS Scores of Feminism Category

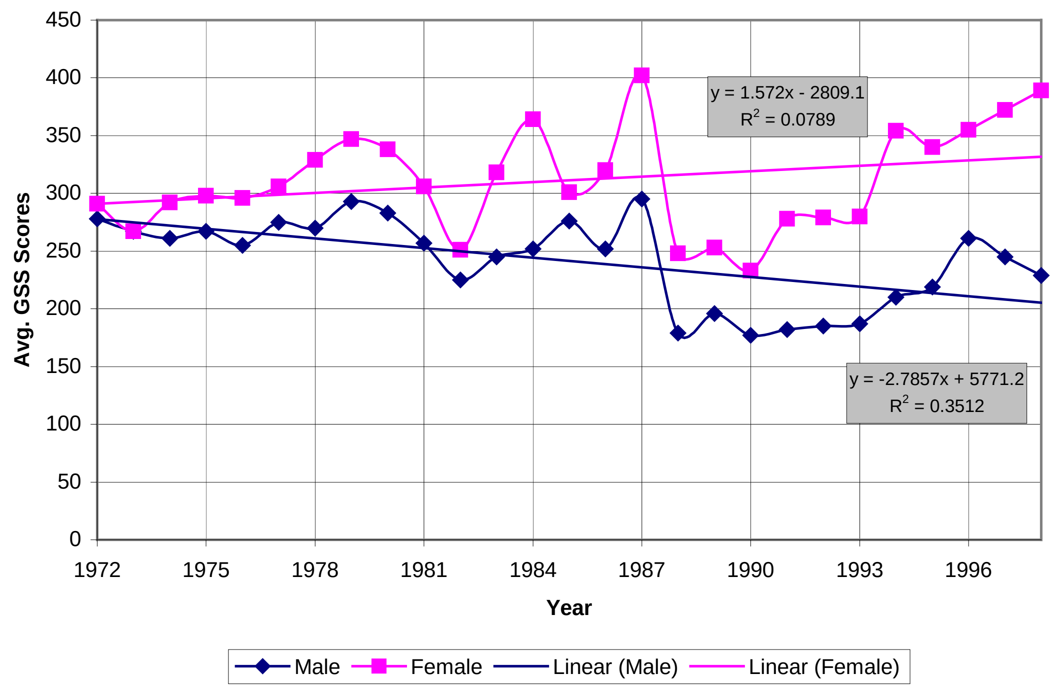

Figure 8-(h). Linear Trend Analysis of Avg. GSS Scores of Labor Category

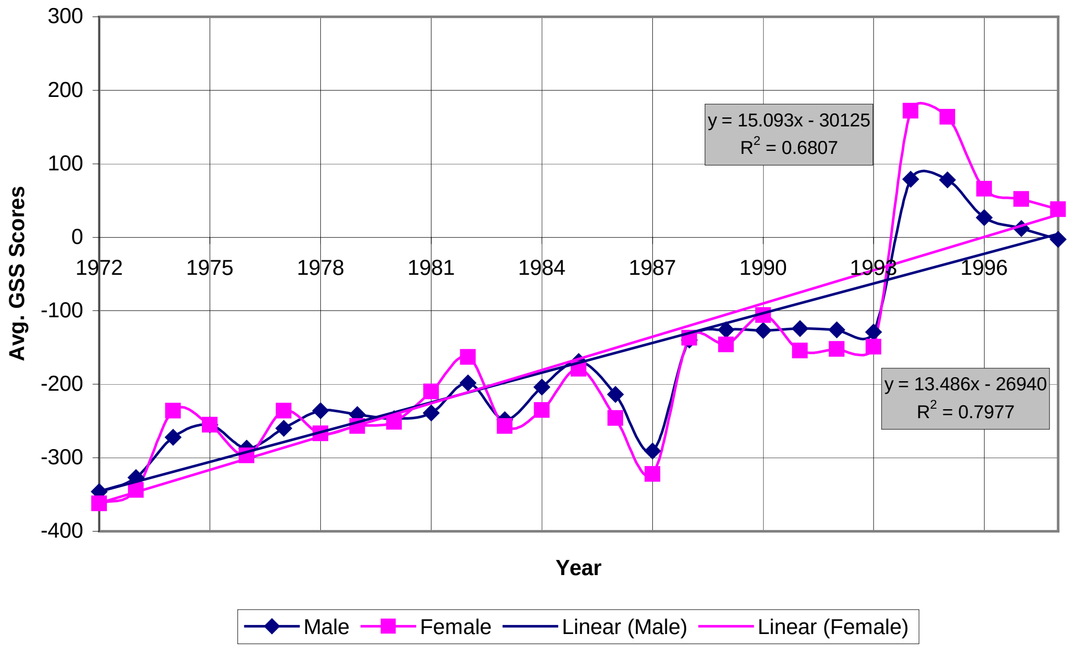

Figure 8-(i). Linear Trend Analysis of Avg. GSS Scores of Lifestyle & Socio-political Participation

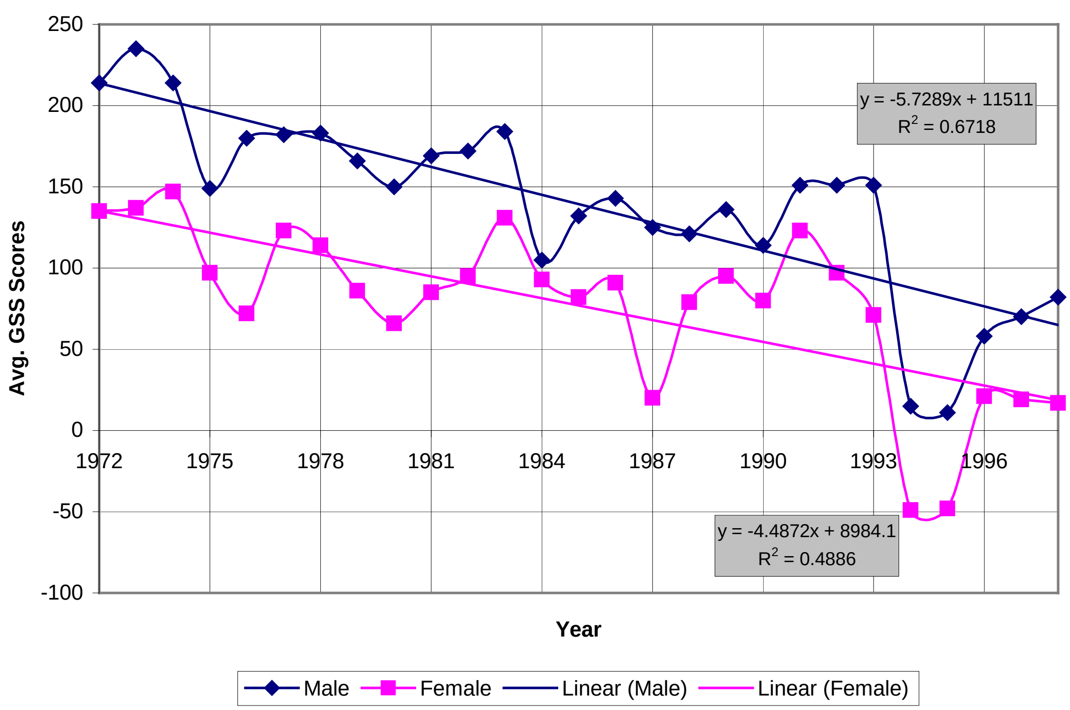

Figure 8-(j). Linear Trend Analysis of Avg. GSS Scores of Politics Category

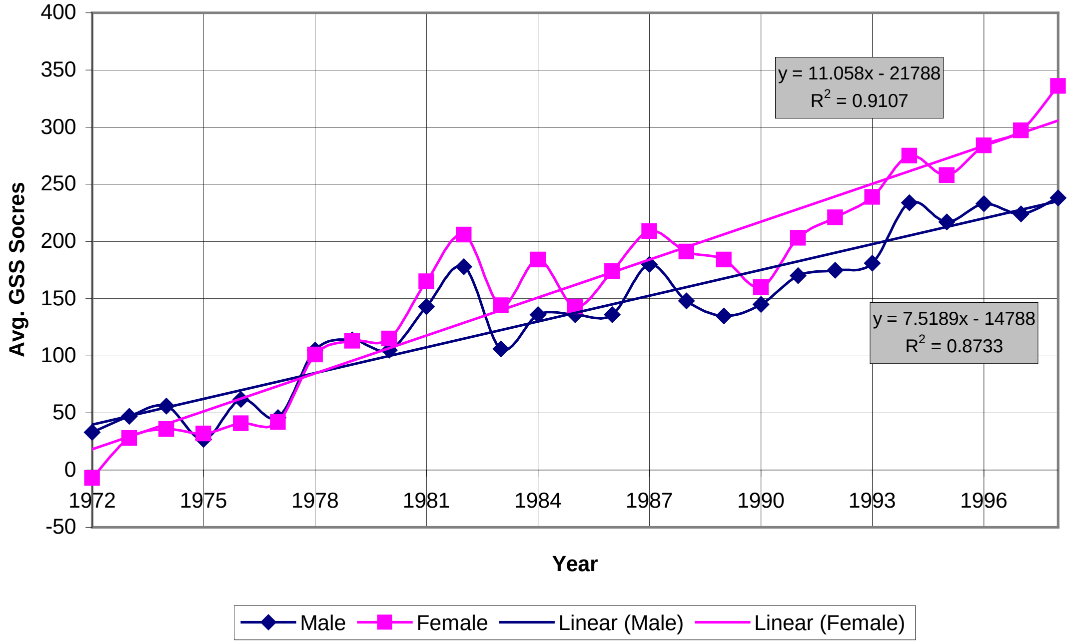

Figure 8-(k). Linear Trend Analysis of Avg. GSS Scores of Race & Ethnicity

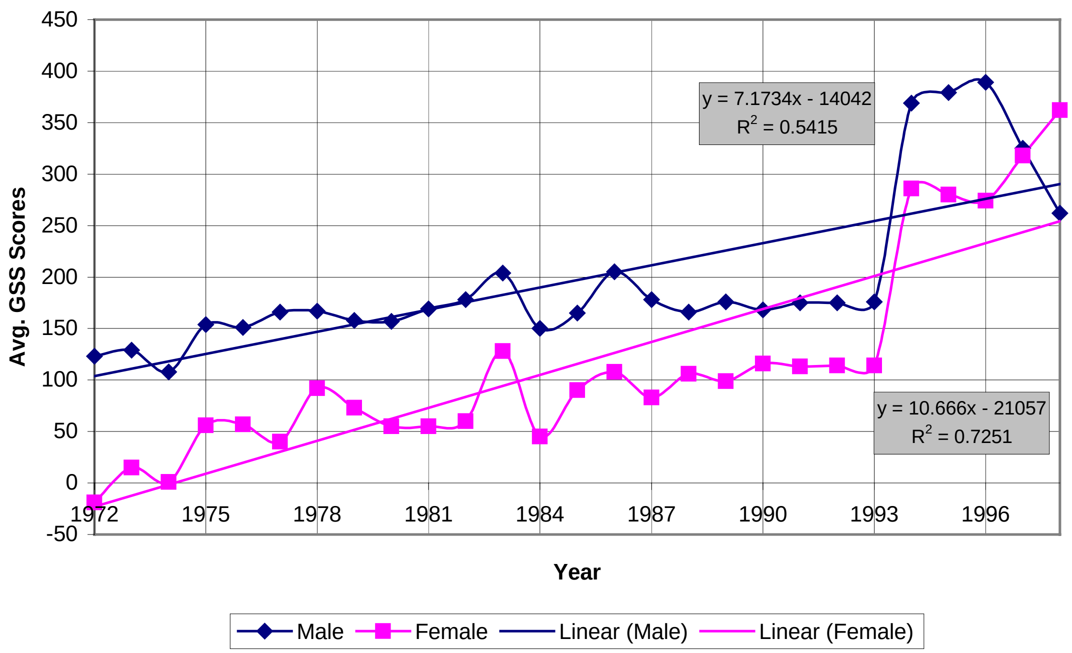

Figure 8-(l). Linear Trend Analysis of Avg. GSS Scores of Religion Category

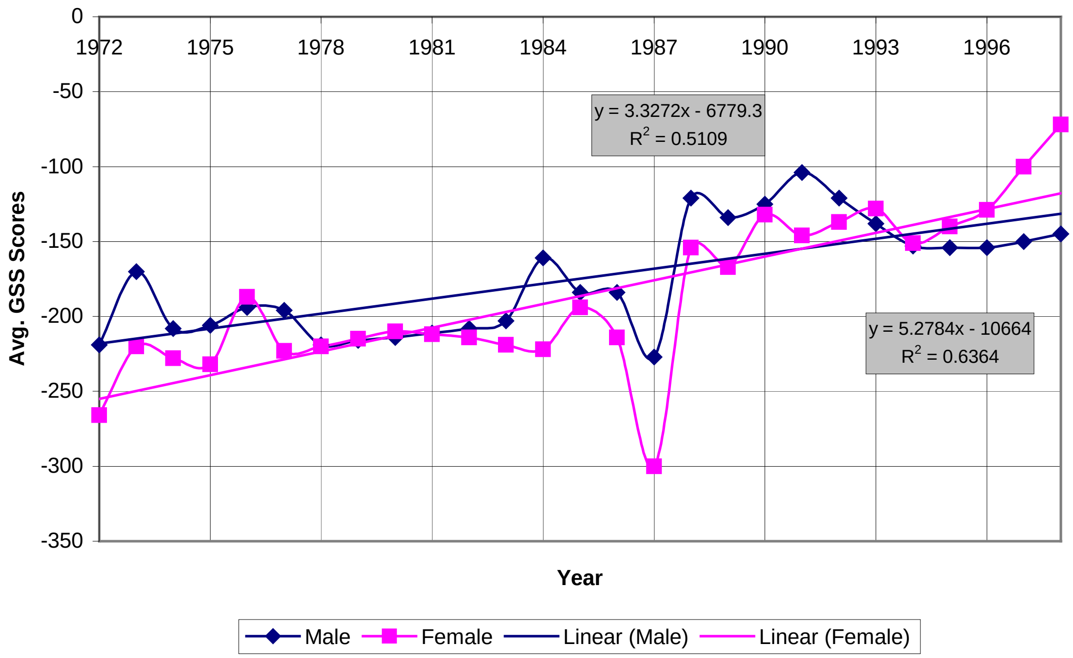

Figure 8-(m). Linear Trend Analysis of Avg. GSS Scores of Tolerance & Permissiveness Category

The linear trend was estimated by use of first-order regression models since the purpose of this analysis is not for examining the causes of ups and downs during the 27-year period.

The main relationship may be summarized as follows. First, a strong positive linear trend was found both for male and female population in the categories of ‘Race’, ‘Family’, ‘Civil liberties’, ‘Religion’, ‘Feminism’, ‘Lifestyles & socio-political participation’, and ‘Tolerance & permissiveness’. The corresponding correlation coefficients and the parameter estimates for first-order linear regression were listed in each figure. These results indicate Liberalism was growing over Conservatism in the respects of areas listed above among the contemporary Americans during the last three decades. Among the positive categories, the 'Lifestyle & Socio-political Participation' category started from strong conservative territory but finished in liberal territory. Also, the category of 'Tolerance & permissiveness' stayed in the negative (conservative) territory during the entire sample period but moved to a positive direction.

Second, a strong negative linear trend was found both for male and female population in the category of ‘Politics.’ Even though the average scores of ‘Politics’ were in the liberalism territory, there was a strong negative trend. The result provides an interesting contrast with previous research by Smith, Davis and among others that provoked increasing liberal trends. Perhaps this is due to the smaller number of items selected in this research compared to the number of items included in previous research. Also, in previous research, international items were excluded to limit their research to only domestic issues whereas in our research two items (USINTL and USUN) out of four were about international issues.

Third, either negative or positive trends were found but none was significant. They are the categories of ‘Labor’, ‘Social Welfare & Violence’, ‘Confidence’, ‘Federal Government Responsibility’ and ‘Abortion’. Among them, ‘Labor’, ‘Social Welfare & Violence’ and ‘Confidence’ showed different trends between male and female populations.

Overall, Liberalism has exceeded Conservatism for both male and female populations during 1972-1998. (The ratios of Liberalism and Conservatism are 77% vs. 23%, respectively.) These results provide a great expectation of growing casualness in apparel if social trend can be reflected in apparel trend.

7.3 Analysis of the Relationship between Apparel Purchase Pattern and the General Social Opinion Change

In the previous two sections, it was clearly shown that casual trends not only in apparel but also in many other aspects of lifestyle have grown continuously during the last three decades. One question we may ask is: “Do social trends affect casual trends?” In other words, Liberal/Casual trend in lifestyle may induce increasing casual demand in apparel. This idea has been formulated into the set of hypotheses introduced in Chapter 6 along with the data structure of GSS. In this section, those hypotheses will be tested.

To analyze the spontaneous statistical relationship between casual trend and each category of general social behaviors, linear regression and time series analyses were used. Dependent variables were the log-ratio of each men's and women's casual/total apparel consumption during 1972 to 1998. A linear transformation was needed to handle the non-linearity problem. Given the nature of share model of the dependent variable, the regression function cannot be linear. By using a transformational approach, the expected value of the dependent variable, after some transformation, is expressed as a linear function of the explanatory variables. [Powers and Xie, 1999]

Explanatory variables used were the male and female average scores for the 13 categories from the selected GSS items during the same period as covered by apparel consumption data. To evaluate the causal relationship between apparel demand and general social opinion, one-period lagged explanatory variables were also used. This means the model is constructed in such a way that previous year’s general social opinion affects the next year’s apparel demand. In this manner the model is used to test whether there is a causal relationship between those two sets of variables.

The basic form of the model applied can be expressed as

$$\underset{(27x1)}{Y} = \underset{(27x13)}{X}\underset{(13x1)}{\beta} + \underset{(27x1)}{\varepsilon} \tag{7.1}$$

where, Y = 27x1 vector of the log-ratio of casual wear from 1972 to 1998

X = 27x13(14) matrix of thirteen categories or (plus time if time is included.)

β = 13x1 vector of parameters to be estimated, and

ε = 27x1 vector of random error.

A hypothesis was tested according to the sign of the parameter estimated. That is if the sign of the parameter estimate is positive and its *p*-value is within 10% error level, then it was assumed there exists a strong positive relationship with casual trend. Therefore, the proposed hypothesis will be accepted. Likewise, if the sign is negative and its *p*-value is within 10% error level, the hypothesis will be rejected with strong evidence. However, there are gray areas where estimated parameters do not provide strong evidence either to support or reject the hypothesis, that is to say, their *p*-values are greater than 10%. If the estimated parameter is positive, but not significant, it was presumed that the hypothesis is 'partially supported.' If one is negative, and not significant, it was presumed that the hypothesis is 'not supported.' The results of the hypotheses testing are summarized in Tables 19 and 20.

Table 19. The Results of Hypotheses Test (Apparel in Unit Volume)

Men	**No Lag**				**One-period Lagged**			
H	**Decision**	**R^2**	**Para.Est.**	***P*-value**	**Decision**	**R^2**	**Para.Est.**	***P*-value**
H_1	Not supported	.009	-.099	-	Not supported	.034	-.172	-
H_2	Supported	.513	+.473	*	Supported	.445	+.421	*
H_3	Partially supported	.012	+.074	-	Not supported	.014	-.075	-
H_4	Not supported	.069	-.295	-	Not supported	.030	-.176	-
H_5	Supported	.645	+.221	*	Supported	.483	+.176	*
H_6	Not supported	.008	-.054	-	Not supported	.066	-.147	-
H_7	Supported	.407	+.319	*	Supported	.250	+.239	*
H_8	*Rejected*	.320	-.890	*	*Rejected*	.461	-.962	*
H_9	Supported	.615	+.382	*	Supported	.562	+.344	*
H_{10}	*Rejected*	.537	-.771	*	*Rejected*	.420	-.629	*
H_{11}	Supported	.723	+.779	*	Supported	.593	+.670	*
H_{12}	Supported	.397	+.476	*	Supported	.329	+.397	*
H_{13}	Supported	.356	+.944	*	Supported	.487	+1.01	*

Women	**No Lag**				**One-period Lagged**			
H	**Decision**	**R^2**	**Para.Est.**	***P*-value**	**Decision**	**R^2**	**Para.Est.**	***P*-value**
H_1	*Rejected*	.128	-.623	**	*Rejected*	.159	-.654	*
H_2	Supported	.380	-.685	*	Supported	.337	+.686	*
H_3	*Rejected*	.308	-1.02	*	*Rejected*	.361	-1.04	*
H_4	Supported	.276	+1.39	*	Supported	.233	+1.27	*
H_5	Supported	.486	+.339	*	Supported	.407	+.301	*
H_6	*Rejected*	.120	-.345	**	*Rejected*	.190	-.419	*
H_7	Supported	.198	+.362	*	Supported	.151	+.311	*
H_8	Partially supported	.003	+.054	-	Not supported	.006	-.233	-
H_9	Supported	.396	+.589	*	Supported	.335	+.530	*
H_{10}	*Rejected*	.226	-1.27	*	*Rejected*	.177	-1.08	*
H_{11}	Supported	.712	+1.25	*	Supported	.720	+1.27	*
H_{12}	Supported	.357	+.817	*	Supported	.322	+.839	*
H_{13}	Supported	.449	+1.73	*	Supported	.441	+1.79	*

Note: *Significant at 5% error level.
** Significant at 10% error level.
Parameter estimates were magnified by 1000.

Table 20. The Results of Hypotheses Test (Apparel in Dollar Values)

Men	**No Lag**				**One-period Lagged**			
H	**Decision**	**R^2**	**Para.Est.**	***P*-value**	**Decision**	**R^2**	**Para.Est.**	***P*-value**
H_1	Not supported	.001	-.078	-	Not supported	.006	-.171	-
H_2	Supported	.619	+1.21	*	Supported	.578	+1.11	*
H_3	Partially Supported	.029	+.267	-	Partially Supported	.000	+.013	-
H_4	*Rejected*	.123	-.912	*	*Rejected*	.112	-.796	**
H_5	Supported	.742	+.522	*	Supported	.666	+.480	*
H_6	Not supported	.001	-.043	-	Not supported	.017	-.174	-
H_7	Supported	.541	+.858	*	Supported	.390	+.693	*
H_8	*Rejected*	.320	-2.04	*	*Rejected*	.417	-2.12	*
H_9	Supported	.751	+.986	*	Supported	.737	+.913	*
H_{10}	*Rejected*	.620	-1.94	*	*Rejected*	.545	-1.67	*
H_{11}	Supported	.785	+1.98	*	Supported	.723	+.1.72	*
H_{12}	Supported	.531	+1.28	*	Supported	.470	+1.10	*
H_{13}	Supported	.369	+2.24	*	Supported	.454	+2.26	*

Women	**No Lag**				**One-period Lagged**			
H	**Decision**	**R^2**	**Para.Est.**	***P*-value**	**Decision**	**R^2**	**Para.Est.**	***P*-value**
H_1	Not supported	.091	-.503	-	*Rejected*	.155	-.640	*
H_2	Supported	.487	+.745	*	Supported	.425	+.763	*
H_3	*Rejected*	.375	-1.08	*	*Rejected*	.468	-1.17	*
H_4	Supported	.298	+1.39	*	Supported	.269	+1.36	*
H_5	Supported	.499	+.330	*	Supported	.452	+0.315	*
H_6	Not supported	.054	-.222	-	*Rejected*	.133	-.348	**
H_7	Supported	.203	+.352	*	Supported	.154	+.311	*
H_8	Not supported	.000	-.055	-	Not supported	.006	-.226	-
H_9	Supported	.506	+.639	*	Supported	.393	+.569	*
H_{10}	*Rejected*	.240	-1.25	*	*Rejected*	.186	-1.10	*
H_{11}	Supported	.649	+1.14	*	Supported	.668	+1.21	*
H_{12}	Supported	.457	+.887	*	Supported	.381	+.903	*
H_{13}	Supported	.649	+2.00	*	Supported	.550	+1.98	*

Note: *Significant at 5% error level.
** Significant at 10% error level.
Parameter estimates were magnified by 1000.

The results show the relationship between casual consumption trends and each category of general social behaviors. In any case whether the dependent variables were in unit volume or in sales values, seven and eight out of thirteen hypotheses were supported with strong evidence in male and female population, respectively. The supported hypotheses in both populations were ‘Civil Liberties’, ‘Family’, ‘Feminism’, ‘Lifestyles & Socio-political Participation’, ‘Race & Ethnicity’, ‘Religion’, and ‘Tolerance & Permissiveness.’ These results are consistent with the ones found in previous research and showed a good correlation with time series analysis described in the previous section.

For the rejected hypotheses, there were differences in men’s vs. women’s and no-lag vs. lagged. Except for the case of women’s dollar values, same results were found between one-period lagged and without lagged variables. The rejected hypotheses common in both unit volume and dollar values were ‘Labor’ and ‘Politics’ for male, ‘Confidence’ and ‘Politics’ for female. ‘Politics’ was the category rejected in all cases. The rejected results were expected even though they are contradictory to the previous research. From the GSS trend analyses described in the previous section, strong conservative time trends were found in ‘Politics’ for both male and female populations and ‘Labor’ and ‘Confidence’ in male and female population, respectively. These time trends were reflected negatively in the relationship with casual apparel consumption.

Overall, with thirty years of historic data, strong evidence was found to support the idea that the general social opinion of contemporary Americans affects apparel demands.

8 Creation of Theory-Based *Casual Index* Using General Social Survey

In this part, model estimation and the results from the first component of theory-based *Casual Index* will be discussed. This is a qualitative approach of creating theory-based *Casual Index* using General Social Survey. Based on the preliminary analyses described in the previous three sections, the first component of theory-based *Casual Index* based on General Social Survey will be created.

8.1 Models and Estimation Method

Regression model with stepwise model-selection technique was applied to select only significant categories among the 13 previously selected. The stepwise method is a modification of the forward-selection technique but differs in that variables already in the model do not necessarily stay there. As in the forward-selection method, variables are added one by one to the model, and the F statistic for a variable to be added must be significant. After a variable is added, however, the stepwise method looks at all the variables already included in the model and deletes any variable that does not produce an F statistic significant. Only after this check is made and the necessary deletions accomplished can another variable be added to the model. The stepwise process ends when none of the variables outside the model has an F statistic significant and every variable in the model is significant, or when the variable to be added to the model is the one just deleted from it. [SAS Online Document]

Dependent variables were the same as used in the hypotheses testing described in the previous section, the log-ratio of each men's and women's casual share during 1972 to 1998. Explanatory variables used were one-period lagged average scores of the thirteen categories for male and female population from the selected GSS items.

The basic form of regression model applied can be expressed as

$$\underset{(27x1)}{Y} = \underset{(27x13)}{X}\underset{(13x1)}{\beta} + \underset{(27x1)}{\varepsilon} \tag{8.1}$$

where, Y = 27x1 vector of the casual ratio for the year from 1972 to 1998

X = 27x13 matrix of GSS average scores of thirteen categories

β = 13x1 vector of parameters to be estimated, and

ε = 27x1 vector of random error.

Using 'SAS PROC REG' procedure with 'SELECTION = STEPWISE' option, four different *Casual Index* (Men's vs. Women’s and Unit Volume vs. Dollar Values) were created.

8.2 Empirical Results of Theory-Based *Casual Index* Using GSS

The stepwise regression results are summarized in Tables 21-24. Detailed results are listed in Appendix 17.4. As a result, four different regression equations were estimated; they are Men's/Women’s in Unit Volume/ Dollar Values.

Table 21. Stepwise Regression Results for Men’s Casual (Unit Volume)

Overall Model R^2=0.8131, MSE = 0.0006

Estimated Casual Index : $\hat{y}$ *= -0.072 + 0.0005*Civil – 0.0003*Confidence - 0.0004*Labor*

Var. Entered	Var. Removed	Number Var. In	Partial R^2	Model R^2	*P*-value
Race		1	0.5928	0.5928	<.0001
Labor		2	0.1367	0.7295	0.0024
Civil		3	0.0307	0.7603	0.1074
	Race	2	0.0121	0.7481	0.3029
Confidence		3	0.0650	0.8131	0.0112

Variable	Para. Est.	*P*-value
Intercept	-0.07203	0.0680
Civil	0.00053416	<.0001
Confidence	-0.00028513	0.0112
Labor	-0.00041100	0.0450

Table 22. Stepwise Regression Results for Women's Casual (Unit Volume)

Overall Model R^2=0.9391, MSE = 0.00123

Estimated Casual Index: $\hat{y}$ *= -0.3135- 0.0004*Federal – 0.0004*Federal – 0.0011*Labor – 0.0011*Race + 0.0003*Religion*

Var. Entered	Var. Removed	Number Var. In	Partial R^2	Model R^2	*P*-value
Race		1	0.7197	0.7197	<.0001
Abortion		2	0.1849	0.9046	<.0001
Labor		3	0.0214	0.9260	0.0195
Federal		4	0.0122	0.9382	0.0544
Religion		5	0.0064	0.9446	0.1442
	Abortion	4	0.0055	0.9391	0.1751

Variable	Para. Est.	*P*-value
Intercept	-0.31349	<.0001
Federal	-0.00036632	<.0001
Labor	-0.00105	<.0001
Race	-0.00112	<.0001
Religion	0.00029070	0.1078

Table 23. Stepwise Regression Results for Men's Casual (Dollar Values)

Overall Model R^2=0.8952, MSE = 0.0019					
*Estimated Casual Index: $\hat{y}$ = -0.5858 + 0.0006*Civil – 0.0009*Confidence + 0.0006*Family + 0.0007*Politics*					
Var. Entered	Var. Removed	Number Var. In	Partial R^2	Model R^2	*P*-value
Lifestyle		1	0.7371	0.7371	<.0051
Confidence		2	0.0720	0.8091	0.0073
Family		3	0.0590	0.8681	0.0048
	Lifestyle	2	0.0003	0.8678	0.8184
Civil		3	0.0126	0.8804	0.1419
Politics		4	0.0148	0.8952	0.0993
Variable	Para. Est.	*P*-value			
Intercept	-0.58580	<.0001			
Civil	0.00057827	0.0880			
Confidence	-0.00087796	<.0001			
Family	0.00060070	0.0008			
Politics	0.00071259	0.0993			

Table 24. Stepwise Regression Results for Women's Casual (Dollar Values)

Overall Model R^2=0.9683, MSE = 0.0007					
*Estimated Casual Index: $\hat{y}$ = -0.5720-0.0007*Abortion – 0.0008*Confidence + 0.0015*Social + 0.0001*Federal + 0.0003*Politics + 0.0005*Race*					
Var. Entered	Var. Removed	Number Var. In	Partial R^2	Model R^2	*P*-value
Race		1	0.6679	0.6679	<.0001
Confidence		2	0.2385	0.9064	<.0001
Abortion		3	0.0143	0.9207	0.0590
Social		4	0.0329	0.9536	0.0009
Federal		5	0.0099	0.9634	0.0307
Politics		6	0.0048	0.9683	0.1047
Variable	Para. Est.	*P*-value			
Intercept	-0.57197	<.0001			
Abortion	-0.00070753	0.0004			
Confidence	-0.000777284	<.0001			
Social	0.00152	<.0001			
Federal	0.00012909	0.0569			
Politics	0.00034064	0.1047			
Race	0.00053456	0.0013			

As listed in Tables 21-24, all estimated equations showed high correlation coefficients ranging between 0.8131 and 0.9683 and all the variables selected were highly significant within the 10% error level. These are highly promising results considering the fact that it is generally very difficult to have both the high correlation coefficient and the highly significant parameter estimate with most social science data. The estimated equations are the theory-based *Casual Index* using GSS for men's and women’s in unit volume and dollar values, respectively.

From the four estimated *Casual Index* equations, estimated casual shares from 1972 to 1998 were obtained and compared with actual casual shares used as dependent variables in the model originally from MQ23A. The results were plotted in Figures 9 to 12 and showed that the estimated casual shares from the Casual Indices based on the General Social Survey fit extremely well to the actual casual share in all four cases. As shown in figures 9 to 12, men’s *Casual Index* predicts both in unit volume and dollar values, casual shares are increasing until 1992 (89.2%) and 1997 (81.4%), respectively, and decreasing steadily. In women’s wear, the predicted casual shares marked the highest peaks in 1994 (65.7%) and 1992 (55.7%) in unit volume and dollar values and showed decreasing trends afterwards. Particularly, in women’s dollar values, the predicted peak point exactly corresponds to the actual peak of apparel consumption. Other predicted peaks were almost the same but showed a one or two-year difference.

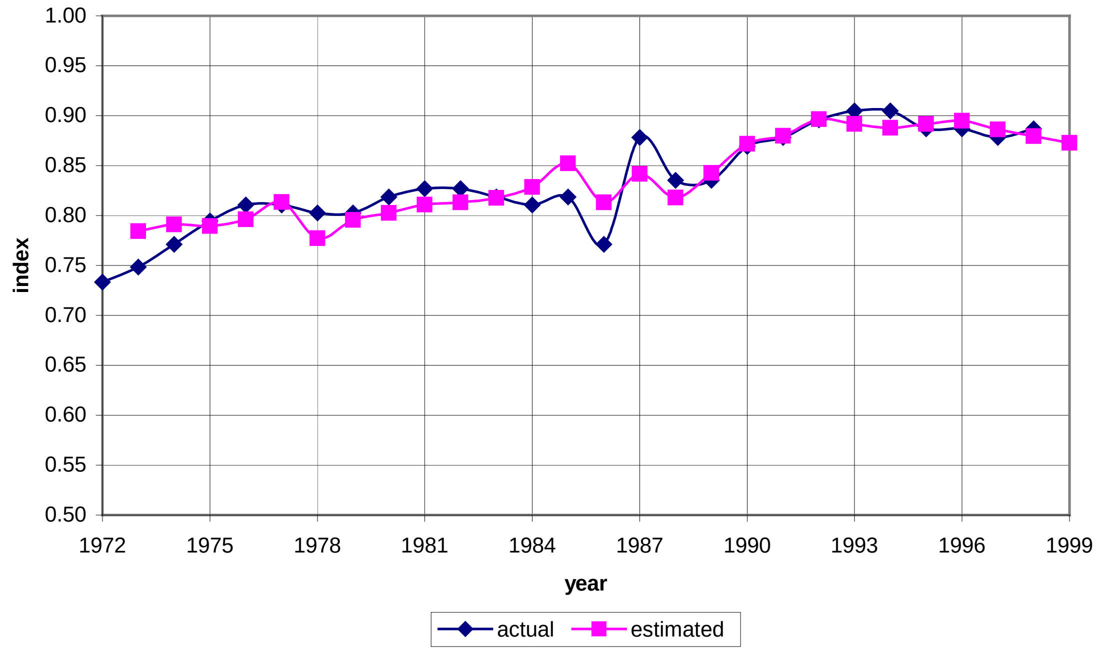

Figure 9. Estimated and Actual Men's Casual Share from GSS (Unit Volume)

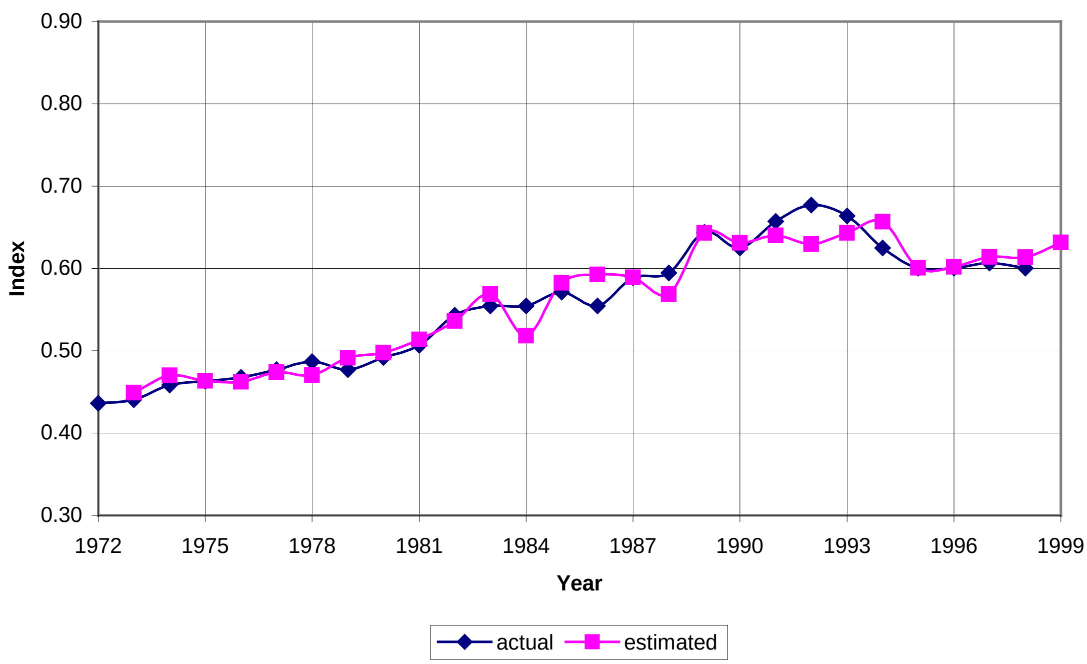

Figure 10. Estimated and Actual Women's Casual Share from GSS (Unit Volume)

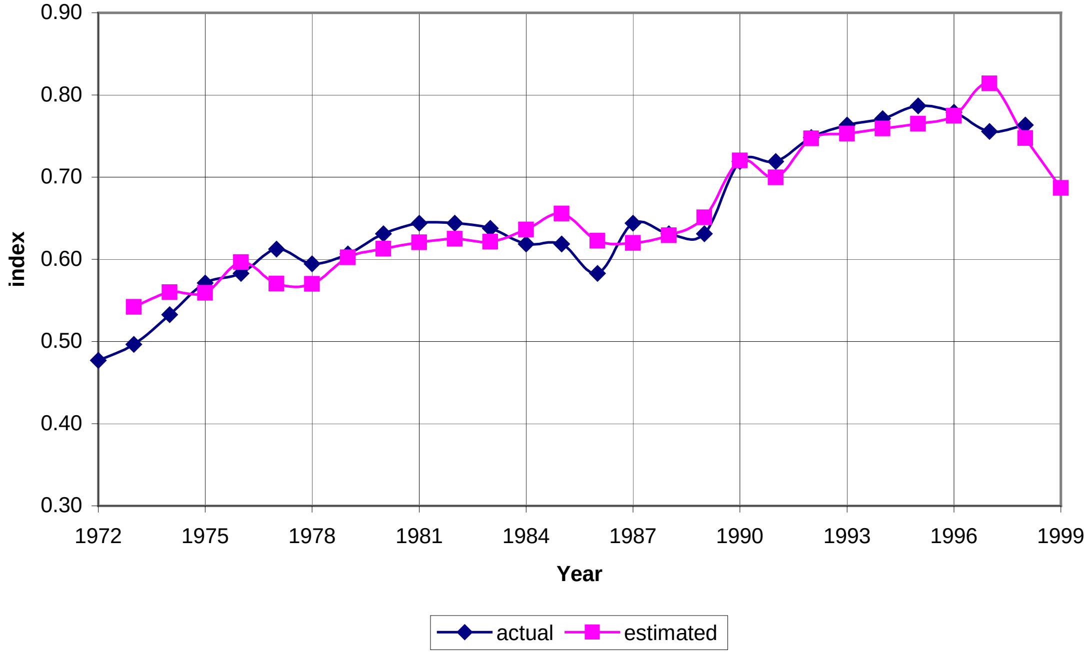

Figure 11. **Estimated and Actual Men's Casual Share from GSS (Dollar Values)**

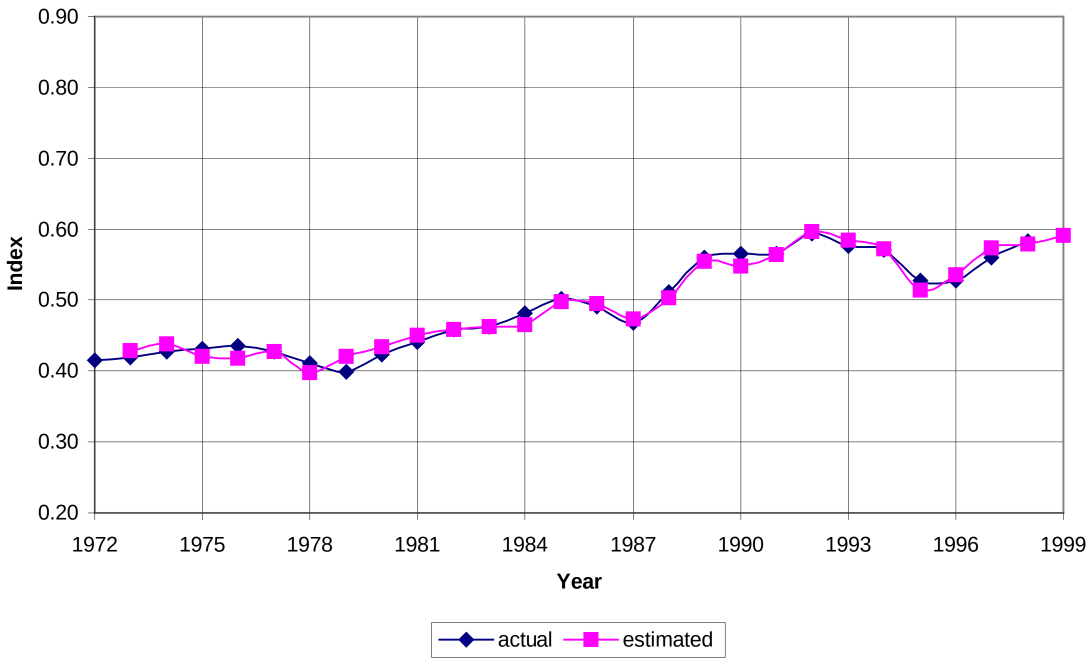

Figure 12. **Estimated and Actual Women's Casual Share from GSS (Dollar Values)**

9 Creation of Theory-Based *Casual Index* Using AID System with Habit Stock Terms

In this part, the second component of the theory-based *Casual Index*, based on the apparel demand analysis will be introduced and developed. Compared to the previous section, this component is a quantitative approach using apparel demand data.

9.1 Models and Estimation Method

At this stage, the non-linear, non-additive habits version of the AID System identified in equation (5.12) and (5.13) has been used to estimate a two-equation (one is for casual and the other is for formal) model of expenditure allocation of apparel consumption. As a dependent variable, casual consumption share in dollar value calculated from MQ23A was used. This was the same dependent variable used in the previous analyses but in this analysis, only dollar value share was used. Prices, deflated group expenditure and one-period lagged total group expenditure in the previous period were included as explanatory variables. The one-period lag in consumption is expected to help determine the demand in the present period if there is persistence in consumption from the previous period.

For an estimation method, PROC SYSLIN with ITSUR (Iterative Seemingly Unrelated) statistical estimation technique was selected. SYSLIN procedures were used to specify a model as a system of linear equations. PROC SYSLIN provides many methods of estimation, some of which are applicable only in special cases. OLS (Ordinary Least Squares), FIML (Full Information Maximum Likelihood), IT3SLS

(Iterative 3-Stage Least Squares), LIML (Limited Information Maximum Likelihood) and 2SLS (2-Stage Least Squares) estimate are some of the examples of estimation methods. In this study, ITSUR method was selected. In statistical terms, a set of equations that has contemporaneous cross-equation error correlation is called a seemingly unrelated (SUR) system. At first look, the equations seem unrelated, but the equations are related through the correlation in the errors. [UCLA, Academic Technology Services]

SAS was used to obtain ITSUR estimates of the two-equation AID System for men's and women's casual vs. formal. However, in practice, there would be no difference if the AID system were estimated by the OLS method. With homogeneity and symmetry restriction, there is only one equation to be estimated in the end. The results from OLS and SYSLIN methods were compared and reported in Table 25. System R-square, MSE (Mean Squared Error), parameter estimates and their *p*-values are exactly same in the two systems. The detailed comparisons between the two methods are listed in Appendix 17.5.

Table 25. The Comparison of Estimation Methods between SYSLIN and OLS

	SYSLIN		**OLS**	
Men's	**System R-Square**	**MSE**	**System R-Square**	**MSE**
	0.8987%	0.0008	0.8987%	0.0008
	Para. Est.	***P*-values**	**Para. Est.**	***P*-values**
α_1	1.5106	0.1714	1.5106	0.1714
κ_1	-4.6E-8	0.0209	-4.6E-8	0.0209
δ_1	1.968E-7	0.0002	1.968E-7	0.0002
γ_{11}	-0.0619	0.2828	-0.0619	0.2828
γ_{22}	0.0619	0.2828	0.0619	0.2828
β_1	-0.0748	0.3575	-0.0748	0.3575

Women's	System R-Square	MSE	System R-Square	MSE
	0.9138	0.0004	0.9138	0.0004
	Para. Est.	***P*-values**	**Para. Est.**	***P*-values**
α_1	2.5200	0.0042	2.5200	0.0042
κ_1	-4.92E-8	0.0015	-4.92E-8	0.0015
δ_1	1.414E-7	0.0002	1.414E-7	0.0002
γ_{11}	0.0507	0.2713	0.0507	0.2713
γ_{22}	-0.0507	0.2713	-0.0507	0.2713
β_1	-0.1454	0.0198	-0.1454	0.0198

In the next section, the estimation results will be shown and the men's and women's casual and formal shares in each year will be estimated and discussed.

9.3 Empirical Results of Theory-Based *Casual Index* Using AID System Incorporating Habit Stock Terms

The results of parameter estimates from AID System with habit terms for men's and women's apparel are reported in Table 26. Parameter estimates along with their *p*-values are also listed in Table 26.

Table 26. Estimation Results from Habit Stock Model

	System R-Square	MSE		Para. Est.	*P*-values
Men's	0.8987	0.0008	α_1	1.5106	0.1714
			κ_1	-4.6E-8	0.0209
			δ_1	1.968E-7	0.0002
			γ_{11}	-0.0619	0.2828
			γ_{22}	0.0619	0.2828
			β_1	-0.0748	0.3575
Women's	0.9138	0.0004	α_1	2.5200	0.0042
			κ_1	-4.92E-8	0.0015
			δ_1	1.414E-7	0.0002
			γ_{11}	0.0507	0.2713
			γ_{22}	-0.0507	0.2713
			β_1	-0.1454	0.0198

The results presented in Table 26 show that the model fits the data reasonably well. The system R^2s for men's and women's were 0.8987 and 0.9138, respectively, and suggest that the model provides a good fit to the data. Among the parameter estimates, κ_1, δ_1 that are the apparel-specific habit parameters were significant in both men's and women's. It is noted that the inclusion of nonlinear, non-additive habit formation terms results in a substantial improvement in the system fit and performance of the estimated AID system for the men's and women's casual and formal categories.

Estimated casual shares from AID system with habit terms is plotted in Figure 13 along with the actual casual shares. As discussed above, the results show an excellent fit to the data. Overall, both in men's and women's, an increasing casual trend was found during the twenty-seven years of the sample period. However, habit stock model predicted casual trend would be at its height in 1997 in the case of men, whereas it would be in 1994 in women. The prediction of men's casual trend exactly corresponds to the one from GSS. There was two years of difference with women's data.

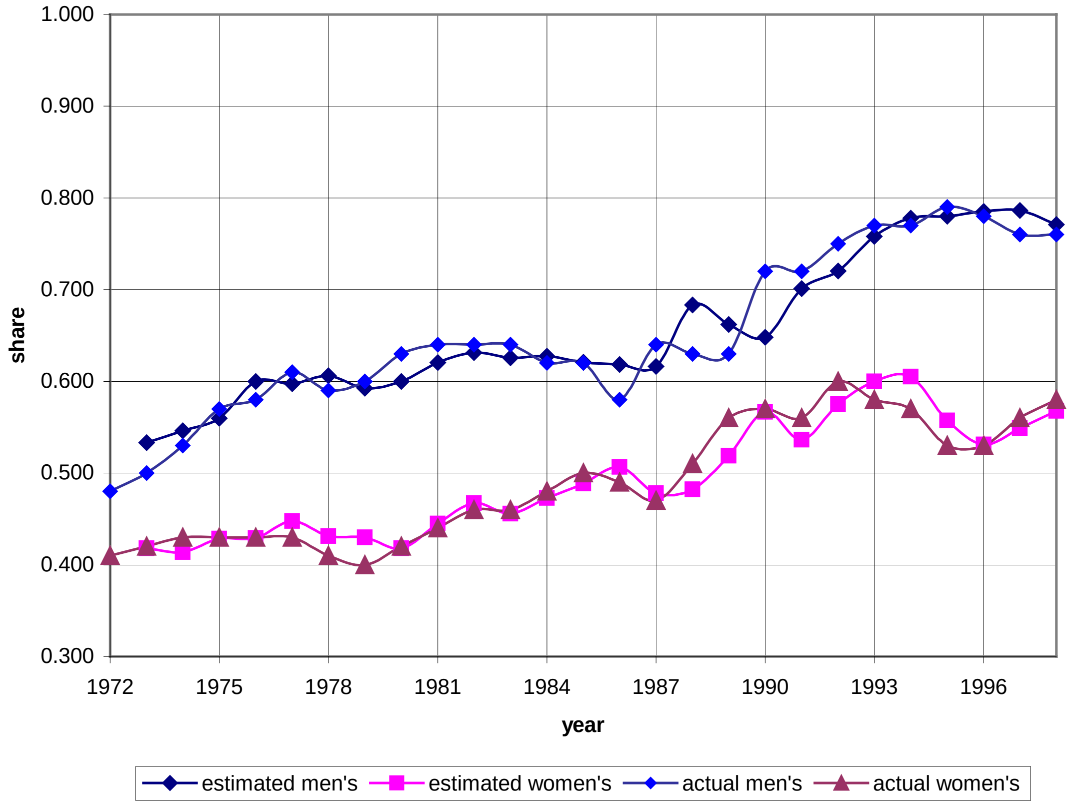

Figure 13. Estimated and Actual Casual Share from AID System for Men's and Women's Apparel

10 Creation of Theory-Based Composite *Casual Index*

The theory-based composite *Casual Index* is a numerical index from zero to one that is formulated from the ratio of casual vs. total apparel. It will be zero if the casual portion is zero and it will be maximum one if the casual share is one. This index will contain the general behavior index converted from qualitative information and the apparel demand index estimated from the AID System equation. The composite thus formed will reflect the preferred choice of the apparel by the consumer as well as the underlying social trends that can readily translated into consumer behaviors.

To obtain a composite index, multivariate regression analysis was applied. Same dependent variable, the log ratio of casual consumption to the total consumption, was used in this analysis. For explanatory variables, one-period lagged final selected GSS categories from the first component of *Casual Index*, estimated casual share from the second component of the *Casual Index*, time, and the interaction of GSS categories and the apparel demand were used. By considering all possible combination of the variables, the functional form is expressed as follow,

$$y = f(x_1, \ldots, x_k, D, T, x_1 D, \ldots, x_k D) \tag{10.1}$$

where y = 27x1 vector of actual log-ratio of casual/total sales

$x_1,\ldots,x_k$ = 27 x k matrix of k selected general social behavior categories.

D = 27x1 vector of estimated consumer casual wear demand; Estimated casual share from AID System.

T = 27x1 vector of time trend

$x_1 D,\ldots,x_k D$ = 27 x k matrix of interaction terms between social behavior and the apparel demand.

By regressing actual apparel sales data on the selected general opinion variables, apparel demand, time, and the interaction of the general opinion and apparel demand, the model is believed to explain all components of our hypotheses. The main results of the composite index will be discussed in the next section.

10.1 Empirical Results of Theory-Based Composite *Casual Index*

Tables 27 to 30 are the summary of theory-based composite index created from General Social Survey combined with AID demand system. Only the results from the final model are summarized. Details of the regression analysis are shown in Appendix 17.6. Overall model correlation coefficients, MSEs (Mean Squared Errors), estimated equations, parameter estimates as well as *p*-values of estimated parameters are listed in each table.

Table 27. The Results of Men's Composite *Casual Index* (Unit Volume)

Overall Model R^2=0.8558, MSE = 0.0005		
Estimated Casual Index: $\hat{y}$ = 0.007928+ 0.0002186*Civil – 0.0002043*Confidence - 0.0001783*labor + 0.25873*AIDS		
Variable	Parameter Estimates	*P*-value
Intercept	0.007928	0.8664
Civil	0.0002186	0.1610
Confidence	-0.0002043	0.0499
Labor	-0.0001783	0.3765
AIDS	0.25873	0.0211

Table 28. The Results of Women's Composite *Casual Index* (Unit Volume)

Overall Model R^2=0.9422, MSE = 0.0012		
Estimated Casual Index: $\hat{y}$ = -0.24219 - 0.0003088*Federal – 0.0008686*Labor + 0.0010071*Race + 0.0001714*Religion + 0.169751*AIDS		
Variable	Parameter Estimates	*P*-value
Intercept	-0.24219	0.0184
Federal	-0.0003088	0.0016
Labor	-0.0008686	0.0025
Race	0.0010071	<.0001
Religion	0.0001714	0.4185
AIDS	0.169751	0.3112

Table 29. The Results of Men's Composite *Casual Index* (Dollar Values)

Overall Model R^2=0.9197, MSE = 0.0016		
Estimated Casual Index: $\hat{y}$ = -0. 23326 + 0.0003369*Civil – 0.0004979*Confidence + 0.0002587*family + 0.0004023*politics+0. 58387*AIDS		
Variable	Para. Est.	*P*-value
Intercept	-0.23326	0.1846
Civil	0.0003369	0.2839
Confidence	-0.0004979	0.0179
Family	0.0002587	0.1988
Politics	0.0004023	0.3163
AIDS	0.58387	0.0227

Table 30. The Results of Women's Composite *Casual Index* (Dollar Values)

Overall Model R^2=0.9743, MSE = 0.0006		
Estimated Casual Index: $\hat{y}$ = –0.410395 – 0.000614*Abortion – 0.0005640*Confidence +0.0013594*Social + 0.0001050* Federal + 0.003071*Politics 0.0003019*Race + .28247*AIDS		
Variable	Para. Est.	*P*-value
Intercept	-0.410395	0.0002
Abortion	-0.000614	0.0011
Confidence	-0.0005640	0.0009
Social	0.0013594	0.0001
Federal	0.0001050	0.0971
Politics	0.0003071	0.1151
Race	0.0003019	0.0983
AIDS	0.28247	0.0543

All possible combinations of explanatory variables were applied into the regression model; 1) simple model that is GSS and apparel demand only, 2) simple model with time, 3) simple model with GSS and apparel demand interaction term, 4) simple model with interaction between GSS, apparel demand and time, and 5) simple model with interaction among all three variables. The overall model R^2 and the MSE of each model were compared and it was found that the performance of the simple model without time trends or interaction terms was better than the one with time trends or interaction terms. Therefore, the simple model was selected as a final model in all four casual composite indices, men's/women's in unit volume/dollar values.

All four estimated indices showed excellent fits in terms of R^2 and MSE (Mean Squared Error). R^2 was ranged between 0.8558 and 0.9743. In terms of estimated parameters and their *p*-values, it turned out that some *p*-values were greater than 10% error level, which means the estimated parameters are not highly significant. However, in this part of analysis, the model correlation coefficient and the Mean Squared Error of the model are more important factors than the significance of the estimated parameter when evaluating a model.

The most notable result that was found in all four composite indices was the performance of the composite indices was superior to both of the sub-indices based on GSS and the habit stock model. This is a very encouraging result and supports the fact that the composite index is not only superior in contents but in terms of performance to the two sub-indices. The performance comparisons are summarized in Table 31.

Table 31. The Performance Comparisons between Composite and Sub-Indices

		Men's		**Women's**	
		R-Square	**MSE**	**R-Square**	**MSE**
GSS	**Unit Volume**	0.8131	0.0006	0.9131	0.00123
	Dollar Values	0.8952	0.0019	0.9683	0.0007
Habit Stock	**Dollar Values**	0.8987	0.0008	0.9138	0.0004
Composite	**Unit Volume**	***0.8558****	***0.0005****	***0.9422****	***0.0012****
	Dollar Values	***0.9197****	0.0016	***0.9743****	0.0006

* Indicates better performance compared to the sub-indices.

As reported in Table 31, the R^2s of the men's casual composite index were improved by 4.57% compared to GSS in unit volume and 2.45% and 2.10% compared to GSS and habit stock in dollar values respectively. In the women's case, it was improved by 2.91% when compared to GSS in unit volume and 0.60% and 6.05% when compared to GSS and habit stock in dollar values. As far as MSE is concerned, it showed better performance than GSS in every case, but MSE increased in small amount when compared to the one in habit stock. Overall, the composite index created showed better performances than the GSS index as well as the habit stock index. Figures 14 to 17 are the graphical presentations of the four composite indices. In all cases, the estimated casual shares fit extremely well to actual casual shares.

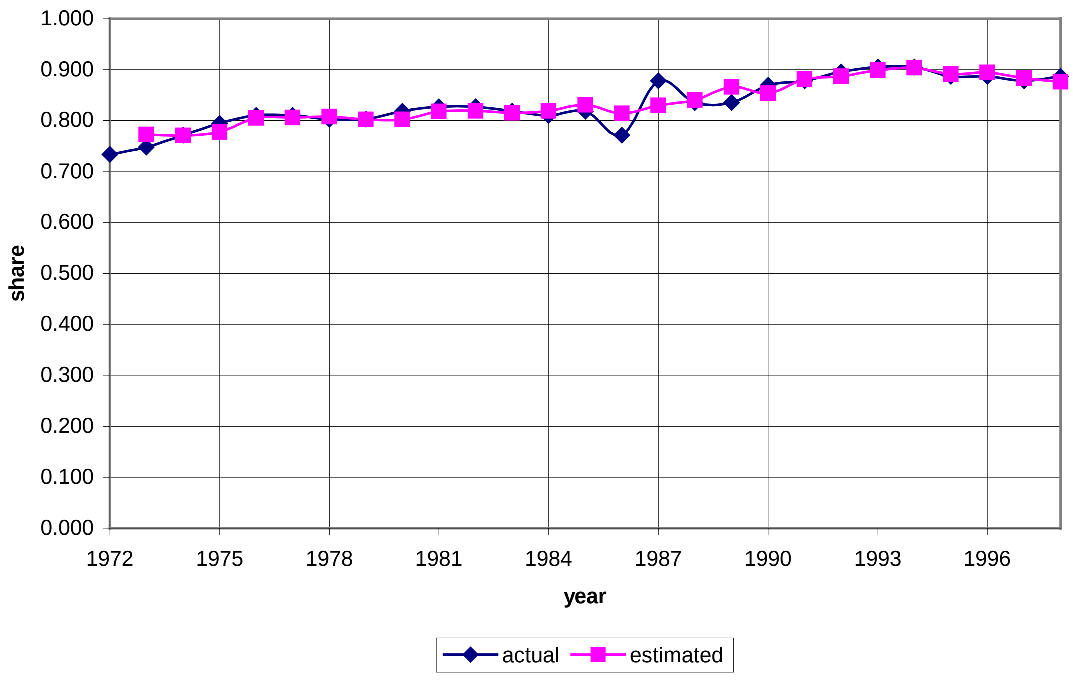

Figure 14. Estimated and Actual Theory-Based Composite *Casual Index* for Men's Apparel (Unit Volume)

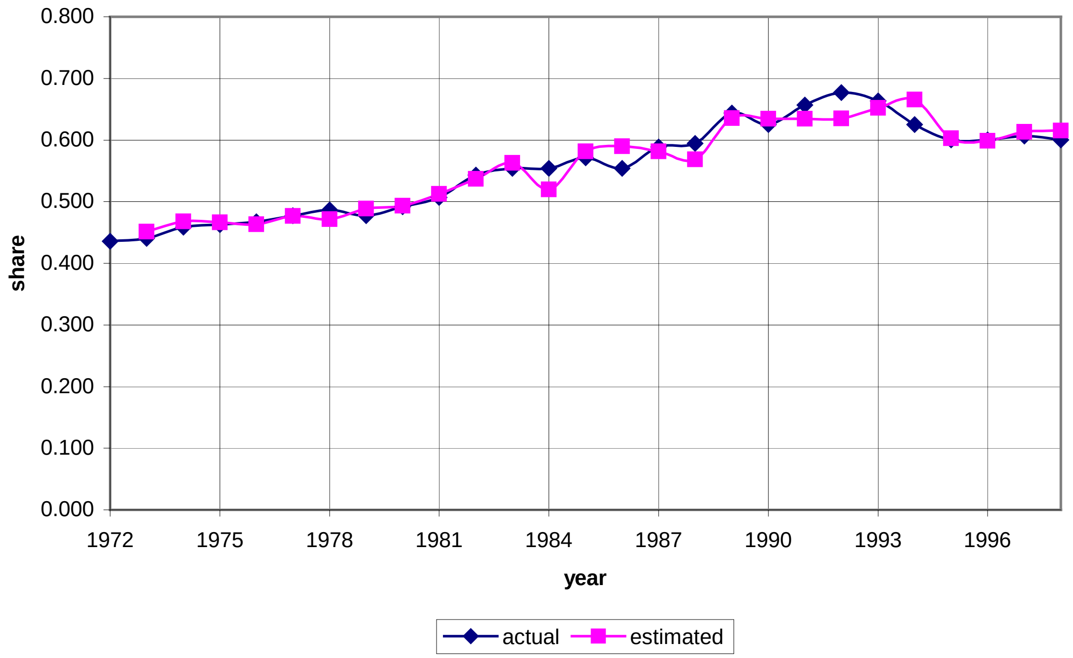

Figure 15. **Estimated and Actual Theory-Based Composite *Casual Index* for Women's Apparel (Unit Volume)**

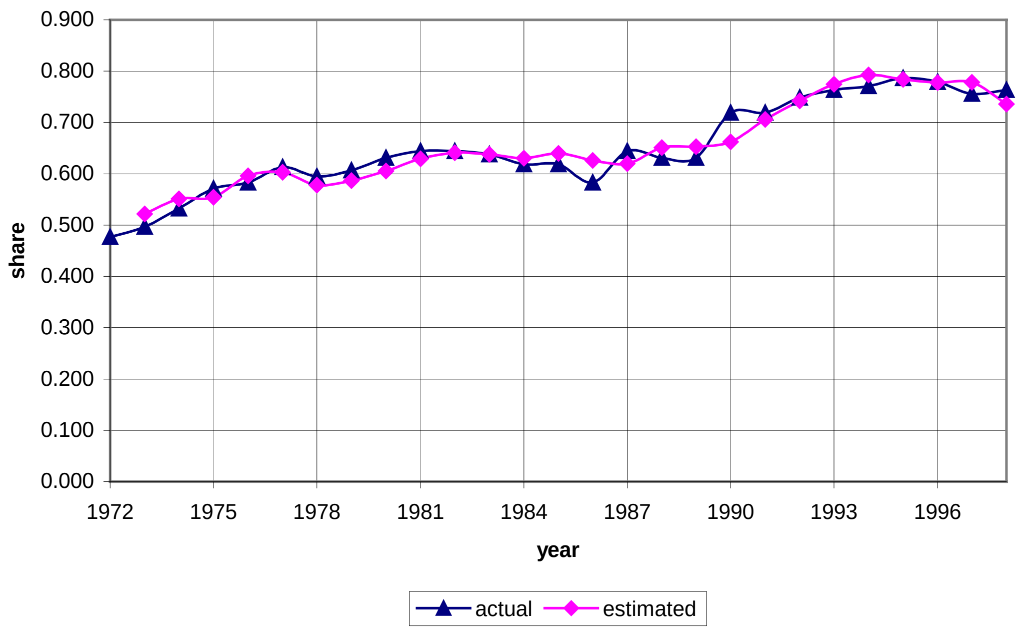

Figure 16. **Estimated and Actual Theory-Based Composite *Casual Index* for Men's Apparel (Dollar Values)**

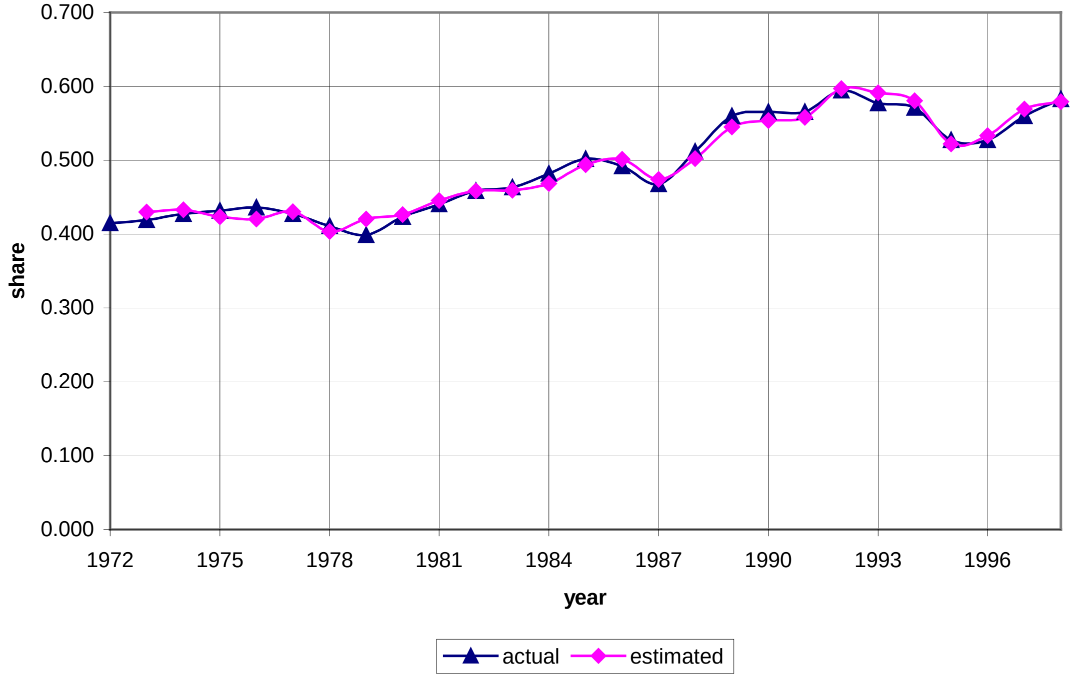

Figure 17. Estimated and Actual Theory-Based Composite *Casual Index* for Women's Apparel (Dollar Values)

Another interesting finding from the composite index is the peak time estimates of casual trends in men's and women's. Overall, casual trends showed increasing patterns in both men's and women's. In men's casual share, the composite index predicted the highest point at 1994 in both unit volume and dollar values. This prediction, though different from the previous predictions made from GSS and habit stock model, is the closest to the actual value and lies about mid-point of the values predicted by GSS and the habit stock model. In women's case, 1994 and 1992 were predicted as the peak time for casual trends in unit volume and dollar values, respectively. These results corresponded well with other predicted values from GSS and habit stock model. Table 32 is the summary of the predictions.

Table 32. Comparison Peak Times of Casual Trends Predicted by Three Indices

		Men's	Women's
Actual Data	Unit Volume	1994(90.5%)	1992(67.7%)
	Dollar Values	1995(78.7%)	1992(59.5%)
GSS	Unit Volume	1992(89.2%)	1994(65.7%)
	Dollar Values	1997(81.4%)	1992(55.7%)
Habit Stock	Dollar Values	1997(78.6%)	1994(60.5%)
Composite	Unit Volume	1994(90.4%)	1994(66.6%)
	Dollar Values	1994(79.3%)	1992(59.7%)

As analyzed above, the theory-based composite *Casual Index* thus constructed showed an excellent performance compared to the sub-indices derived from well-known theoretical framework. This provides an ample justification for applying the actual apparel demand data for direct estimation of *Casual Index* theoretically formulated. Next chapter will discuss how the theory-based *Casual Index* can be validated and estimated by applying the actual apparel consumption data

11 Derivation of Consumption-Based Composite *Casual Index*

The theory-based composite index thus constructed in the previous section reflects not only contemporary Americans' general social behaviors but apparel demands. The main objective of this research was to create a *Casual Index* for numerically expressing the degree of casualness in apparel theoretically as well as practically. Until now, the procedures of creating the theory-based composite index have been introduced: two sub-indices estimated from the qualitative side of lifestyles often latent and difficult to measure, and the quantitative side of consumer demands that can be measured only with well developed systems were combined together and formulated a composite index. The important research question was how to determine casual wear consumption in a certain year with two independent theories that can cover every aspect of lifestyles. So far, the theory-based composite *Casual Index* has been well-suited for addressing this question.

Given the successful development of theoretical part of the index, the next research question we may ask is; "Can this index be simplified with apparel consumption data?" or "Can this index be expressed in an empirical way?" This is a critical research question, as Bass and Wind [1995, P. G1] pointed out, "Science is a process in which data and theory interact leading to generalized explanations of disparate types of phenomena. Thus, empirical generalizations are the building blocks of science." The consumption-based *Casual Index* that will be introduced in the next section is expected to answer these questions.

The consumption-based *Casual Index* is also a composite index but practically estimated with apparel consumption data. The major purpose of this index is to design a simplified scheme for measuring and forecasting *Casual Index* without involving the complex theoretical models.

To derive consumption-based *Casual Index*, MQ23A Apparent Apparel Consumption data were used. First, the dichotomized items (casual and formal wear) were aggregated and percentage share to the total consumption of each item in each year was calculated. Among the aggregated total apparel items, according to the order of calculated shares, the highest six to seven items were selected. The selected items with calculated shares and their distributions are listed in Tables 33 to 36.

As listed in Tables 33 to 36, in men and women's apparel, six items were selected for unit volume and seven for dollar values. Among all of the men's apparel items, knit shirts and Jeans were the two largest shared items on average. In unit volume, those two items accounted for almost 50% of total consumption, whereas in dollar values, these two items together with dress slacks, accounted for almost 50% of total share in men's apparel. In the case of women's apparel, the distributions among items were more scattered than those of the men's apparel. In unit volume, the most dominant item was woven shirts that accounted for one quarter of total consummations, whereas in dollar values, formal dress was the largest shared item. In any case, woven shirts, formal dress and slacks accounted for almost 50% of total apparel consumption.

Table 33. The Selected Men's Apparel Items and The Descriptive Statistics According to the Order of Consumption Share (Unit Volume)

Year	Dress Shirts	Dress Slacks	Woven Shirts	Knit Shirts	Casual Slacks	Jeans
1972	0.12	0.12	0.11	0.18	0.11	0.12
1973	0.10	0.12	0.11	0.20	0.12	0.13
1974	0.09	0.11	0.11	0.22	0.11	0.13
1975	0.08	0.10	0.12	0.24	0.11	0.13
1976	0.08	0.09	0.11	0.26	0.11	0.14
1977	0.08	0.08	0.09	0.31	0.08	0.15
1978	0.08	0.09	0.08	0.34	0.06	0.11
1979	0.08	0.09	0.08	0.31	0.05	0.14
1980	0.08	0.08	0.06	0.34	0.05	0.14
1981	0.07	0.08	0.05	0.38	0.04	0.12
1982	0.07	0.08	0.05	0.37	0.04	0.13
1983	0.08	0.08	0.03	0.38	0.04	0.12
1984	0.08	0.08	0.03	0.38	0.03	0.12
1985	0.08	0.08	0.04	0.37	0.03	0.13
1986	0.13	0.08	0.04	0.29	0.03	0.13
1987	0.04	0.06	0.02	0.49	0.02	0.11
1988	0.07	0.07	0.03	0.37	0.02	0.11
1989	0.08	0.07	0.02	0.39	0.03	0.12
1990	0.04	0.06	0.01	0.39	0.03	0.12
1991	0.05	0.06	0.02	0.37	0.03	0.14
1992	0.04	0.05	0.02	0.42	0.02	0.14
1993	0.04	0.05	0.02	0.43	0.02	0.14
1994	0.04	0.04	0.01	0.45	0.02	0.14
1995	0.04	0.04	0.01	0.45	0.03	0.12
1996	0.03	0.05	0.01	0.48	0.01	0.12
1997	0.03	0.06	0.01	0.47	0.01	0.11
1998	0.03	0.05	0.01	0.50	0.02	0.10

Variable	N	Mean	Std Dev	Minimum	Maximum
DSH	27	0.0677778	0.0269377	0.0300000	0.1300000
DSl	27	0.0748148	0.0220786	0.0400000	0.1200000
WSh	27	0.0481481	0.0383343	0.0100000	0.1200000
KSh	27	0.3622222	0.0885061	0.1800000	0.5000000
CSl	27	0.0470370	0.0349521	0.0100000	0.1200000
Jeans	27	0.1262963	0.0124493	0.1000000	0.1500000

Table 34. The Selected Women's Apparel Items and The Descriptive Statistics According to the Order of Consumption Share (Unit Volume)

year	Formal Dress	Woven Shirts	Sweaters	Knit Shirts	Jeans	Slacks
1972	0.19	0.29	0.08	0.08	0.05	0.11
1973	0.18	0.29	0.09	0.09	0.05	0.12
1974	0.15	0.30	0.10	0.10	0.05	0.12
1975	0.13	0.31	0.11	0.11	0.04	0.12
1976	0.12	0.32	0.11	0.11	0.05	0.12
1977	0.12	0.32	0.11	0.13	0.04	0.12
1978	0.11	0.32	0.11	0.13	0.04	0.12
1979	0.11	0.34	0.09	0.08	0.06	0.14
1980	0.11	0.32	0.10	0.08	0.06	0.14
1981	0.09	0.31	0.11	0.06	0.08	0.14
1982	0.10	0.28	0.16	0.07	0.07	0.13
1983	0.10	0.26	0.11	0.09	0.08	0.15
1984	0.10	0.26	0.12	0.08	0.08	0.14
1985	0.09	0.26	0.17	0.06	0.08	0.14
1986	0.08	0.28	0.15	0.04	0.09	0.13
1987	0.09	0.24	0.14	0.05	0.09	0.14
1988	0.10	0.21	0.12	0.06	0.08	0.15
1989	0.09	0.20	0.11	0.04	0.20	0.13
1990	0.08	0.21	0.08	0.06	0.22	0.12
1991	0.08	0.19	0.07	0.06	0.23	0.12
1992	0.07	0.19	0.07	0.08	0.25	0.11
1993	0.08	0.18	0.06	0.09	0.23	0.10
1994	0.09	0.19	0.06	0.09	0.23	0.08
1995	0.12	0.17	0.07	0.10	0.12	0.12
1996	0.12	0.16	0.07	0.11	0.11	0.12
1997	0.12	0.16	0.08	0.10	0.10	0.12
1998	0.13	0.16	0.08	0.10	0.11	0.12

Variable	N	Mean	Std Dev	Minimum	Maximum
FDress	27	0.1092593	0.0289464	0.0700000	0.1900000
WSh	27	0.2488889	0.0604046	0.1600000	0.3400000
Sweaters	27	0.1011111	0.0295262	0.0600000	0.1700000
KSh	27	0.0833333	0.0244949	0.0400000	0.1300000
Jeans	27	0.1070370	0.0690493	0.0400000	0.2500000
Slacks	27	0.1248148	0.0152846	0.0800000	0.1500000

Table 35. The Selected Men's Apparel Items and The Descriptive Statistics According to the Order of Consumption Share (Dollar Values)

year	Suits	Dress Coats	Dress Shirts	Dress Slacks	Knit Shirts	Casual Slacks	Jeans
1972	0.10	0.10	0.11	0.18	0.05	0.11	0.02
1973	0.10	0.10	0.10	0.18	0.06	0.12	0.02
1974	0.12	0.08	0.09	0.16	0.08	0.12	0.02
1975	0.12	0.06	0.09	0.14	0.09	0.13	0.02
1976	0.12	0.05	0.09	0.14	0.10	0.15	0.03
1977	0.12	0.06	0.08	0.12	0.11	0.09	0.17
1978	0.13	0.06	0.08	0.12	0.13	0.07	0.11
1979	0.12	0.06	0.08	0.12	0.13	0.06	0.13
1980	0.10	0.07	0.07	0.11	0.14	0.06	0.15
1981	0.09	0.07	0.07	0.11	0.16	0.05	0.15
1982	0.09	0.07	0.08	0.11	0.16	0.04	0.14
1983	0.09	0.07	0.08	0.11	0.16	0.04	0.16
1984	0.09	0.08	0.09	0.12	0.15	0.04	0.15
1985	0.10	0.08	0.09	0.11	0.15	0.03	0.15
1986	0.09	0.08	0.14	0.11	0.07	0.03	0.17
1987	0.09	0.07	0.09	0.10	0.11	0.03	0.16
1988	0.09	0.06	0.10	0.10	0.11	0.03	0.15
1989	0.08	0.05	0.12	0.11	0.12	0.03	0.17
1990	0.08	0.05	0.06	0.10	0.17	0.03	0.19
1991	0.07	0.05	0.07	0.09	0.17	0.02	0.21
1992	0.06	0.05	0.06	0.08	0.20	0.02	0.20
1993	0.05	0.04	0.06	0.08	0.21	0.02	0.20
1994	0.05	0.04	0.05	0.08	0.23	0.02	0.20
1995	0.05	0.04	0.05	0.07	0.25	0.04	0.17
1996	0.05	0.04	0.04	0.09	0.26	0.01	0.18
1997	0.04	0.04	0.04	0.11	0.26	0.01	0.17
1998	0.04	0.04	0.05	0.10	0.29	0.01	0.16

Variable	N	Mean	Std Dev	Minimum	Maximum
Suits	27	0.0862963	0.0270538	0.0400000	0.1300000
DCoats	27	0.0614815	0.0176948	0.0400000	0.1000000
DSH	27	0.0788889	0.0239122	0.0400000	0.1400000
DSL	27	0.1129630	0.0275702	0.0700000	0.1800000
KSH	27	0.1525926	0.0648426	0.0500000	0.2900000
CSL	27	0.0522222	0.0406990	0.0100000	0.1500000
Jeans	27	0.1388889	0.0609750	0.0200000	0.2100000

Table 36. The Selected Women's Apparel Items and The Descriptive Statistics According to the Order of Consumption Share (Dollar Values)

year	Formal Dress	Woven Shirts	Jackets	Sweaters	Knit Shirts	Jeans	Slacks
1972	0.28	0.15	0.02	0.11	0.08	0.03	0.08
1973	0.26	0.16	0.03	0.12	0.07	0.03	0.10
1974	0.22	0.17	0.02	0.12	0.07	0.04	0.10
1975	0.21	0.19	0.02	0.12	0.07	0.04	0.11
1976	0.20	0.19	0.02	0.12	0.07	0.04	0.12
1977	0.20	0.20	0.02	0.11	0.07	0.04	0.12
1978	0.21	0.21	0.02	0.11	0.06	0.03	0.12
1979	0.21	0.21	0.04	0.07	0.06	0.05	0.12
1980	0.19	0.21	0.05	0.08	0.06	0.06	0.13
1981	0.18	0.20	0.07	0.08	0.05	0.09	0.12
1982	0.18	0.19	0.07	0.11	0.06	0.06	0.11
1983	0.17	0.19	0.07	0.07	0.08	0.08	0.11
1984	0.17	0.17	0.06	0.10	0.07	0.08	0.11
1985	0.17	0.18	0.05	0.13	0.06	0.08	0.12
1986	0.16	0.19	0.05	0.13	0.06	0.08	0.10
1987	0.18	0.19	0.04	0.06	0.07	0.08	0.11
1988	0.18	0.15	0.05	0.11	0.07	0.07	0.12
1989	0.17	0.15	0.04	0.10	0.07	0.16	0.11
1990	0.17	0.14	0.04	0.07	0.08	0.18	0.11
1991	0.16	0.15	0.05	0.07	0.08	0.18	0.11
1992	0.14	0.14	0.06	0.07	0.10	0.19	0.11
1993	0.14	0.14	0.06	0.06	0.10	0.19	0.10
1994	0.15	0.14	0.06	0.06	0.10	0.19	0.10
1995	0.19	0.13	0.07	0.06	0.12	0.10	0.10
1996	0.18	0.12	0.08	0.07	0.11	0.10	0.10
1997	0.17	0.12	0.08	0.08	0.14	0.10	0.11
1998	0.16	0.11	0.07	0.08	0.16	0.10	0.11

Variable	N	Mean	Std Dev	Minimum	Maximum
FDress	27	0.1851852	0.0321499	0.1400000	0.2800000
WSh	27	0.1662963	0.0305272	0.1100000	0.2100000
Jackets	27	0.0485185	0.0199429	0.0200000	0.0800000
Sweaters	27	0.0914815	0.0242905	0.0600000	0.1300000
KSh	27	0.0811111	0.0262141	0.0500000	0.1600000
Jeans	27	0.0914815	0.0542575	0.0300000	0.1900000
Slacks	27	0.1096296	0.0101835	0.0800000	0.1300000

Stepwise regression was selected as an estimation method. The constructed and estimated casual shares from the theory-based composite index were regressed on the actual selected apparel demand data. The functional form of this model is as follow;

$$\underset{(27x1)}{Y} = \underset{(27x6(7))}{X}\underset{(6(7)x1)}{\beta} + \underset{(27x1)}{\varepsilon} \tag{11.1}$$

where, Y = 27x1 vector of the estimated casual shares from the theory-based composite index for the years from 1972 to 1998.

X = 27x6(7) matrix of six to seven selected apparel items

β = 6(7)x1 vector of parameters to be estimated, and

ε = 27x1 vector of random error.

The principles of stepwise regression were described in the previous section and the following is the results from the four (Men's/Women's and Unit volume/ Dollar values) indices.

11.1 Results from the Consumption-Based Composite *Casual Index*

Tables 37 to 40 are the main results from the stepwise regression of consumption-based composite *casual index* of men and women in unit volume and dollar values.

Table 37. Regression Results of Men's Consumption-Based Composite *Casual Index* (Unit Volume)

Overall Model R^2=0.9984, MSE = 0.00123, P-value = <0.0001		
*Estimated Casual Index: $\hat{y}$ = 0.851*Dress Slacks + 1.004*Knit Shirts + 2.627*Jeans*		
Variable	Para. Est.	*P*-value
Dress Slacks	0.85160	<.0001
Knit Shirts	1.00424	<.0001
Jeans	2.62764	<.0001

Table 38. Regression Results of Women's Consumption-Based Composite *Casual Index* (Unit Volume)

Overall Model R^2=0.9959, MSE = 0.00158, P-value = <0.0001		
*Estimated Casual Index: $\hat{y}$ = 1.087*Formal Dress + 1.414*Jeans + 2.174*Slacks – 0.342*Woven shirts + 0.958*Sweaters*		
Variable	Para. Est.	*P*-value
Formal Dress	1.08710	0.0009
Jeans	1.41441	<.0001
Slacks	2.17375	0.0003
Woven Shirts	-0.34233	0.0520
Sweaters	0.95825	0.0261

Table 39. Regression Results of Men's Consumption-Based Composite *Casual Index* (Dollar Values)

Overall Model R^2=0.9979, MSE = 0.00110, P-value = <0.0001		
*Estimated Casual Index: $\hat{y}$ = 2.452*Dress Shirts + 1.823*Knit Shirts +1.084*Jeans+ 1.753*Casual Slacks – 0.727*Suits*		
Variable	Para. Est.	*P*-value
Dress Shirts	2.45150	<.0001
Knit Shirts	1.82318	<.0001
Jeans	1.08278	0.0002
Casual Slacks	1.75300	0.0003
Suits	-0.72711	0.1221

Table 40. Regression Results of Women's Consumption-Based Composite *Casual Index* (Dollar Values)

Overall Model R^2=0.9957, MSE = 0.00129, P-value = <0.0001		
*Estimated Casual Index: $\hat{y}$ = 0.779*Formal Dress – 1.012*Woven Shirts + 1.355*Jeans + 3.027*Slacks + 0.628*Sweaters*		
Variable	Para. Est.	*P*-value
Formal Dress	0.77891	0.0016
Woven Shirts	-1.01210	0.0064
Jeans	1.35491	<.0001
Slacks	3.02737	0.0001
Sweaters	0.62800	0.0921

In all lines of men's and women's in unit volume and dollar values, the consumption-based composite casual indices fitted the theory-based composite indices extremely well with R-square ranging from 0.9957 to 0.9984. Furthermore, all included items in the consumption-based composite *Casual Index* were highly significant. These results represent the supremacy of created consumption-based composite *Casual Index* over the theory-based index. The theory-based composite index was still superior to the sub-indices with excellent R^2s but not all estimated parameters were statistically significant.

Structurally, it should be noted that the dependent variable for obtaining the "consumption-based casual index" is the "estimated value of the theory-based casual index." Originally, the latter was estimated from the independent variables with lag one. Therefore, the model for obtaining the consumption-based casual index does not have to apply any lags in the independent variables if the carry-over effects are assumed to be limited to one period only. Since this may not be the case, it would be of interest to check if the carry-over effects span more than one period. To test this for the two previous periods, an additional regression model was constructed. For the independent variables, two sets of matrices are created: one is without lag term (with one-period lag already built in) and the other is with one-period lag term (two-period lag in reality). Each set of matrix is composed of three to five apparel items chosen from the original model using stepwise regression techniques. For simplicity, the variables not chosen from the stepwise regression were also not included as the variables with two-period lags. Thus, the functional form of the additional regression model was as follow;

$$\underset{(28x1)}{Y} = \underset{(28x2k)}{X}\underset{(2k\ x\ 1)}{\beta} + \underset{(28x1)}{\varepsilon} \tag{11.2}$$

where, Y = 28x1 vector of the estimated casual shares from the theory-based composite index for the years from 1972 to 1998.

k = number of variables chosen from the stepwise regression without lag.

X = 28 x k matrix of selected apparel items from the original model (without lag) plus 28 x k matrix of same apparel items but with one period lag.

β = 10x1 vector of parameters to be estimated, and

ε = 28x1 vector of random error.

In this model, two sets of independent variables were employed simultaneously with two different weights of varying ratios; namely, 80/20, 70/30, and 60/40 for lag one vs. lag two. The higher weights were assigned to lag one in order to reflect the generally greater effects of the immediate past period. The idea was to select an optimal ratio by comparing the magnitudes of the R^2 values. The results of regression analyses for different weights are shown in Table 41 for men and women in terms of the unit volume and dollar values.

Table 41. Regression Results with Lag One in Independent Variables of Consumption-Based Composite Casual Index

		Applied Weights to No Lag vs. Lag in Independent Var.	Overall Model R^2	MSE	P-Values
Unit Volume	Men's	80/20	0.9993	0.00063	<0.0001
		70/30	0.9993	0.00067	
		60/40	0.9993	0.00066	
	Women's	80/20	0.9981	0.00100	<0.0001
		70/30	0.9980	0.00102	
		60/40	0.9981	0.00098	
Dollar Values	Men's	80/20	0.9990	0.00074	<0.0001
		70/30	0.9989	0.00075	
		60/40	0.9989	0.00075	
	Women's	80/20	0.9976	0.00095	<0.0001
		70/30	0.9977	0.00091	
		60/40	0.9976	0.00096	

It is quite clear from that there exist no significant differences among three different weights. While the MSEs shown in Table 41 are somewhat smaller than that of Tables 37-40, the improvements in the *p*-values could not be detected at all due to the high R^2 values for both models. The slightly higher R^2 values are merely due to the increase in the number of independent variables, and not from superiority of the model with additional lag terms. This suggests that the addition of two-period lags is not warranted. In summary, the original model with only one-period carry-over effects should be our choice for the consumption-based composite *Casual Index*.

It should be noted that the theory-based composite *Casual Index* from GSS and the habit stock was successfully validated with empirical data. In this process, we have also proven that use of the consumption-based *Casual Index* alone is highly promising. With only a few apparel items that take major shares of apparel consumption, a new simplified *Casual Index* was created. This index has a great advantage over the theory-based index for its simplicity in derivation and capability of forecasting without loss of contemporary Americans' social behaviors and preference patterns.

The estimated consumption-based composite Casual Index was plotted with the theory-based index in Figures 18 and 19. As shown in the figures, both men and women's casual trends were predicted to increase to about 1994-1995 and to 1990 for men's and women's, respectively, and slowed down steadily thereafter.

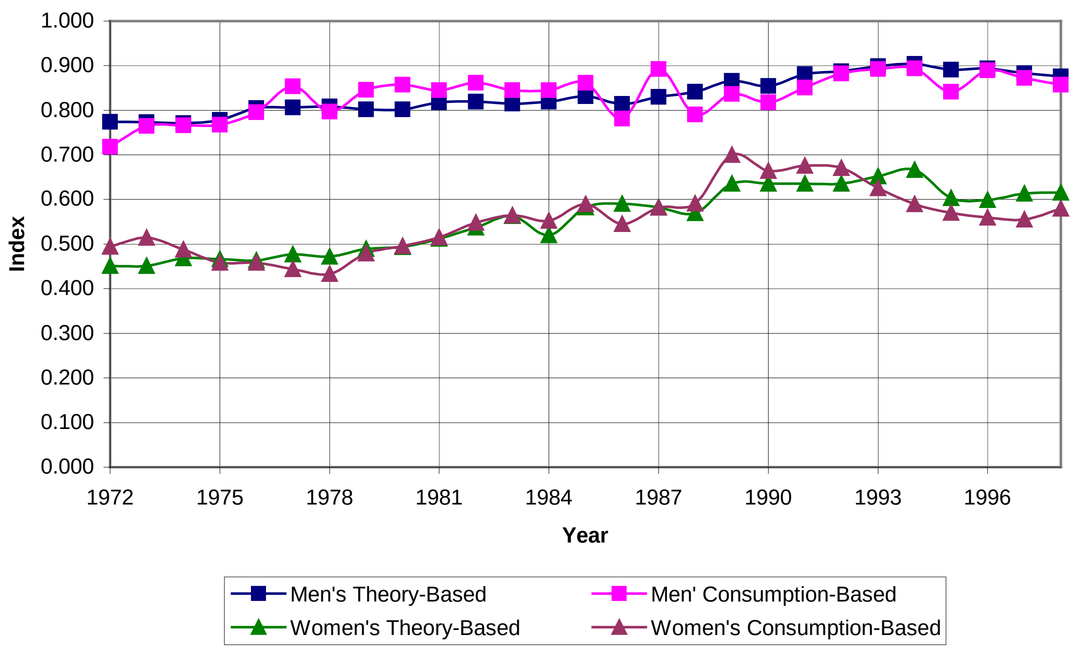

Figure 18. **Men's and Women's Estimated Consumption-Based and Actual Theory-Based Composite Casual Index (Unit Volume)**

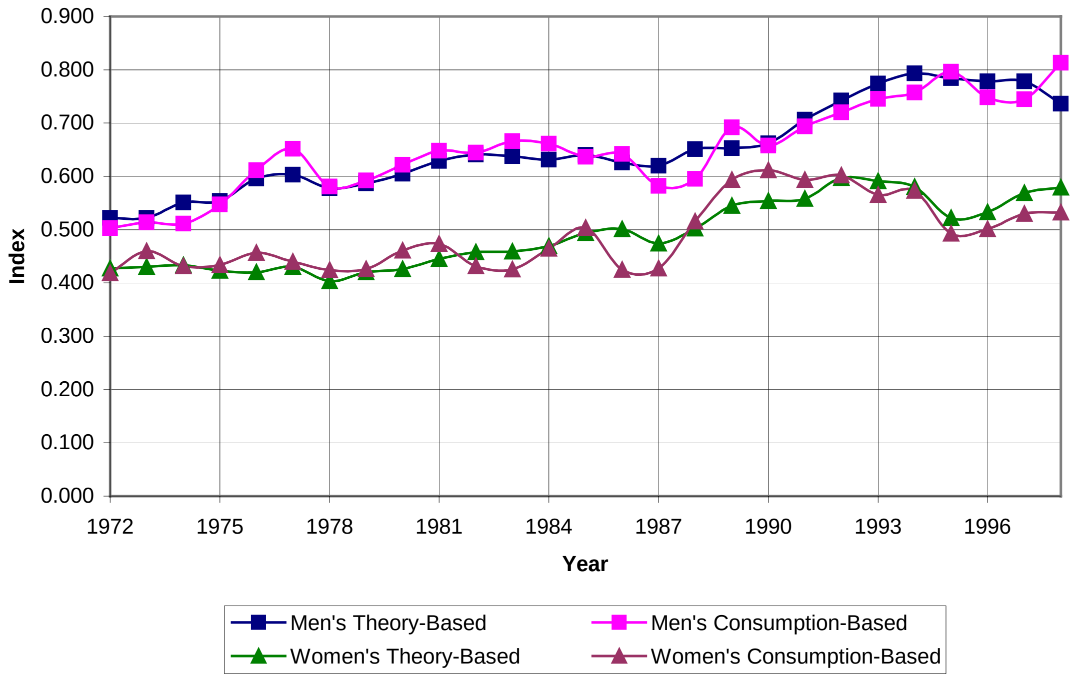

Figure 19. Men's and Women's Estimated Consumption-Based and Actual Theory-Based Composite Casual Index (Dollar Values)

This consumption-based composite *Casual Index* is believed to be novel, interdisciplinary, and academically challenging, while at the same time most practical in terms of its utility and has potential for generating timely information. Industry executives may apply the index for strategic issues relating to manufacturing planning, marketing, sales and product development. Also, using this index, they can broaden the scope of strategic decisions and enhance the accuracy of projections in decision-making.

12 Changes in *Casual Index* Based on the Models

In the previous sections, fashion indices called "*Casual Indices*" have been constructed based on the two approaches: one for theory-based and the other for consumption-based. Both indices showed an excellent performance in terms of the correlation coefficients as well as the mean squared errors. Details of the performance are described in the text. In this section, the overall changes in the estimated *Casual Indices* will be reviewed for each of the two models.

12.1 Changes in Estimated Theory-Based Composite *Casual Index*

Table 41 shows the results of applying the theory-based composite casual indices constructed in the previous section. Casual shares $\hat{y}$ are predicted from the listed equations. Based on these equations, the changes being taken place during the last quarter century are indeed remarkable as summarized in Table 42. Refer to Figures 14 to 17 in the section 10.1 for graphical representation.

Table 42. Summary of the Created Theory-Based Composite *Casual Index*

		Index
Unit Volume	Men's	$\hat{y}$ = *0.007928+ 0.0002186*Civil – 0.0002043*Confidence –- 0.0001783*labor + 0.25873*AIDS*
	Women's	$\hat{y}$ = *-0.24219 - 0.0003088*Federal – 0.0008686*Labor + 0.0010071*Race + 0.0001714*Religion + 0.169751*AIDS*
Dollar Values	Men's	$\hat{y}$ = *-0. 23326 + 0.0003369*Civil – 0.0004979*Confidence + 0.0002587*family + 0.0004023*politics+0. 58387*AIDS*

	Women's	$\hat{y} = -0.410395 - 0.000614*Abortion - 0.0005640*Confidence$ $+0.0013594*Social + 0.0001050*Federal + 0.003071*Politics$ $0.0003019*Race + .28247*AIDS$

Table 43. Notable Changes Found in Theory-Based Composite Casual Index

		Men's	**Women's**
Unit Volume	Casual Index in 1972	77.4%	45.1%
	Casual Index in 1998	87.6%	61.5%
	% Change	10.2%	16.4%
	Highest Share	90.4% (1994)	66.6% (1994)
Dollar Values	Casual Index in 1972	52.2%	42.7%
	Casual Index in 1998	73.6%	57.9%
	% Change	21.4%	15.2%
	Highest Share	79.3% (1994)	59.7% (1992)

As summarized above, both men and women's casual indices showed dynamic changes during the last three decades. Men's 1998 casual indices have increased by 10.2 percentage points and 21.4 percentage points based on unit volume and dollar values, respectively, over those for 1972. For women, the 1998 casual indices were shown to have increased by 16.4 percentage points and 15.2 percentage points over those for 1972. In all cases, the indices based on dollar values showed greater changes than those based on unit volume. Examining the changes, the increase in men's casual index (21.4%) was shown to have increased in dollar values whereas the same in unit volume (10.2%) was shown to be much lower. For women, the changes (16.4% and 15.2% in unit volume and dollar values, respectively) were shown to be about the same. All indices showed steady increases during the 1970s followed by sharp increases during the 1980s, reaching the peaks in 1994 or 1992. Subsequently, however, the indices are shown to have decreased somewhat. Except the women's casual index based on dollar values, all indices peaked in 1994.

12.2 Changes in Estimated Consumption-Based *Casual Index*

Table 43 shows the results of applying the consumption-based casual indices constructed in the previous section. Casual shares $\hat{y}$ are predicted from the listed equations. Based on these equations, the changes being taken place during the last three decades are summarized in Table 44. Graphical representations can be referenced in Figures 18 and 19 in the section 11.

Table 44. Summary of the Created Consumption-Based *Casual Index*

		Index
Unit Volume	Men's	$\hat{y}$ = *0.851*Dress Slacks + 1.004*Knit Shirts + 2.627*Jeans*
	Women's	$\hat{y}$ = *1.087*Formal Dress + 1.414*Jeans + 2.174*Slacks – 0.342*Woven shirts + 0.958*Sweaters*
Dollar Values	Men's	$\hat{y}$ = *2.452*Dress Shirts + 1.823*Knit Shirts +1.084*Jeans+ 1.753*Casual Slacks – 0.727*Suits*
	Women's	$\hat{y}$ = *0.779*Formal Dress – 1.012*Woven Shirts + 1.355*Jeans + 3.027*Slacks + 0.628*Sweaters*

Table 45. Notable Changes Found in Consumption-Based Casual Index

		Men's	**Women's**
Unit Volume	Casual Index in 1972	71.8%	49.4%
	Casual Index in 1998	85.7%	58.0%
	% Change	13.9%	8.6%
	Highest Share	89.4% (1994)	70.0% (1989)
Dollar Values	Casual Index in 1973	50.3%	41.8%
	Casual Index in 1999	81.3%	53.2%
	% Change	31.0%	11.4%
	Highest Share	81.3% (1998)	61.2% (1990)

As shown above, both men and women's casual indices have changed dramatically during the last three decades. Men's 1998 casual indices were higher by

13.9 and 31.0 percentage points than those in 1972 based on unit volume and dollar values, respectively. These changes are larger than that shown in the theory-based indices. For women, however, the 1998 casual indices showed increases of 8.6 and 11.4 percentage points compared that for 1972. These are smaller compared to the figures obtained for theory-based indices. In all cases, the pattern and magnitudes of the changes are much the same. For men, the changes based on dollar values (31.0%) were more than twice that based on unit volume (13.9%). Similar but more dynamic casual trends were found in both men and women's consumption-based casual indices when they were compared in three periods divided into 1970s, 1980s and 1990s. For men, the indices increased steadily during the 1970s but the increases during 1980s were less consistent. In 1990s, the index based on unit volume reached its highest share in 1994 followed by a decline, whereas the index based on dollar values kept on increasing until 1998. For women, the increases were slight in both unit volume and dollar values in 1970s, followed by dramatic increases during 1980s, reaching the peaks in the late 1980s and a subsequent decrease in 1990s.

13 Forecasting

Forecasting is an important science as well as an art in many disciplines: statistics, economics, production planning and sales forecasting just to name a few. Although a wide variety of forecasting methods is available, it is important to realize that no single method is universally applicable [Chatfield, 1989]. In this study, hold-out samples were used to evaluate the feasibility of forecasting based on the model employed. The hold-out sample method is often used to quantify the predictive validity of a model. Under this technique, the chosen model is checked for its capability of predicting the future values by utilizing only a portion of the available data up to a certain time point while holding the last portion of the available data as if they are unknown and to be predicted. The actual response variable and the predicted values thus obtained are compared against each other to see if forecasting is at all feasible. In this case, seven periods of data from 1992 to 1998 were held out as a period of evaluation.

Using seven hold-out samples, the feasibility of forecasting was checked for the theory-based composite *Casual Index* as well as consumption-based index. The same regression model that was used in the creation of the composite index was applied in obtaining the forecast for the last seven periods and comparing them with the actual values. The usual 95% confidence limits were applied in order to evaluate the effectiveness of the forecasting model. For the model to be effective and satisfactory for forecasting, the 95% confidence intervals should contain the actual values.

Figures 20-23 display the results of forecasting thus obtained. The dotted line with triangle markers represents the actual values from the theory-based composite

Casual Index and solid line with square markers is the predicted values. The upper and lower thick lines are 95% confidence bands. For both unit volumes and dollar values, the predicted values based on the men's theory-based composite *Casual Index* were mostly within the 95% confidence limits. For women’s indices, however, the predicted indices based on unit volumes were just above the 95% upper limit for the last four periods whereas the predicted indices based on dollar values were all on the borderline of the 95% limits. In spite of some of the out-of-bound points, the models are considered satisfactory in view of the proximity to the 95% limits. In general, forecasting with a time-series model seldom goes beyond one or two time periods in the future horizon. In this sense, the seven hold-out periods used in this study constituted a stringent test for the models. The results, therefore, provide an ample room for effective forecasting especially when the trends are well set for the immediate past and when the values to be predicted are limited to one or two future time periods. In reality, the numerical equations used for creating the *Casual Indices* must be modified if forecasting is the sole purpose. In this sense, it is remarkable to observe the degree of fit exhibited by the present data and the models not specifically designed for forecasting.

The following four figures (Figures 24 through 27) illustrate the results of the same forecasting exercise described above, but with the hold-out samples from the consumption-based composite *Casual Index.* With the same manner as in the case of the theory-based composite *Casual Index*, the feasibility of forecasting was checked for the consumption-based composite *Casual Index.*

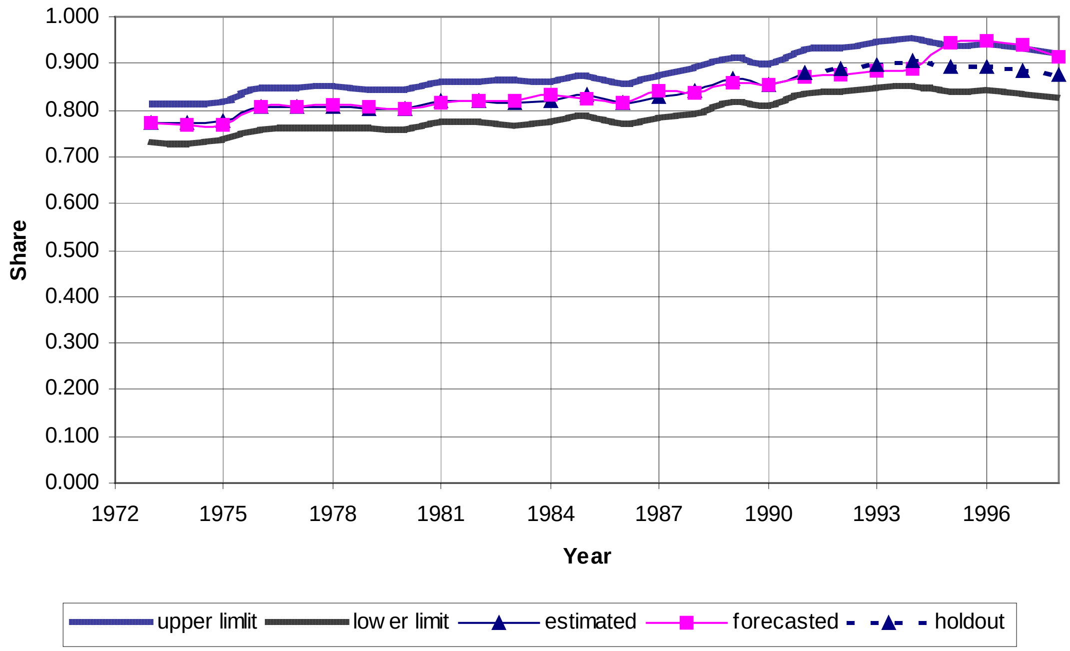

Figure 20. **Forecasting with 7 Holdout Samples for Men's Theory-Based Composite *Casual Index* (Unit Volume)**

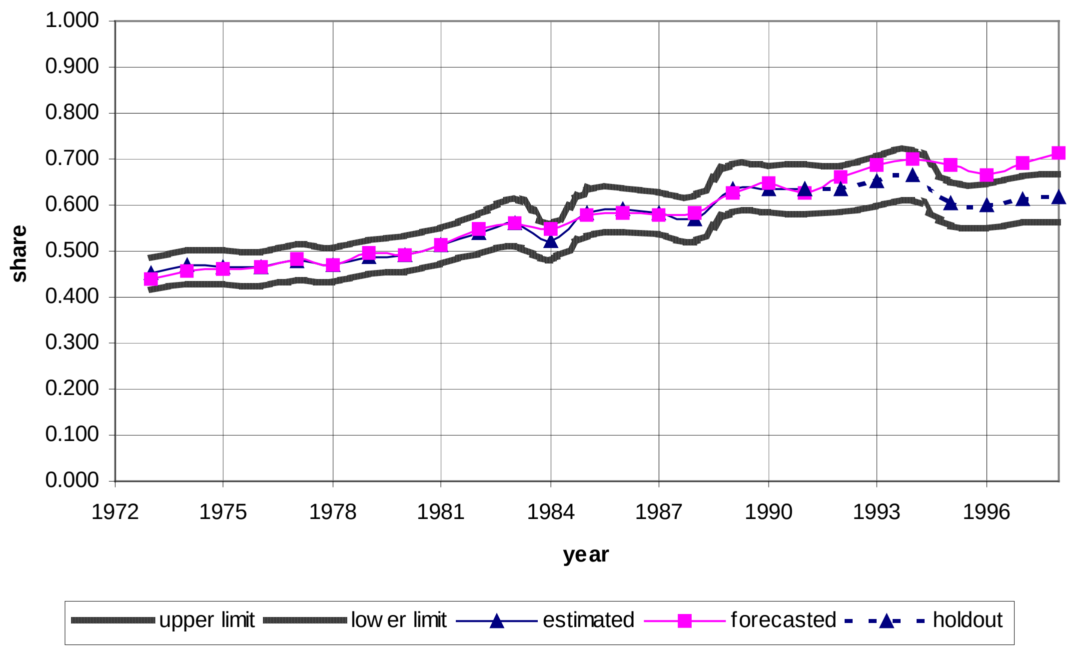

Figure 21. **Forecasting with 7 Holdout Samples for Women's Theory-Based Composite *Casual Index* (Unit Volume)**

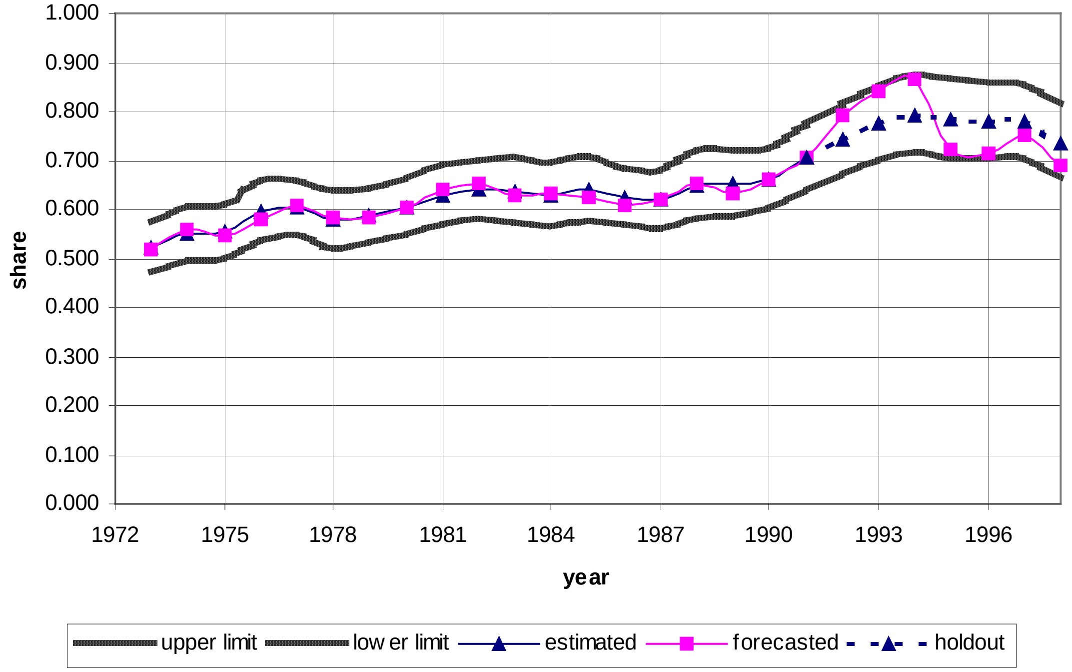

Figure 22. **Forecasting with 7 Holdout Samples for Men's Theory-Based Composite *Casual Index* (Dollar Values)**

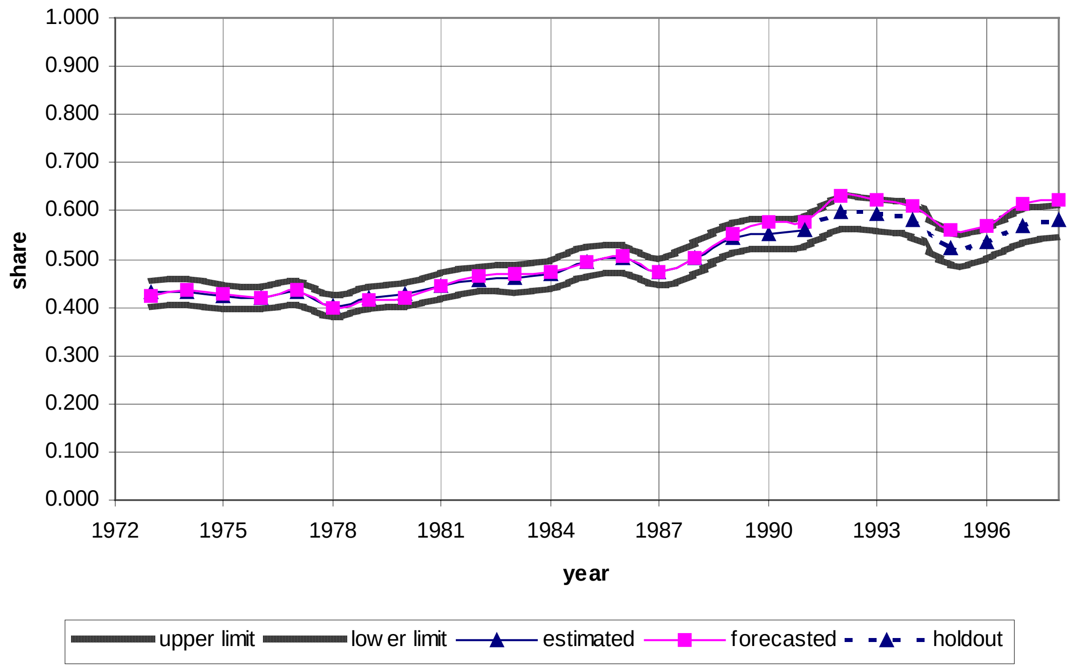

Figure 23. **Forecasting with 7 Holdout Samples for Women's Theory-Based Composite *Casual Index* (Dollar Values)**

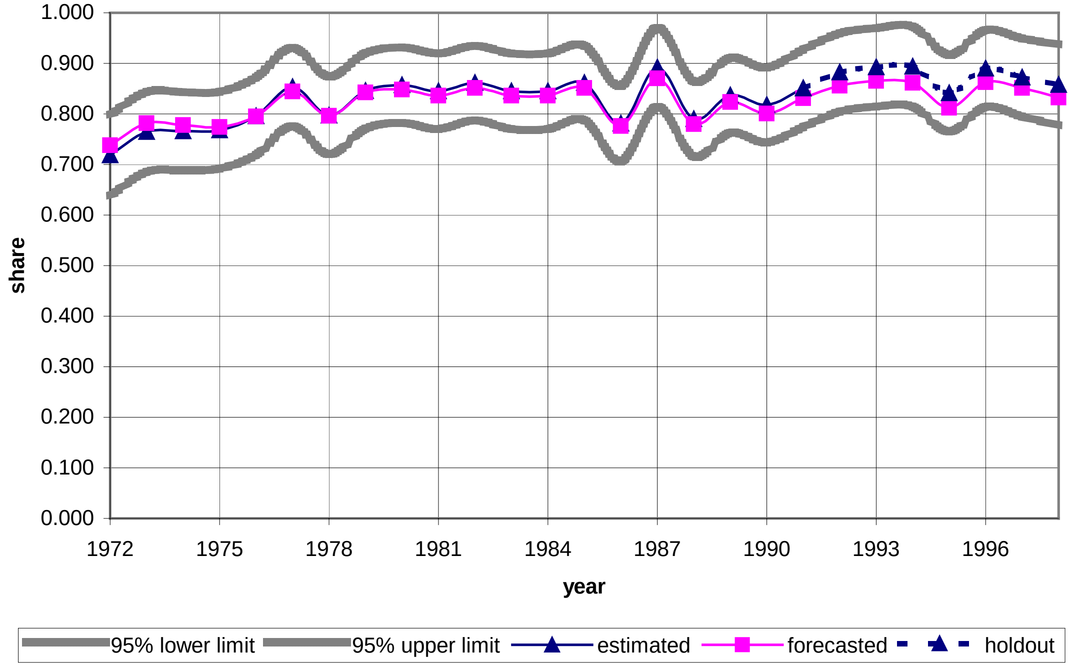

Figure 24. **Forecasting with 7 Holdout Samples for Men's Consumption-Based Composite Index (Unit Volume)**

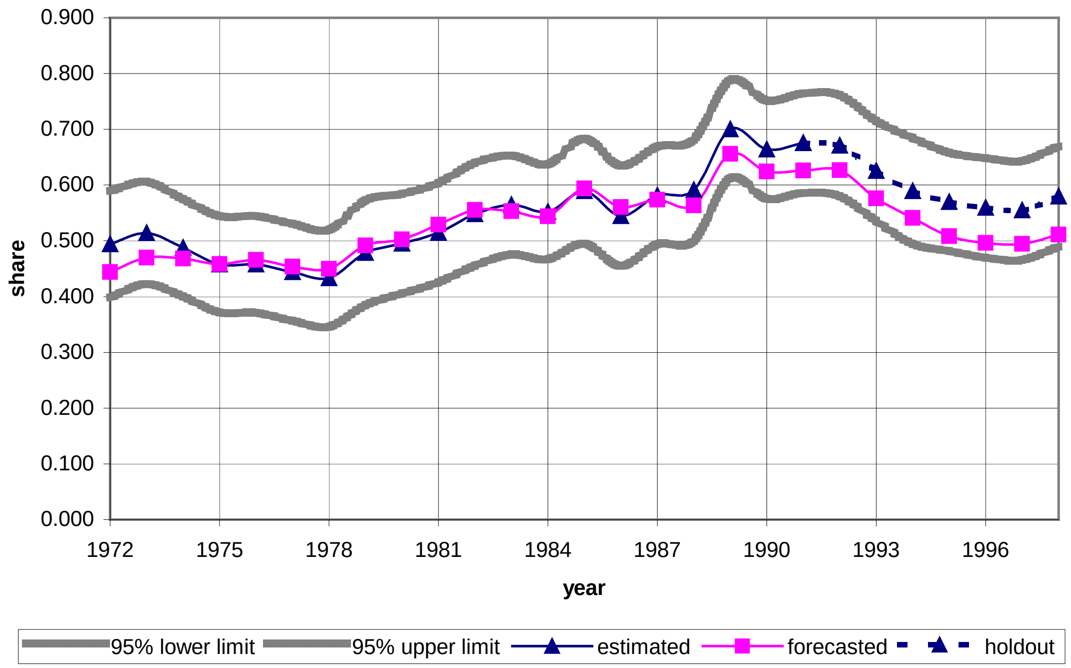

Figure 25. **Forecasting with 7 Holdout Samples for Women's Consumption-Based Composite Casual Index (Unit Volume)**

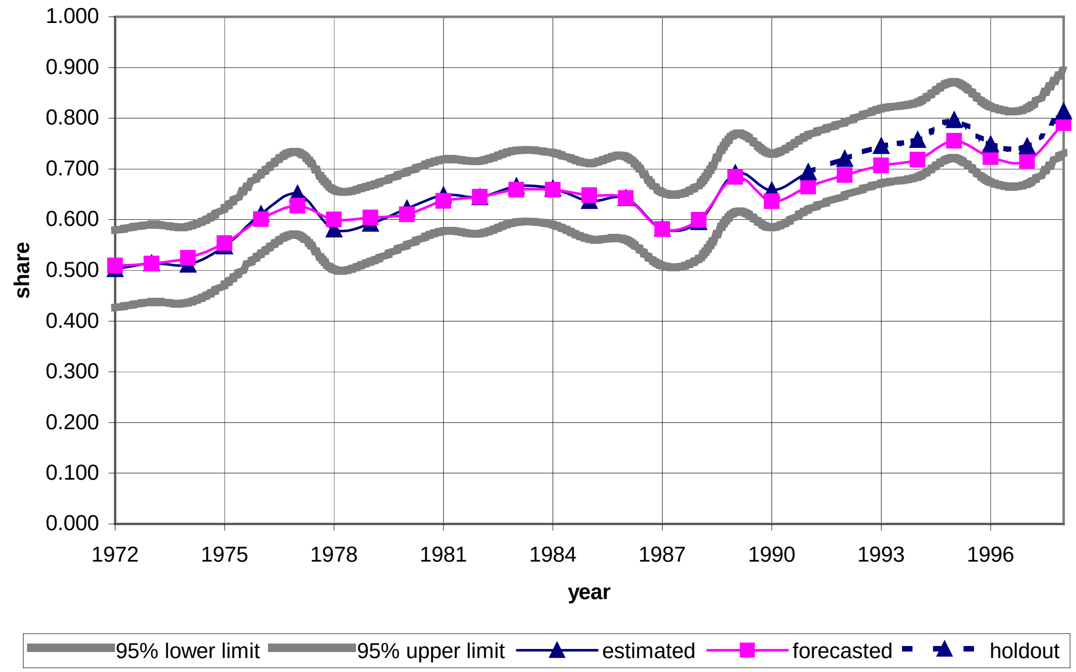

Figure 26. Forecasting with 7 Holdout Samples for Men's Consumption-Based Composite Casual Index (Dollar Values)

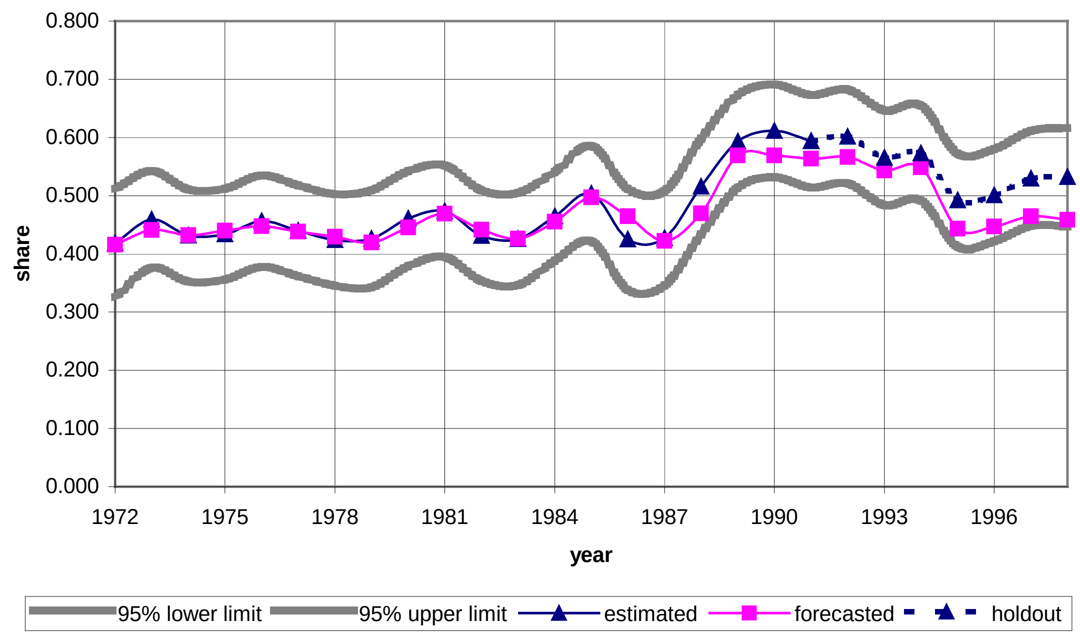

Figure 27. Forecasting with 7 Holdout Samples for Women's Consumption-Based Composite Casual Index (Dollar Values)

As shown in the figures, the dotted line with triangle markers represents the estimated values from the consumption-based composite *Casual Index* and solid line with square markers is the predicted values. The upper and lower thick lines are 95% confidence bands.

This time all forecasted values, both men and women's in terms of unit volumes and dollar values, were within the 95% confidence limits. This indicates that all four consumption-based casual indices are very effective and satisfactory for forecasting purpose. Structurally, it should be noted that the dependent variable for obtaining the “consumption-based casual index” is the “estimated value of the theory-based casual index.” The latter, however, was estimated from the independent variables with lag one. Therefore, the model for obtaining the consumption-based casual index does not have to apply any lags in the independent variables. This is a definite advantage in simplifying the model. While this index is inherently tied to the consumer purchase behaviors, it also comes from the apparel consumption figures that are fairly easy to obtain. On the other hand, the theory-based composite *Casual Index* is based on measurements and latent structures of general social behaviors that are quite difficult to measure and indirect in nature.

In summary, both the theory-based as well as consumption-based *Casual Indices* have shown to be excellent in forecasting the future indices. However, the consumption-based *Casual Index* should be our choice for practical application from the standpoints of its conceptual linkage to consumer apparel demands and the easiness with which the independent variables can be obtained for forecasting.

14 Derivation of "*Total Casual Index*"

Up to this point, two *Casual Indices*: theory-based composite *Casual Index* and consumption-based composite *Casual Index* were created. Each *Casual Index* has shown four independent indicators, in terms of the unit volume and dollar values for both men and women. This type of multi-way classification is often necessary for studying the consumer preference behaviors on textiles and apparel products. In this study, all analyses turned out to be highly useful and effective for tracking the changes.

However, the indices have different absolute values of their own that are difficult to compare. In other words, the magnitudes of men and women's indices cannot be directly compared as their bases of derivation differ markedly in some respects. These differences in absolute values between men and women are mainly from the number of items included in "casual" and "formal" categories. As mentioned earlier, the number of items included in the formal category was 5 for men and 6 for women whereas the items included in the casual category were15 and 11, respectively, for men and women. This means 75% of all items were picked as casual for men, whereas only 65% of the total were made up for women's casual items. While this difference was recognized from the beginning, there was no structural mechanism to make the two identical. An arbitrary adjustment could have been made at the onset. However, the original numbers were retained in order not to tamper with the theory development. A possible explanation on the differences in absolute values of the indices based on unit volume and dollar values can be made by the price decline of apparel items during the last decade. Apparel price has been dropped markedly, especially after the late 1980s due to the emerging new generation of discount stores and the shifting production overseas to cut costs. With these various reasons and because of the structural differences imbedded in the methods of formulating the indices, there is little meaning to compare men and women's absolute values of *Casual Index* or the indices from unit volume and dollar values. Rather, the significance could be attached only to the annual change, the overall trend and the peak point that occurred for each index series.

Nevertheless, people may ask, "Is there any way to simplify these indices?" "Is there any one number that can represent the total casualness at any given time point?" or "What is the current *Casual Index,* anyway?" These are rather important practical questions we must address with or without a sound theoretical foundation. To answer to these questions, it is necessary to simplify and unify the *Casual Indices* shown in four different ways and arrive at a single value *Casual Index* for each year from 1972 to 1998.

For this purpose, a new index, called "*Total Casual Index*" will be created by the following equation:

$$\textbf{Total Casual Index} = \mathbf{0.640}{*}\boldsymbol{M} + \mathbf{0.360}{*}\boldsymbol{W} \qquad \textbf{(13.1)}$$

where, M = Men's Consumption-based *Casual Index* based on unit volume

W = Women's Consumption-based *Casual Index* based on unit volume

The coefficients, 0.640 and 0.360 shown in Equation (13.1) are derived from the average shares of men and women's casual categories based on unit volume. Only the figures based on unit volume were considered in deriving "*Total Casual Index.*" It is common for demand variables to represent unit volumes, in model specifications. One reason is that the figures based on dollar values are the product of two variables, unit sales and price per unit, and the use of such combinations inhibits the interpretation of effects on demand. [Leeflang *et al*. 2000] Thus, it will be more general to use unit volume than to use dollar values. The *Total Casual Index*, thus obtained is listed in Table 45 and the trend over twenty-seven years is plotted in Figure 28. Figure 29 is for the comparison the consumption-based men and women's indices with the unified *Total Casual Index*.

Table 46. Total Casual Index

Year	Total Casual Index
1972	63.7
1973	67.4
1974	66.6
1975	65.6
1976	67.4
1977	70.6
1978	66.6
1979	71.4
1980	72.7
1981	72.6
1982	74.8
1983	74.4
1984	74.0
1985	76.3
1986	69.6
1987	78.0
1988	71.8
1989	78.7
1990	76.2
1991	78.7
1992	80.6
1993	79.6
1994	78.4
1995	74.4
1996	77.1
1997	75.8
1998	75.7

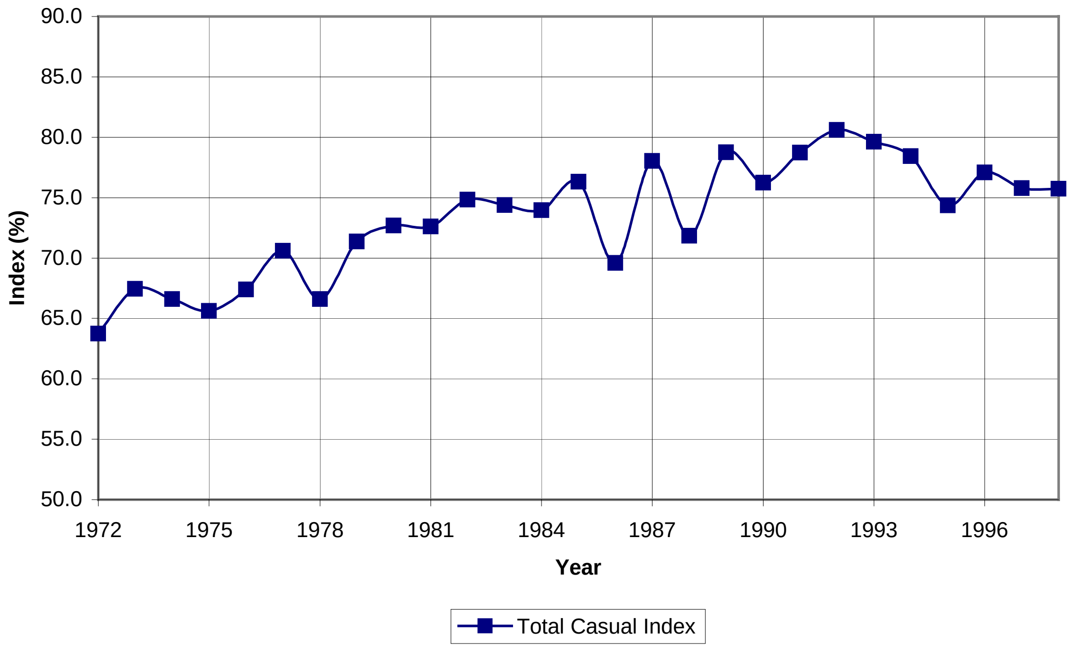

Figure 28. Total Casual Index

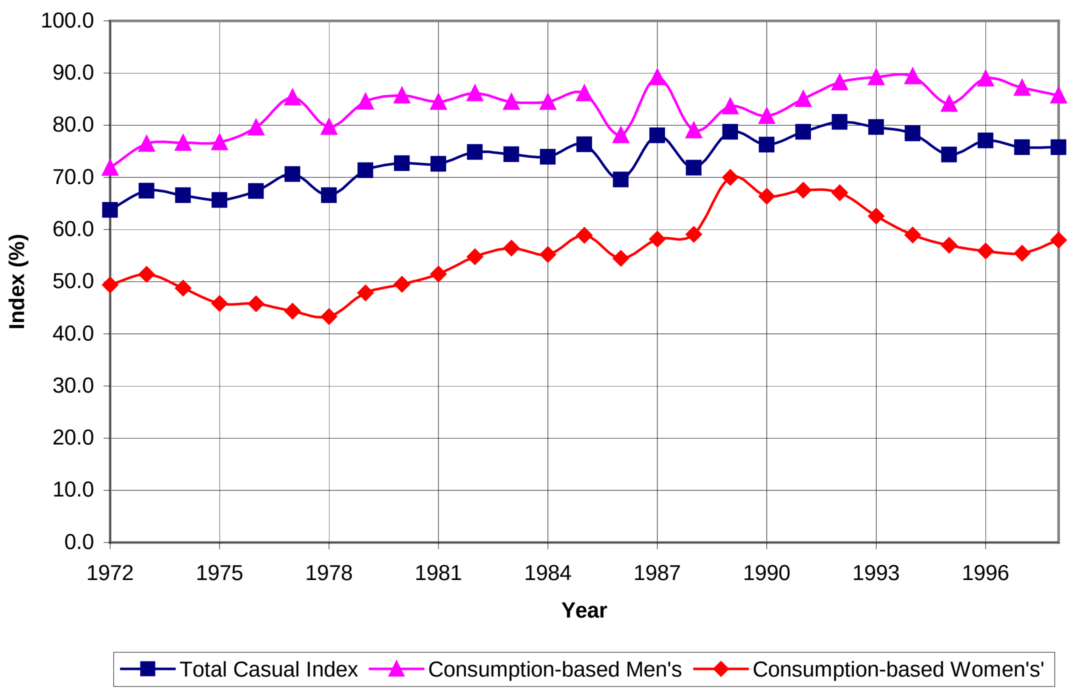

Figure 29. Comparison Consumption-Based Indices with Total Casual Index

As shown in the figures, the 1998 *Total Casual Index* (75.7%) was shown to have increased by 12 percentage points over that for 1972 (63.7%). Examining the changes, *Total Casual Index* has increased steadily until mid-1980s, followed by dynamic changes during the late 1980s, reaching the peak in 1992 (80.6%). The index is shown to have decreased thereafter. Compared to the consumption-based indices, *Total Casual Index* places between the men and women's consumption-based indices. It depicts the overall trends of men and women's consumption-based indices although the details are different.

The *Total Casual Index* as derived here simply provides a measure for casualness in apparel. The merit of such a measure will have to be examined based on the future events and public acceptance of the underlying concept. While an enhancement is always feasible, it is noteworthy that an index has been created for practical application based on a set of reasonable scientific criteria and estimation principles.

15 Summary and Conclusions

During the last three decades, U.S. apparel trend has undergone a great deal of changes stemming from social and economic factors that have originated from changes in consumer's lifestyles toward casual. During the period, the U.S. society has experienced various social awakenings in politics, Civil Rights and international relationships coupled with economic growth and prosperity. All these significantly affected American's lifestyles as well as their apparel purchase patterns.

In this study, a fashion preference indicator called "*Casual Index"* was created to signify and measure the degree of casualness at any given time point. The indices were constructed based on two approaches, namely, a theory-based index and a consumption-based index. The theory-based *Casual Index* was in turn, created from a combination of two sub-indices that were derived from general social behavior and consumer demand patterns. The theory-based composite *Casual Index* thus obtained were validated and simplified by use of consumption data on certain apparel items to give rise to a consumption-based *Casual Index*. A *Total Casual Index* was created by combining the consumption-based *Casual Indices* of men and women based on the unit volume. This index is aimed at unifying all measures into one so that the consumer’s casual trend can be expressed in one number at any given time point.

The analyses were based on the General Social Survey data and the Current Industrial Report MQ23A data for the last twenty-seven years, 1972 through 1998. The first component of the theory-based *Casual Index* was estimated by applying stepwise regression models into the selected GSS items. For the second component of the theory-based index, the casual share was estimated based on the consumer demands by employing a "Habit Stock" model into a Almost Ideal Demand system. The two theoretically created sub-indices were combined to obtain a theory-based composite *Casual Index* by employing a multivariate regression model. This composite index were to reflect the qualitative aspects of the lifestye as well as the quantitative side of consumer demand. In order to enhance the practical application of the indices, the consumption-based *Casual Index* was created from the selected major apparel items by applying stepwise regression models to the estimated values of the theory-based composite *Casual Index*. The created indices so far, have four independent indicators, in terms of the unit volume and dollar values for both men and women. In order to simplify and unify the *Casual Indices, Total Casual Index* was formulated only with consumption-based indices based on unit volume by taking average shares of men and women's casual categories.

All models fitted the data extremely well. The theory-based composite index showed better performance than the two sub-indices in terms of the correlation coefficients and mean squared errors. The theory-based composite *Casual Index* was successfully validated by the consumption figures of certain apparel items, generating the consumption-based C*asual Index* for practical applications in the absence of the complex mathematical models and social science data. Furthermore, the performance of the consumption-based index was the best among all indices created in this research. Both the theory-based as well as consumption-based *Casual Indices* have shown to be highly effective in forecasting the future indices. The consumption-based *Casual Indices* were shown to have high correlations with the widely perceived consumption figures for casual apparel. Also, the derived *Total Casual Index* depicted the overall trends of consumption-based men and women's indices based on unit volume well. The *Total Casual Index* here simply provides a measure for casualness in apparel by presenting a single figure in each year.

In this research, the choices made by the author in defining certain terms and selection of independent variables no doubt have created unique solutions to the questions at hand. However, this was inevitable as would have been the case with other similar research projects where indices have to be created with certain limitations. The definitions of casual vs. formal in this research are based on the couple of previous research on the contemporary American's general social behaviors. This is very broad concept but is very delimited in the scope. There could be other ways to define and measure casualness and formalness. Also, it is possible that any person's casualness or formalness in the socio-political perspectives may not be reflected in the same way on the preferences in consuming apparel.

The annual data on consumer demands of apparel are not ideal for measuring the dynamic changes of consumer preference. However, there were no monthly or quarterly data to improve the study. In the future, such data may become available.

In summary, this study created a theory-based composite *Casual Index* for the first time, by combining the lifestyles of the U.S. consumers as reflected in the social science data and the actual consumer preference as reflected in the apparel consumption data. A consumption-based *Casual Index* created for practical application has been tested and proven to be highly effective for estimation and forecasting of current and future casual indices. Furthermore, *Total Casual Index* was proposed to enhance the utility of the casual indices and express the casualness of a given time point in one simple figure. This index is expected to broaden the scope of strategic decisions and enhance the accuracy of projections based on the user-specific decision objectives for industries, government and academia.

16 References

Allen, R.G.D., and A. Bowley, (1935) *Family expenditure*, P.S. King and Son, London.

Allen, R.G.D., and J.R. Hicks, (1934) A reconsideration of the theory of value, *Econometrica*, Vol. **1**.

The Atlantic Monthly, (1999) A Politics for generation X, August Issue. **http://www.theatlantic.com/issues/99aug/9908genx.htm**

Barten, A.P., (1968) Estimating demand equations, *Econometrica*, **36**,Apr., 213-251.

Barten, A.P., (1977) The systems of consumer demand functions approach: A review, *Econometrica,* **45**, No.1, 23-51.

Bass, Frank M. and Jerry Wind (1995), "Introduction to the Special Issue: Empirical Generalizations in Marketing," *Marketing Science*, 14(3-2), G1-G6.

Baxter, R.D., (1860) *The budget and the income tax*, Macmillan, London.

Benini, R., (1907) Sull'uso delle formole empiriche nell'economia applicata, *Gionale degli economisti*, 2nd series, Vol. **35**.

Bernouilli, D., (1738) Specimen theoriae novae de mensura sortis," *Commentorii academiae Scentiarum imperialis Petropolitanae*, (English translation by L. Sommer, (1954) Exposition of a new theory on the measurement of risk, *Econometrica*, **22**)

Blanciforti, L. and R. Green, (1983) An almost ideal demand system incorporating habits: An analysis of expenditures on food and aggregate commodity groups (in Notes) *The Review of Economics and Statistics*, Vol. **65**, No. 3, 511-515.

The Business Journal, (2000) Next up: Generation Y, ready to learn and be team players, April 14, 2000 Isseu, http://www.bizjournals.com/jacksonville/stories/2000/04/17/smallb2.html

Chafetz, J.S. and H.R.F. Ebaugh, (1983) Growing conservatism in the United States? An examination of trends in political opinion between 1972-1980. *Sociological Perspectives*, Vol. **26,** No. 3, 275-298.

Chatfield, C., (1989) *The analysis of time series, an introduction*, Chapman & Hall

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests, *Psychometrika.* **16**, 297-334.

Dardis, R., F. Derrick, and A. Lehfeld, (1981) Clothing in the United States: a cross-sectional analysis, *Home Economics Research Journal.*, **10**, 212-222.

Davenant, C., (1699) An essay upon the probable methods of making a people gainers in the balance of trade.

Davis, J.A., (1971) *Elementary survey analysis*, Prentice Hall, Englewood Cliffs, New Jersey

Davis, J.A., (1975) Communism, conformity, cohorts, and categories: American tolerance in 1954 and 1972-1973, *American Journal of Sociology*, Vol. **81**: Issue 3, 491-513.

Davis, J.A., (1980) Conservative weather in a liberalizing climate: Change in selected NORC General Social Survey items, 1972-1978. *Social Forces*, Vol. **58**:4, 1129-1156.

Davis, J.A., (1992) Changeable weather in a cooling climate atop the liberal plateau: Conversion and replacement in 42 GSS Items, 1972-1989. *Public Opinion Quarterly*, Vol. **56**, No. 3, 261-306.

Davis, J.A., (1997) Capturing American attitude change, *The Public Perspective*, Vol.**8**, No.2; 31.

Deaton, A.S. and A. Brown, (1972) Surveys in applied economics: Models of consumer behaviour, *The Economic Journal*, **82**, Issue 328, 1145-1236.

Deaton, A.S. and J. Muellbauer, (1980) An almost ideal demand system, *American Economic Review*, **70**, 312-26.

Dieterici, K.F.W., (1838-57) *Statistische ubersicht der wichtigsten gegestande des verkehrs und verbrauchs im preussischen staate und im deutschen zollverbande*, Berlin.

Ducpetiaux, E., (1855) *Budgets economiques des classe ouvrieres en Belgique*, Brussels.

Engel, E., (1857) "Die productions und consumptionsverhaltnisse des Konigreichs Sachsen," in *Zeitschrift des Statischen Bureaus des Koniglich Sachsischen Ministerium des Inneren*, Nos. **8 and 9**, (reprinted in *Bulletin de I'Institut International de Statistique*, Vol. **9**)

Frisbee, W.R., (1985) Economic analysis of household clothing expenditures, *Canadian Home Economic Journal.*, **35**, 201-206.

Gibson, J.L., (1989) The policy consequences of political intolerance: Political repression during the Vietnam War Era, *The journal of Politics*, Vol**. 51**, Issue 1, 13-35.

Glenn, N.D., (1976) Cohort analysts' futile quest: Statistical attempts to separate age, period and cohort effect, *American Sociological Review*, Vol. **41**, Issue 5, 900-904.

GSS, 1972-1998: Cumulative codebook, The Roper Center for Public Opinion Research University of Connecticut, January, 1999.

Hammond, J.L., (1986) Yuppies, *Public Opinion Quarterly*, Vol. **50**, Issue 4, 487-501.

Himmelstein, J.L. and McRae, J.A., (1988) Social issues and socioeconomic status, *Public Opinion Quarterly*, Vol. **52**, Issue 4, 492-512.

Hoffmann, J.P. and Miller, A.S., (1997) Social and political attitudes among religious groups: Convergence and Divergence over time, *Journal for the Scientific Study of Religion*, **36**(1): 52-70.

Hoffmann, J.P. and Miller, A.S., (1998) Denominational influences on socially divisive issues: Polarization or continuity? *Journal for the Scientific Study of Religion,* **37**(3): 528-546.

Holt M.T., and B.K. Goodwin, (1997) Generalized habit formation in an Inverse Almost Ideal Demand System: An application to meat expenditures in the U.S., *Empirical Economics*, **22**, 293-320.

Houthakker, H.S., (1950) Revealed preference and the utility function, *Economica*, Vol.**17**.

Houthakker, H.S., and L.D. Taylor, (1966) *Consumer demand in the United States 1929-1970, Analysis and projections*, Harvard University Press.

Janis, I.L. et al., (1943) The reliability of a content analysis techniques, *Public Opinion Quarterly*, Vol. **7**, Issue 2, 293-296.

Kiecolt, K.J., (1988) Recent Developments in Attitudes and Social Structure. *Annual Review of Sociology*, Vol. **14**, 381-403.

Knoke, D., (1979) Stratification and the dimensions of American political orientations, *American Journal of Political Science,* Vol. **23**, Issue 4, 772-791.

Ladd, E.C., (1977) Liberalism upside down: The inversion of the New Deal order, *Political Science Quarterly,* Vol. **91**, Issue 4, 577-600.

Leeflang, P.S.H., D.R. Wittink, M. Wedel, and P.A. Naert, (2000) *Building models for marketing decisions*, Kluwer Academic Publishers, Netherland.

Lehfeldt, R.A., (1914) The elasticity of the demand for wheat, *Economic Journal*, Vol.**24**.

LePlay, P.G.F., (1855) *Les ouvriers europeens*, Paris.

Lloyd, G.H., (1771) An essay on the theory of money, London.

Luloff, A.E., et al., (1986) Social conservatism: Determinants and structural stability over time, *Journal of Rural Studies*, Vol. **2**, No.1, 9-18.

McBroom, W.H. and Reed, F.W., (1990) Recent trend in conservatism: Evidence of non-unitary patterns, *Sociological Focus*, Vol. **23**, No.4, 355-365.

Manser M.E., (1976) Elasticities of demand for food: An analysis using non-additive utility functions allowing for habit formation. *Southern Economic Journal*, 43, 879-891.

McCarthy, M., (1974) On the stability of dynamic demand functions. *International Economic Review*, **15**, 256-259.

Marshall, A., (1890) *Principles of Econom*ics, Macmillan, London.

Miller, A.S., (1994) Dynamic indicators of self-perceived conservatism, The Sociological Quarterly, Vol.35, No.1, 175-182.

Mitchell, S., (1996) Are boomers their parents? *American Demographics*, Vol. **18**, Issue 8, 40-46.

Mokhtari, M., (1992) An alternative model of US clothing expenditures:Application of cointegration techniques, *Journal of Consumer Affairs*, **26**, 305-323.

Moore, H.L., (1929) *Synthetic economics*, Macmillan, New York.

NORC homepage, http://www.icpsr.umich.edu/GSS.

Norum, P.S., (1989) Economic analysis of quarterly household expenditures on apparel, *Home Economics Research Journal*, **17**, 228-239.

Nunnally, J. C. (1978) *Psychometric theory (2nd ed.),* New York: McGraw-Hill.

Phlips, L., (1972) A dynamic version of the linear expenditure model. *Review of Economics and Statistics*, **54**, 450-458.

Pollak R.A, and T.J. Wales, (1969) Estimation of the linear expenditure system. *Econometrica*, **37**, 611-628.

Pollak R.A., (1970) Habit formation and dynamic demand functions, *The Journal of Political Economy*, **78**, No. 4, 745-763

Pollak R.A, and T.J. Wales, (1992*) Demand system specification and estimation.* Oxford University Press, New York.

Powers, D.A. and Xie, Yu (1999) http://www.la.utexas.edu/course-materials/sociology/soc385k/dpowers/chap1/chap1.html#foot126

Ray, R., (1984) A dynamic generalization of the almost ideal demand system. *Economics Letters*, **14**, 235-239.

Robinson, J.P and Fleishman, J.A., (1988) A report: Ideological identification: Trends and interpretations of the liberal-conservative balance, *Public Opinion Quarterly*, Vol.**52**, Issue 1, 134-145.

Sares, T.A., (1998) Sociopolitical viewpoints as narrated by family and educational background, *Journal of Social Psychology*, Vol.**138**, Issue 5, 637-8.

Schultz, H., (1938) *The theory and measurement of demand*, Chicago University Press.

Samuelson, P.A., (1938) A note on the pure theory of consumer behavior, *Economica*, Vol. **5**.

Samuelson, P.A., (1950) The problem of integrability in utility theory, *Economica*, Vol.**17**.

SAS Online Documents, http://sasdocs.ats.ucla.edu

Smith, A., (1776) *An inquiry into the nature and causes of the wealth of nations*, W.Strahan and T. cadell, London.

Smith, A., (1778) Age and social change: An analysis of the association between age-cohorts and attitude change, 1972-1977, *GSS Social Change Report*, No.5.

Smith, T.W., (1980) General liberalism and social change in post World War II America, GSS report 9.

Smith, T.W., (1990) Liberal and conservative trends in the United States since World War II. *Public Opinion Quarterly*, **54**, 479-507.

SSDC GSS Access Data variable search/extract program, http://ssdc.ucsd.edu/gss/extract.html

Stone, R., (1953) *The measurement of consumers' expenditure and behaviour in the United Kingdom, 1920-1938*, Vol. I, Cambridge University Press.

Stone, R., (1954) Linear expenditures systems and demand analysis: An application to the pattern of British demand, *The economics journal*, Vol. 64, Issue 255, 511-527.

Suh, M.W. and R.E. Funderburk, (1997) Will the casual trend continue-Modeling of US men’s apparel sales, 1990-1996. *Journal of Textile Institute*, **88** part2, No.1, 82-97.

Theil, H., (1975) *Theory and measurement of consumer demand*, vol.1, North-Holland publishing company, Amsterdam.

UCLA, Academic Technology Services, http://www.ats.ucla.edu/stat/stata/faq/sureg.htm

Verri, P., (1771) Meditazioni sull'economia politica, Livorno.

Wilson, T.C., (1994) Trends in tolerance toward rightist and leftist groups, 1976-1988: Effects of attitude change and cohort succession, *Public Opinion Quarterly*, Vol. **58**, Issue 4, 539-556.

Winakor, G., (1962) Consumer expenditures for clothing in the United States, 1929-1958, *Journal of Home Economics*, Vol. **54**, No. 2, Feb.

Winakor, G., (1989) The decline in expenditures for clothing relative to total consumer spending, 1929-1986., *Home Economics Research Journal*, March,Vol.**17**, No.3.

Winsborough, H.H., (1975) *Age, period, cohort, and education effects on earnings by race-An experiment with a sequence of cross-sectional surveys*, Pp 201-217 in Kenneth C. Land and Seymour Spilerman, Social Indicator Models. NewYork: Russell Sage.

WWD (Women's Wear Daily), (March 16, 2000) The lifestyle monitor turns five! http://www.cottoninc.com/wwd/homepage.cfm?PAGE=2298

17 Appendices

Appendix 17.1 112 GSS Original Questionnaire and Selected Answers

ABDEFECT
206. Please tell me whether or not <u>you</u> think it should be possible for a pregnant woman to obtain a <u>legal</u> abortion if. . .READ EACH STATEMENT, AND CIRCLE ONE CODE FOR EACH.
A. If there is a strong chance of serious defect in the baby?

RESPONSE	PUNCH	YEAR									COL: 780
		1972-82	1982 B	1983-87	1987 B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	10980	236	4625	236	3,056	840	1585	1514	1415	24,487
No (-)	2	2195	92	1210	94	707	193	341	336	385	5,553

ABHLTH
206. Please tell me whether or not <u>you</u> think it should be possible for a pregnant woman to obtain a <u>legal</u> abortion if. . .READ EACH STATEMENT, AND CIRCLE ONE CODE FOR EACH.
C. If the woman's own health is seriously endangered by the pregnancy?

RESPONSE	PUNCH	YEAR									COL: 782
		1972-82	1982 B	1983-87	1987 B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	12018	281	5229	283	3,428	923	1753	1694	1578	27,187
No (-)	2	1237	53	631	45	359	105	181	156	218	2,985

ABNOMORE
206. Please tell me whether or not <u>you</u> think it should be possible for a pregnant woman to obtain a <u>legal</u> abortion if. . .READ EACH STATEMENT, AND CIRCLE ONE CODE FOR EACH.
B. If she is married and does not want any more children?

RESPONSE	PUNCH	YEAR									COL: 781
		1972-82	1982 B	1983-87	1987 B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	5920	111	2387	125	1,640	480	930	853	758	13,204
No (-)	2	7133	216	3452	206	2,129	539	995	972	1033	16,675

ABPOOR
206. Please tell me whether or not <u>you</u> think it should be possible for a pregnant woman to obtain a <u>legal</u> abortion if. . .READ EACH STATEMENT, AND CIRCLE ONE CODE FOR EACH.
D. If the family has a very low income and cannot afford any more children?

RESPONSE	PUNCH	YEAR									COL: 783
		1972-82	1982 B	1983-87	1987 B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	6764	120	2598	142	1,742	508	971	853	789	14,487
No (-)	2	6262	212	3216	195	2,001	511	954	977	994	15,322

ABRAPE
206. Please tell me whether or not <u>you</u> think it should be possible for a pregnant woman to obtain a <u>legal</u> abortion if. . .READ EACH STATEMENT, AND CIRCLE ONE CODE FOR EACH.
E. If she became pregnant as a result of rape?

RESPONSE	PUNCH	YEAR								COL: 784
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	10922	234	4703	246	3,131	850	1616	1550	1439	24,691
No (-)	2	2123	97	1080	84	602	175	318	289	357	5,125

ABSINGLE
206. Please tell me whether or not <u>you</u> think it should be possible for a pregnant woman to obtain a <u>legal</u> abortion if. . .READ EACH STATEMENT, AND CIRCLE ONE CODE FOR EACH.
F. If she is not married and does not want to marry the man?

RESPONSE	PUNCH	YEAR									COL: 785
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	6197	100	2419	109	1,635	488	923	822	757	13,450
No (-)	2	6795	232	3390	226	2,104	526	1015	1010	1033	16,331

ANOMIA7
179. Now I'm going to read you several more statements. [See REMARKS.]
A. Most public officials (people in public office) are not really interested in the problems of the average man.

RESPONSE	PUNCH	YEAR									COL: 704
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Agree (-)	1	5774	248	2953	273	2,575	791	923	0	0	13,537
Disagree(+)	2	2933	82	1384	67	1,197	254	299	0	0	6,216

ATTEND
105. How often do you attend religious services? (USE CATEGORIES AS PROBES, IF NECESSARY.)

RESPONSE	**PUNCH**	**YEAR**									**COL: 402**
		1972-82	**1982B**	**1983-87**	**1987B**	**1988-91**	**1993**	**1994**	**1996**	**1998**	**ALL**
Never (+)	0	1776	28	1013	23	876	259	481	438	546	5,440
Less than once a year (+)	1	1080	22	546	16	469	136	226	253	294	3,042
About once or twice a year (+)	2	1851	34	1001	35	732	193	416	400	296	4,958
Several times a year (+)	3	1879	47	983	41	737	176	382	416	307	4,968
About once a month(+)	4	941	32	562	37	462	112	221	190	206	2,763
2-3 times a month (-)	5	1148	62	687	67	543	137	274	271	244	3,433

Nearly every week (-)	6	864	30	355	21	342	99	146	160	188	2,205
Every week (-)	7	2975	64	1726	75	1,274	321	560	486	489	7,970
Several times a week(-)	8	1045	33	632	37	401	135	235	209	218	2,945

BUSING
134A. In general, do you favor or oppose the busing of (Negro/Black/African-American) and white school children from one school district to another?

RESPONSE	PUNCH	YEAR									COL: 529
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Favor(+)	1	1946	191	1132	0	1,399	310	623	350	0	5,951
Oppose (-)	2	8302	145	3259	0	2,737	680	1236	576	0	16,935

CAPPUN
82. Do you favor or oppose the death penalty for persons convicted of murder?

RESPONSE	PUNCH	YEAR									COL: 360
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Favor (-)	1	6933	154	5410	154	4,274	1151	2215	2059	1906	24,256
Oppose(+)	2	2936	165	1696	165	1,242	337	580	621	693	8,435
Don't know (+)	8	607	32	399	33	364	112	184	214	220	2,165

CHLDIDEL
211. What do you think is the ideal number of children for a family to have?

RESPONSE	PUNCH	YEAR									COL: 804
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
None (+)	0	139	1	48	0	49	10	27	24	25	323
One (+)	1	218	16	89	0	88	37	50	54	49	601
Two (+)	2	5050	126	2397	0	2,071	595	1046	1072	1005	13,362
Three (-)	3	2364	52	1060	0	903	216	439	409	365	5,808
Four (-)	4	1536	66	545	0	393	90	189	162	163	3,144
Five (-)	5	218	15	75	0	67	13	23	22	17	450
Six (-)	6	121	11	39	0	31	3	3	12	11	231

CHLDMORE
212. Do you expect to have any (more) children?

RESPONSE	PUNCH	YEAR									COL: 805
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	2151	75	1050	0	894	230	104	0	0	4,504
No (+)	2	6614	256	3379	0	2,883	795	375	0	0	14,302

CHLDNUM
212. Do you expect to have any (more) children?
<u>IF YES</u>
A. How many (more)?

RESPONSE	PUNCH	YEAR									COL: 806
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
One (+)	1	697	31	326	0	258	80	36	0	0	1,428
Two (+)	2	951	32	454	0	384	84	42	0	0	1,947
Three (-)	3	277	4	161	0	129	41	16	0	0	628
Four (-)	4	97	2	55	0	49	8	6	0	0	217
Five (-)	5	26	2	7	0	11	3	0	0	0	49
Six (-)	6	15	0	8	0	7	0	0	0	0	30
Seven (-)	7	2	0	1	0	1	1	0	0	0	5
Eight or more (-)	8	10	2	2	0	2	0	0	0	0	16

COLATH
75. There are always some people whose ideas are considered bad or dangerous by other people. For instance, somebody who is against all churches and religion . . .
B. Should such a person be allowed to teach in a college or university, or not?

RESPONSE	PUNCH	YEAR									COL: 342
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes, allowed to teach (+)	4	4435	119	2060	138	1,944	556	1034	1060	1069	12,415
Not allowed (-)	5	5820	210	2257	196	1,803	470	871	769	707	13,103

COLCOM
78. Now, I should like to ask you some questions about a man who admits he is a Communist.
B. Suppose he is teaching in a college. Should he be fired, or not?

RESPONSE	PUNCH	YEAR									COL: 351
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes, fired (-)	4	5784	154	2211	149	1,687	392	783	714	686	12,560
Not fired (+)	5	4175	143	2020	165	1,986	602	1093	1087	1059	12,330

COLHOMO
80. And what about a man who admits that he is a homosexual?
B. Should such a person be allowed to teach in a college or university, or not?

RESPONSE	PUNCH	YEAR									COL: 357
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes, allowed to teach (+)	4	4609	181	2578	193	2,408	733	1409	1440	1387	14,938

Not allowed (-)	5	3990	139	1723	147	1,326	290	522	424	415	8,976

COMMUN
101. Thinking about all the different kinds of governments in the world today, which of these statements comes closest to how you feel about Communism as a form of government?

RESPONSE	PUNCH	YEAR									COL: 383
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
It's the worst kind of all (-)	1	4656	130	2544	146	1,952	486	250	0	0	10,164
It's bad, but no worse than some others (+)	2	2303	82	1187	99	1,262	378	157	0	0	5,468
It's all right for some countries (+)	3	1600	83	550	68	540	161	58	0	0	3,060
It's a good form of government(+)	4	166	12	68	5	45	13	5	0	0	314
Don't know (+)	8	245	45	103	33	106	32	14	0	0	578

CONBUS
165. I am going to name some institutions in this country. As far as the people running these institutions are concerned, would you say you have a great deal of confidence, only some confidence, or hardly any confidence at all in them? READ EACH ITEM; CODE ONE FOR EACH.
B. Major companies

RESPONSE	PUNCH	YEAR									COL: 587
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
A great deal (+)	1	3012	44	1468	67	917	221	510	447	500	7,186
Only some (+)	2	6507	218	3248	210	2,394	661	1232	1137	1078	16,685
Hardly any (-)	3	1863	71	569	55	440	130	199	260	243	3,830
Don't know (-)	8	598	18	220	20	187	43	64	80	87	1,317

CONCLERG
165. C. Organized religion

RESPONSE	PUNCH	YEAR									COL: 588
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
A great deal (-)	1	4071	121	1544	113	881	240	486	482	512	8,450
Only some (+)	2	5483	165	2724	159	1,884	521	1035	984	974	13,929
Hardly any (+)	3	1930	54	1042	66	1,044	257	436	365	358	5,552
Don't know (+)	8	488	10	188	14	130	33	45	91	61	1,060

CONFINAN
165. A. Banks and financial institutions

RESPONSE	PUNCH	YEAR	COL:

										586
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
A great deal (+)	1	3074	74	1394	96	744	158	356	476	490	6,862
Only some (+)	2	4632	204	3175	195	2,222	598	1218	1080	1068	14,392
Hardly any (-)	3	1095	56	817	51	873	275	403	317	306	4,193
Don't know (-)	8	197	15	116	11	101	23	25	47	43	578

CONJUDGE
165. J. U.S. Supreme Court

RESPONSE	PUNCH	YEAR									COL: 595
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
A great deal (+)	1	3740	84	1723	92	1,388	322	604	543	592	9,088
Only some (+)	2	5883	205	2860	201	1,917	546	1003	959	950	14,524
Hardly any (-)	3	1810	50	703	39	454	141	328	318	267	4,110
Don't know (-)	8	539	11	209	21	177	45	69	101	96	1,268

COURTS
90. In general, do you think the courts in this area deal too harshly or not harshly enough with criminals?

RESPONSE	PUNCH	YEAR									COL: 368
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Too harshly (+)	1	482	29	245	30	206	54	78	135	175	1,434
Not harshly enough(-)	2	9546	119	6253	255	4,822	1,300	2534	2246	2095	29,170
About right (Vol.) (+)	3	1227	17	694	43	573	156	226	310	372	3,618

DEGREE
19. B. <u>IF FINISHED 9th-12th GRADE OR DK</u>*: Did you ever get a high school diploma or a GED certificate? [SEE D BELOW.] [See REMARKS]
D. Do you have any college degrees? (<u>IF YES</u>: What degree or degrees?) CODE HIGHEST DEGREE EARNED.
<u>RESPONDENT'S DEGREE</u>

RESPONSE	PUNCH	YEAR									COL: 105
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Less than high school (-)	0	4667	147	1986	119	1,285	294	507	448	430	9,883
High school (-)	1	6733	159	3899	179	3,150	840	1586	1567	1500	19,613
Associate/Junior college (+)	2	303	11	288	12	309	97	176	187	209	1,592
Bachelor's(+)	3	1281	19	949	33	789	253	497	471	478	4,770
Graduate (+)	4	578	14	405	9	352	118	216	224	205	2,121

DRINK
175. Do you ever have occasion to use any alcoholic beverages such as liquor, wine, or beer, or are you a total abstainer?

RESPONSE	PUNCH	YEAR									COL: 691
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Use alcohol (+)	1	3280	0	4300	218	2,714	733	353	0	0	11,598
Total abstainer (-)	2	1239	0	1691	135	1,229	324	158	0	0	4,776

EQWLTH
73A.. Some people think that the government in Washington ought to reduce the income differences between the rich and the poor, perhaps by raising the taxes of wealthy families or by giving income assistance to the poor. Others think that the government should not concern itself with reducing this income difference between the rich and the poor.
Here is a card with a scale from 1 to 7. Think of a score of 1 as meaning that the government ought to reduce the income differences between rich and poor, and a score of 7 meaning that the government should not concern itself with reducing income differences. What score between 1 and 7 comes closest to the way you feel? (CIRCLE ONE):

RESPONSE	PUNCH	YEAR									COL: 338
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Government should(+)	1	392	0	1237	130	764	184	289	331	282	3,609
(+)	2	218	0	605	35	460	122	183	200	181	2,004
(-)	6	163	0	431	9	278	81	167	158	157	1,444
Government should not (-)	7	321	0	784	20	402	130	303	234	303	2,497

FAIR
162. Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?

RESPONSE	PUNCH	YEAR									COL: 578
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Would take advantage of you (-)	1	3059	0	2091	210	1,402	384	787	804	725	9,462
Would try to be fair(+)	2	5484	0	3617	123	2,291	589	1065	954	997	15,120

FAMGEN
1071. Number of family generations in household.

RESPONSE	PUNCH	YEAR									COL: 4466
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
One generation(+)	1	3895	148	3828	173	3,225	847	1627	1662	1674	17,079

Two generations, children (+)	2	3993	152	3384	138	2,461	706	1240	1115	1070	14,259
Two generations, parents (-)	3	75	5	61	2	35	9	24	17	22	250
Two generations, grandchild(ren) (-)	4	62	11	57	9	38	9	19	25	12	242
Three generations, child(ren), grandchildren (-)	5	149	34	138	26	105	21	62	54	37	626
Three generations, child(ren), parent (-)	6	90	3	70	5	41	14	19	29	17	288
Four generations (-)	7	6	1	4	0	2	0	1	2	0	16

FEAR
233. Is there any area right around here--that is, within a mile--where you would be afraid to walk alone at night?

RESPONSE	PUNCH	YEAR									COL: 901
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	3950	199	1790	159	1,599	461	933	804	772	10,667
No (+)	2	4980	149	2636	188	2,280	609	1045	1099	1079	14,065

FEFAM
252. Now I'm going to read several more statements. As I read each one, please tell me whether you strongly agree, agree, disagree, or strongly disagree with it. For example, here is the statement:
D. It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family.

RESPONSE	PUNCH	YEAR									COL: 933
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Strongly agree (-)	1	275	0	282	0	323	64	131	179	130	1,384
Agree (-)	2	714	0	1134	0	1,268	318	540	725	509	5,208
Disagree (+)	3	422	0	1150	0	1,622	491	896	1034	836	6,451
Strongly disagree(+)	4	92	0	380	0	625	181	349	415	343	2,385

FEHOME
199. Do you agree or disagree with this statement? Women should take care of running their homes and leave running the country up to men.

RESPONSE	PUNCH	YEAR									COL: 755
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Agree (-)	1	2455	122	1095	0	742	154	268	308	280	5,424
Disagree (+)	2	4858	223	3363	0	3,040	888	1632	1576	1534	17,114
Not sure (-)	8	223	8	132	0	144	34	71	69	50	731

FEPRES
199. Do you agree or disagree with this statement? Women should take care of running their homes and leave running the country up to men.

RESPONSE	PUNCH	YEAR									COL: 755
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Agree (-)	1	2455	122	1095	0	742	154	268	308	280	5,424
Disagree (+)	2	4858	223	3363	0	3,040	888	1632	1576	1534	17,114
Not sure (+)	8	223	8	132	0	144	34	71	69	50	731

FEWORK
200. Do you approve or disapprove of a married woman earning money in business or industry if she has a husband capable of supporting her?

RESPONSE	PUNCH	YEAR									COL: 756
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Approve (+)	1	6294	244	3605	0	3,087	849	1569	1595	1510	18,753
Disapprove (-)	2	2689	100	886	0	755	207	364	320	327	5,648
Don't know (-)	8	154	10	91	0	80	22	34	37	27	455

FUND
What is your religious preference? Is it Protestant, Catholic, Jewish, some other religion, or no religion?
104C. Fundamentalism/Liberalism of Respondent's Religion

RESPONSE	PUNCH	YEAR									COL: 401
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Fundamentalist (-)	1	3903	220	2467	247	1,900	539	936	887	808	11,907
Moderate (+)	2	6895	88	3073	60	2,312	575	1125	1041	1019	16,188
Liberal (+)	3	2554	39	1799	34	1,499	430	785	804	813	8,757

GRASS
95. Do you think the use of marijuana should be made legal or not?

RESPONSE	PUNCH	YEAR									COL: 377
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Should (+)	1	1803	0	1156	63	668	234	457	492	525	5,398
Should not (-)	2	5413	0	4654	277	3,124	770	1450	1332	1263	18,283
Don't know (+)	8	242	0	181	12	136	52	93	99	117	932

GUNLAW
86. Would you favor or oppose a law which would require a person to obtain a police permit before he or she could buy a gun?

RESPONSE	PUNCH	YEAR	COL: 364

		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Favor (+)	1	8696	269	3164	279	3,040	870	1551	1544	1535	20,948
Oppose (-)	2	3129	71	1211	67	796	185	406	338	302	6,505

HELPBLK
312. Now look at CARD AX. Some people think that (Blacks/Negroes/African-Americans) have been discriminated against for so long that the government has a special obligation to help improve their living standards. Others believe that the government should not be giving special treatment to (Blacks/Negroes/African-Americans).
A. Where would you place yourself on this scale, or haven't you made up your mind on this?

RESPONSE	PUNCH	YEAR									COL: 1111
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Government help (+)	1	240	0	525	129	407	75	164	155	124	1,819
(+)	2	126	0	579	53	447	105	146	163	194	1,813
No special treatment(-)	5	592	0	1905	33	1,313	290	581	539	526	5,779
Don't know (-)	8	40	0	193	9	144	30	60	63	70	609

HELPFUL
161. Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?

RESPONSE	PUNCH	YEAR									COL: 577
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Try to be helpful (+)	1	4554	0	3189	95	1,972	551	932	833	911	13,037
Just look out for themselves (-)	2	3994	0	2512	241	1,715	431	935	940	815	11,583

HELPPOOR
309. I'd like to talk with you about issues some people tell us are important. Please look at CARD AU. Some people think that the government in Washington should do everything possible to improve the standard of living of all poor Americans; they are at Point 1 on this card. Other people think it is not the government's responsibility, and that each person should take care of himself; they are at Point 5.
A. Where would you place yourself on this scale, or haven't you have up your mind on this?

RESPONSE	PUNCH	YEAR									COL: 1108
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Government (+)	1	434	0	1036	147	680	131	252	248	239	3,167
(+)	2	147	0	752	45	579	142	268	231	240	2,404
People (-)	5	194	0	614	21	360	109	232	204	230	1,964

HOMOSEX
219. What about sexual relations between two adults of the same sex--do you think it is always wrong, almost always wrong, wrong only sometimes, or not wrong at all?

RESPONSE	PUNCH	YEAR									COL: 819
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Always wrong (-)	1	6168	271	3238	283	2,811	671	1253	1078	1017	16,790
Almost always wrong (-)	2	498	17	189	12	164	44	76	93	100	1,193
Wrong only sometimes (+)	3	623	21	304	7	206	74	116	110	121	1,582
Not wrong at all (+)	4	1200	27	577	36	534	223	439	503	515	4,054

JOBFIND
180. B. About how easy would it be for you to find a job with another employer with approximately the same income and fringe benefits you now have? Would you say very easy, somewhat easy, or not easy at all?

RESPONSE	PUNCH	YEAR									COL: 708
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Very easy(+)	1	676	28	649	0	708	147	268	363	376	3,215
Somewhat easy (+)	2	780	35	844	0	780	220	419	437	437	3,952
Not easy at all (-)	3	1157	107	1205	0	905	298	585	533	408	5,198

JOBLOSE
180. A. Thinking about the next 12 months, how likely do you think it is that you will lose your job or be laid off--very likely, fairly likely, not too likely, or not at all likely?

RESPONSE	PUNCH	YEAR									COL: 707
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Very likely (-)	1	134	15	150	0	106	30	72	59	46	612
Fairly likely (-)	2	140	26	171	0	123	54	58	91	53	716
Not too likely (+)	3	628	56	642	0	586	179	347	378	327	3,143
Not at all likely (+)	4	1739	69	1744	0	1,598	405	807	812	806	7,980

JOBMEANS
183. Would you please look at this card and tell me which one thing on this list you would most prefer in a job? Which comes next? Which is third most important? Which is fourth most important?
E. Work important and gives a feeling of accomplishment

RESPONSE	PUNCH	YEAR									COL: 715
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Most (+)	1	3971	36	2170	102	1,925	530	228	0	0	8,962
Next (+)	2	1436	24	846	63	747	171	83	0	0	3,370

Third (-)	3	1094	33	651	62	478	170	63	0	0	2,551
Fourth (-)	4	921	43	451	71	410	118	59	0	0	2,073
Fifth (-)	5	578	27	253	44	191	48	30	0	0	1,171

JOBSEC
183. B. No danger of being fired

RESPONSE	PUNCH	YEAR									COL: 712
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Most (-)	1	602	19	301	37	219	91	39	0	0	1,308
Next (-)	2	1089	47	523	58	473	146	71	0	0	2,407
Third (+)	3	1594	40	883	79	809	210	103	0	0	3,718
Fourth (+)	4	2471	37	1518	109	1,232	348	152	0	0	5,867
Fifth (+)	5	2244	20	1146	59	1,018	242	98	0	0	4,827

LETDIE1
226. When a person has a disease that cannot be cured, do you think doctors should be allowed by law to end the patient's life by some painless means if the patient and his family request it?

RESPONSE	PUNCH	YEAR									COL: 873
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	2704	113	2946	0	2,659	696	1334	1329	1259	13,040
No (-)	2	1650	220	1480	0	1,085	323	537	548	499	6,342

LIBATH
75. There are always some people whose ideas are considered bad or dangerous by other people. For instance, somebody who is against all churches and religion . . .
C. If some people in your community suggested that a book he wrote against churches and religion should be taken out of your public library, would you favor removing this book, or not?

RESPONSE	PUNCH	YEAR									COL: 343
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Favor (-)	1	3934	170	1527	136	1,186	307	558	546	512	8,876
Not favor (+)	2	6389	154	2827	203	2,610	721	1384	1307	1295	16,890

LIBCOM
78. Now, I should like to ask you some questions about a man who admits he is a Communist.
C. Suppose he wrote a book which is in your public library. Somebody in your community suggests that the book should be removed from the library. Would you favor removing it, or not?

RESPONSE	PUNCH	YEAR									COL: 352
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Favor (-)	1	4226	155	1671	142	1,307	310	616	598	538	9,563
Not favor (+)	2	5966	147	2635	190	2,463	713	1322	1241	1247	15,924

LIBHOMO
80. And what about a man who admits that he is a homosexual?
C. If some people in your community suggested that a book he wrote in favor of homosexuality should be taken out of your public library, would you favor removing this book, or not?

RESPONSE	PUNCH	YEAR									COL: 358
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Favor (-)	1	3707	153	1768	159	1,272	313	562	536	479	8,949
Not favor (+)	2	4987	162	2567	182	2512	713	1366	1325	1316	15,130

LIFE
160. In general, do you find life exciting, pretty routine, or dull?

RESPONSE	PUNCH	YEAR									COL: 576
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Exciting (+)	1	3969	124	2063	126	1,723	496	938	951	838	11,228
Routine (+)	2	4412	194	2116	191	1,944	502	958	873	919	12,109
Dull (-)	3	470	33	228	24	187	69	82	80	103	1,276
No opinion (-)	8	43	1	24	4	23	4	12	14	16	141

MEMCHURH
328. Now we would like to know something about the groups or organizations to which individuals belong. Here is a list of various organizations. Could you tell me whether or not you are a member of each type? READ EACH ITEM. CODE ONE FOR EACH.
O. Church-affiliated groups [See Remarks]

RESPONSE	PUNCH	YEAR									COL: 1252
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	2789	0	2117	132	1,305	372	170	0	0	6,885
No (+)	2	4640	0	3836	219	2,589	680	339	0	0	12,303

MEMGREEK
328. J. School fraternities or sororities

RESPONSE	PUNCH	YEAR									COL: 1247
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	320	0	308	21	193	53	29	0	0	924
No (-)	2	7073	0	5639	329	3,693	998	480	0	0	18,212

MEMHOBBY
328. I. Hobby or garden clubs

RESPONSE	PUNCH	YEAR									COL: 1246
		1972-	1982B	1983-	1987B	1988-	1993	1994	1996	1998	ALL

		82		87		91					
Yes (+)	1	679	0	547	14	405	133	47	0	0	1,825
No (-)	2	6715	0	5400	336	3,485	918	462	0	0	17,316

MEMPOLIT
328. D. Political clubs

RESPONSE	PUNCH	YEAR									COL: 1241
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	302	0	264	9	160	37	24	0	0	796
No (-)	2	7097	0	5685	341	3,730	1014	485	0	0	18,352

MEMPROF
328. N. Professional or academic societies

RESPONSE	PUNCH	YEAR									COL: 1251
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	955	0	919	30	624	191	95	0	0	2,814
No (-)	2	6439	0	5032	321	3,260	860	414	0	0	16,326

MEMSCHL
328. H. School service groups

RESPONSE	PUNCH	YEAR									COL: 1245
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	1026	0	784	42	520	163	82	0	0	2,617
No (-)	2	6367	0	5166	308	3,368	888	427	0	0	16,524

MEMSPORT
328. F. Sports groups

RESPONSE	PUNCH	YEAR									COL: 1243
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	1369	0	1233	51	763	196	110	0	0	3,722
No (-)	2	6041	0	4723	299	3,131	855	399	0	0	15,448

MEMSERV
328. B. Service clubs

RESPONSE	PUNCH	YEAR									COL: 1239
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	678	0	618	27	388	131	51	0	0	1,893
No (-)	2	6725	0	5329	323	3,507	917	454	0	0	17,255

MEMUNION
328. E. Labor unions

RESPONSE	PUNCH	YEAR									COL: 1242
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes	1	1155	0	781	57	476	106	60	0	0	2,635
No (+)	2	6253	0	5167	293	3,412	945	449	0	0	16,519

NATAID
66. We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount. Are we spending too much money, too little money, or about the right amount on...
J. Foreign aid

RESPONSE	PUNCH	YEAR									COL: 286
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Too little (+)	1	499	38	212	13	136	39	64	60	92	1,153
About right (+)	2	2359	57	789	21	623	165	303	309	372	4,998
Too much	3	8524	231	2848	77	1,992	555	1077	984	833	17,121

NATARMS
66. I. The military, armaments and defense

RESPONSE	PUNCH	YEAR									COL: 285
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Too little (-)	1	3063	45	765	20	399	82	239	244	241	5,098
About right (+)	2	4924	115	1593	27	1,303	353	710	664	640	10,329
Too much (+)	3	3195	152	1493	60	1,058	330	493	445	418	7,644

NATCITY
66. D. Solving the problems of the big cities

RESPONSE	PUNCH	YEAR									COL: 280
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Too little (+)	1	5227	228	1663	71	1,366	429	844	752	629	11,209
About right (+)	2	3121	56	1240	25	840	175	343	336	412	6,548
Too much (-)	3	2002	39	610	8	307	92	197	186	167	3,608

NATCRIME
66. E. Halting the rising crime rate

RESPONSE	PUNCH	YEAR	COL: 281

		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Too little (-)	1	7972	268	2648	87	1,991	563	1131	965	D	16,467
About right (+)	2	2680	45	1020	22	665	163	241	330	392	5,558
Too much (+)	3	689	28	194	4	127	39	93	97	96	1,367

NATDRUG
66. F. Dealing with drug addiction

RESPONSE	PUNCH	YEAR									COL: 282
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Too little (+)	1	6973	232	2450	93	1,889	476	899	838	803	14,653
About right (+)	2	3260	63	1185	15	732	217	397	382	386	6,637
Too much (-)	3	924	35	220	4	176	63	130	159	129	1,840

NATEDUC
66. G. Improving the nation's education system

RESPONSE	PUNCH	YEAR									COL: 283
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Too little (+)	1	6086	278	2451	90	1,949	532	1064	984	962	14,396
About right (+)	2	4267	60	1261	26	754	196	324	329	306	7,523
Too much (-)	3	1158	9	205	0	107	46	88	89	87	1,789

NATENVIR
66. B. Improving and protecting the environment

RESPONSE	PUNCH	YEAR									COL: 278
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Too little (+)	1	6373	217	2317	81	1,999	445	885	836	826	13,979
About right (+)	2	3671	72	1226	28	650	239	443	391	386	7,106
Too much (-)	3	1221	36	273	3	129	74	127	152	106	2,121

NATFARE
66. K. Welfare

RESPONSE	PUNCH	YEAR									COL: 287
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Too little (+)	1	2049	201	858	56	650	130	189	217	221	4,571
About right (+)	2	3122	74	1246	28	947	198	359	373	498	6,845
Too much (-)	3	6279	52	1777	23	1,150	428	900	804	598	12,011

NATHEAL
66. C. Improving and protecting the nation's health

RESPONSE	PUNCH	YEAR									COL: 279
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Too little (+)	1	7032	251	2378	102	1,994	571	964	950	922	15,164
About right (+)	2	3756	64	1309	13	734	137	349	331	345	7,038
Too much (-)	3	705	22	209	3	84	60	127	113	78	1,401

NATRACE
66. H. Improving the conditions of Blacks

RESPONSE	PUNCH	YEAR									COL: 284
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Too little (+)	1	3280	309	1276	95	998	284	462	457	469	7,630
About right (+)	2	5029	33	1734	16	1,202	315	605	558	555	10,047
Too much (-)	3	2776	6	701	1	444	121	305	277	225	4,856

NATSPAC
66. A. Space exploration program

RESPONSE	PUNCH	YEAR									COL: 277
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Too little (+)	1	1254	15	525	9	403	67	136	158	139	2,706
About right (+)	2	3907	61	1686	22	1,253	295	562	577	605	8,968
Too much (-)	3	6213	250	1623	79	1,060	380	727	601	543	11,476

OWNGUN
237. Do you happen to have in your home (IF HOUSE: or garage) any guns or revolvers?

RESPONSE	PUNCH	YEAR									COL: 905
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (ASK A)	1	4236	128	2015	95	1,644	452	810	772	654	10,806
No (+)	2	4642	222	2418	251	2,229	614	1160	1142	1215	13,893

PARTYID
56. Generally speaking, do you usually think of yourself as a Republican, Democrat, Independent, or what?

RESPONSE	PUNCH	YEAR									COL: 240
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Strong Democrat (+)	0	2197	143	1271	151	864	227	423	400	370	6,046
Not very strong Democrat (+)	1	3482	109	1655	89	1,282	321	644	577	597	8,756
Independent, close to Democrat (+)	2	1768	44	904	51	578	190	341	356	349	4,581

Independent (Neither, No response)	3	1736	30	855	32	721	205	369	457	477	4,882
Independent, close to Republican (-)	4	1106	8	743	9	571	158	282	258	244	3,379
Not very strong Republican (-)	5	2011	8	1259	15	1,170	299	519	500	484	6,265
Strong Republican (-)	6	1009	8	751	2	662	180	321	307	239	3,479

PISTOL
237. Do you happen to have in your home (IF HOUSE: or garage) any guns or revolvers?
A. IF YES: Is it a pistol, shotgun, rifle, or what? CODE ALL THAT APPLY.

RESPONSE	PUNCH	YEAR									COL: 906
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	1883	74	1034	61	892	257	483	427	366	5,477
No (+)	2	6986	276	3400	285	2,977	809	1485	1484	1500	19,202

POLATTAK
232. Are there any situations you can imagine in which you would approve of a policeman striking an adult male citizen?
IF YES OR NOT SURE: Would you approve of a policeman striking a citizen who:
D. Was attacking the policeman with his fists?

RESPONSE	PUNCH	YEAR									COL: 900
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	6408	0	5537	309	3,617	969	1866	1756	1713	22,175
No (+)	2	290	0	381	29	252	67	117	139	150	1,425

POLESCAP
232. C. Was attempting to escape from custody?

RESPONSE	PUNCH	YEAR									COL: 899
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	5360	0	4436	209	2,894	767	1495	1306	1292	17,759
No (+)	2	1152	0	1304	113	851	239	420	513	518	5,110

POLHITOK
232. Are there any situations you can imagine in which you would approve of a policeman striking an adult male citizen?

RESPONSE	PUNCH	YEAR									COL: 896
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	5537	0	4343	180	2,715	770	1420	1284	1246	17,495
No (+)	2	1680	0	1422	137	991	234	517	549	574	6,104

POLVIEWS
65. We hear a lot of talk these days about liberals and conservatives. I'm going to show you a seven-point scale on which the political views that people might hold are arranged from extremely liberal--point 1--to extremely conservative-- point 7. Where would you place yourself on this scale?

RESPONSE	PUNCH	YEAR									COL: 273
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Extremely liberal (+)	1	225	17	136	16	147	30	71	59	64	765
Liberal (+)	2	1135	63	670	59	649	180	328	303	357	3,744
Slightly liberal (+)	3	1469	50	812	36	773	203	378	334	351	4,406
Slightly conservative (-)	5	1652	29	1166	43	950	264	472	451	432	5,459
Conservative (-)	6	1248	28	895	30	823	254	478	458	415	4,629
Extremely conservative (-)	7	265	12	173	13	150	42	103	93	86	937

POSTLIFE
108. Do you believe there is a life after death?

RESPONSE	PUNCH	YEAR									COL: 407
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	5264	0	4330	251	3,154	780	1425	1429	1687	18,320
No (+)	2	1528	0	1207	75	855	185	327	308	379	4,864
Undecided (+)	8	689	0	447	27	414	111	206	190	281	2,365

PORNINF
221. The next questions are about pornography--books, movies, magazines, and photographs that show or describe sex activities.
I'm going to read some opinions about the effects of looking at or reading such sexual materials. As I read each one, please tell me if you think sexual materials do or do not have that effect. READ EACH ITEM. CODE ONE FOR EACH.
A. Sexual materials provide information about sex

RESPONSE	PUNCH	YEAR									COL: 821
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	4490	0	3530	225	2,231	573	605	0	0	11,654
No (+)	2	2468	0	2132	97	1,467	419	367	0	0	6,950

PORNMORL
221. B. Sexual materials lead to breakdown of morals

RESPONSE	PUNCH	YEAR									COL: 822
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	4129	0	3649	170	2,412	671	582	0	0	11,613

No (+)	2	2828	0	2003	142	1,275	318	370	0	0	6,936

PORNOUT
221. D. Sexual materials provide an outlet for bottled-up impulses

RESPONSE	PUNCH	YEAR									COL: 824
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	4249	0	3550	193	2,269	634	587	0	0	11,482
No (+)	2	2206	0	1734	92	1,120	275	303	0	0	5,730

PORNRAPE
221. C. Sexual materials lead people to commit rape

RESPONSE	PUNCH	YEAR									COL: 823
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	3964	0	3308	171	2,213	596	491	0	0	10,743
No (+)	2	2861	0	2204	141	1,359	351	426	0	0	7,342

PORNLAW
222. Which of these statements comes closest to your feelings about pornography laws?
READ FIRST THREE CATEGORIES ONLY. CIRCLE ONLY ONE CODE.
HAND CARD AP

RESPONSE	PUNCH	YEAR									COL: 825
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
There should be laws against the distribu- tion of pornography whatever the age (-)	1	3079	0	2456	102	1,611	438	736	720	720	9,862
There should be laws against the distri- bution of pornography to persons under 18 (+)	2	3657	0	3219	217	2,080	568	1189	1109	1094	13,133
There should be no laws forbidding the dis- tribution of porno- graphy (+)	3	620	0	244	19	187	34	59	72	73	1,308

PREMARSX
217. There's been a lot of discussion about the way morals and attitudes about sex are changing in this country. If a man and woman have sex relations before marriage, do you think it is always wrong, almost always wrong, wrong only sometimes, or not wrong at all?

RESPONSE	PUNCH	YEAR									COL: 816
		1972-	1982B	1983-	1987B	1988-	1993	1994	1996	1998	ALL

		82		87		91					
Always wrong (-)	1	2788	104	1245	0	1,026	283	496	452	476	6,870
Almost always wrong (-)	2	988	19	405	0	387	106	192	183	166	2,446
Wrong only sometimes (+)	3	2005	50	1000	0	826	218	389	429	378	5,295
Not wrong at all (+)	4	3042	166	1818	0	1,573	443	830	832	784	9,488

RACCLOSE
129. A. Are there any (Negro/Black/African-American) families living close to you?

RESPONSE	PUNCH	YEAR									COL: 520
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	3682	201	2822	274	2,340	699	333	0	0	10,351
No (-)	2	1418	31	1501	72	719	235	100	0	0	4,076

RACDIS
129. B. How many blocks (or miles) away do they (the [Negro/Black/African-American] families who live closest to you) live?

RESPONSE	PUNCH	YEAR									COL: 521
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
On this block, a few doors/houses away (+)	1	2181	156	1887	205	1,579	482	252	0	0	6,742
1-3 blocks away, under 1/4 mile (+)	2	1790	50	1141	78	984	277	125	0	0	4,445
4-8 blocks away, 1/4 to 1 mile (-)	3	759	20	526	39	319	101	35	0	0	1,799
Over 8 blocks away, over 1 mile (-)	4	337	1	714	21	172	65	20	0	0	1,330

RACINTEG
129. C. Do you think this neighborhood will become all (Negro/Black/African-American) in the next few years, or will it remain integrated?

RESPONSE	PUNCH	YEAR									COL: 522
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
All Negro/Black (-)	1	316	54	200	48	166	40	28	0	0	852
Remain integrated (+)	2	4532	156	3256	225	2,808	883	395	0	0	12,255

RACMAR
125A. Do you think there should be laws against marriages between (Negroes/Blacks/African-Americans) and whites?

RESPONSE	PUNCH	YEAR	COL: 513

		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes	1	3618	23	1071	32	766	178	268	209	204	6,369
No (+)	2	7098	317	3220	306	3,027	859	1678	1672	1625	19,802

RACFEW
133. A. Would you yourself have any objection to sending your children to a school where a few of the children are [Whites/(Negroes/Blacks/African-Americans)]?

RESPONSE	PUNCH	YEAR									COL: 526
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	505	20	212	0	158	47	71	29	0	1,042
No (ASK B) (-)	2	7771	329	4343	0	4,161	1026	1875	951	0	20,456

RACMOST
133. C. IF NO OR DON'T KNOW TO B: Would you yourself have any objection to sending your children to a school where more than half of the children are [Whites/(Negroes/Blacks/African-Americans]?

RESPONSE	PUNCH	YEAR									COL: 528
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	2520	35	1493	0	1,325	311	571	234	0	6,489
No (+)	2	3390	275	1949	0	1,981	513	994	516	0	9,618

RACOPEN
128. Suppose there is a community-wide vote on the general housing issue. There are two possible laws to vote on (READ CATEGORIES A & B). Which law would you vote for?
HAND CARD AD

RESPONSE	PUNCH	YEAR									COL: 518
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
A. One law says that a homeowner can decide for himself whom to sell his house to, even if he prefers not to sell to (Negroes/Blacks/African- Americans) (-)	1	4190	0	2760	62	1,669	314	652	281	0	9,928
B. The second law says that a homeowner cannot refuse to sell to someone because of their race or color (+)	2	2598	0	3016	276	2,535	680	1251	651	0	11,007

RACPRES
135. If your party nominated a (Negro/Black/African-American) for President, would you vote for him if he were qualified for the job?

RESPONSE	PUNCH	YEAR	COL:

										531
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	6621	344	3794	0	3,211	909	1727	891	0	17,497
No (-)	2	1494	3	618	0	536	113	174	67	0	3,005

RACSEG
127. B. White people have a right to keep (Negroes/Blacks/African-Americans) out of their neighborhoods if they want to, and (Negroes/Blacks/African-Americans) should respect that right.

RESPONSE	PUNCH	YEAR									COL: 517
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Agree strongly (-)	1	1279	18	431	20	290	42	102	50	0	2,232
Agree slightly (-)	2	1148	21	640	12	503	109	197	59	0	2,689
Disagree slightly (+)	3	1852	31	1166	35	903	218	472	177	0	4,854
Disagree strongly (+)	4	2503	278	2119	275	2,108	681	1176	636	0	9,776

RELITEN
107. Would you call yourself a strong (PREFERENCE NAMED IN RELIG OR DENOM) or a not very strong (PREFERENCE NAMED IN RELIG OR DENOM)?

RESPONSE	PUNCH	YEAR									COL: 406
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Strong (-)	1	3971	176	3024	179	2,044	580	1102	1018	1022	13,116
Not very strong (+)	2	4668	108	3087	115	2,288	587	1188	1126	958	14,125
Somewhat strong (-)	3	937	33	643	33	757	216	314	301	285	3,519
No religion (+)	4	754	23	535	17	449	146	274	340	401	2,939
Don't know (+)	8	46	5	39	3	45	15	22	27	28	230

RICHWORK
182. If you were to get enough money to live as comfortably as you would like for the rest of your life, would you continue to work or would you stop working?

RESPONSE	PUNCH	YEAR									COL: 710
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Continue to work (+)	1	3626	135	2120	169	1,740	474	895	927	894	10,980
Stop working (-)	2	1510	60	769	47	722	213	465	437	391	4,614

RIFLE
237. Do you happen to have in your home (IF HOUSE: or garage) any guns or revolvers?
A. IF YES: Is it a pistol, shotgun, rifle, or what? CODE ALL THAT APPLY.

RESPONSE	PUNCH	YEAR									COL: 908
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL

Yes (-)	1	2560	34	1247	28	993	249	483	447	390	6,431
No (+)	2	6309	316	3187	318	2,878	817	1485	1464	1476	18,250

SATCITY
164. For each area of life I am going to name, tell me the number that shows how much satisfaction you get from that area. READ ITEMS A - E. CIRCLE ONE CODE FOR EACH.
A. The city or place you live in.

RESPONSE	PUNCH	YEAR									COL: 581
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
A very great deal (+)	1	2376	71	1052	41	666	182	80	0	0	4,468
A great deal (+)	2	3343	65	1811	107	1,191	304	161	0	0	6,982
Quite a bit (+)	3	2073	55	1064	50	752	195	105	0	0	4,294
A fair amount (+)	4	2545	88	1208	89	792	211	99	0	0	5,032
Some (-)	5	788	39	425	26	284	84	33	0	0	1,679
A little (-)	6	566	24	303	27	181	57	16	0	0	1,174
None (-)	7	284	7	97	11	68	21	16	0	0	504

SATFIN
187. A. We are interested in how people are getting along financially these days. So far as you and your family are concerned, would you say that you are pretty well satisfied with your present financial situation, more or less satisfied, or not satisfied at all?

RESPONSE	PUNCH	YEAR									COL: 733
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Pretty well satisfied(+)	1	4209	60	2202	69	1,743	430	832	803	849	11,197
More or less satisfied. (+)	2	6035	131	3320	157	2,619	712	1365	1287	1255	16,881
Not satisfied at all (-)	3	3324	158	1986	124	1,517	454	779	806	720	9,868

SOCBAR
173. Would you use this card and tell me which answer comes closest to how often you do the following things...
D. Go to a bar or tavern?

RESPONSE	PUNCH	YEAR									COL: 669
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Almost every day (+)	1	146	7	70	0	44	7	20	25	26	345
Once or twice a week (+)	2	675	28	392	0	308	85	142	144	125	1,899
Several times a month (+)	3	551	25	354	0	242	78	145	136	124	1,655
About once a	4	667	26	441	0	385	110	180	198	199	2,206

month(+)											
Several times a year(+)	5	841	45	529	0	415	120	261	250	232	2,693
About once a year (+)	6	714	28	470	0	457	120	243	250	239	2,521
Never (-)	7	3892	190	2329	0	2,078	556	971	948	916	11,880

SOCFREND
173. C. Spend a social evening with friends who live outside the neighborhood?

RESPONSE	PUNCH	YEAR									COL: 668
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Almost every day (+)	1	213	12	109	0	130	35	48	71	64	682
Once or twice a week (+)	2	1405	68	891	0	732	227	391	410	347	4,471
Several times a month (+)	3	1468	60	912	0	765	220	408	400	399	4,632
About once a month (+)	4	1580	63	1005	0	922	214	445	427	383	5,039
Several times a year(+)	5	1441	77	865	0	694	218	354	328	379	4,356
About once a year (-)	6	585	33	316	0	267	65	139	142	126	1,673
Never (-)	7	817	38	490	0	422	97	181	177	158	2,380

SOCOMMUN
173. B. Spend a social evening with someone who lives in your neighborhood?

RESPONSE	PUNCH	YEAR									COL: 667
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Almost every day(+)	1	461	38	280	0	204	49	103	101	98	1,334
Once or twice a week (+)	2	1660	58	900	0	729	181	315	330	299	4,472
Several times a month (+)	3	922	48	559	0	430	130	227	223	196	2,735
About once a month (+)	4	1150	50	656	0	572	156	278	307	292	3,461
Several times a year(+)	5	947	53	558	0	478	138	248	248	261	2,931
About once a year (-)	6	613	30	445	0	341	102	188	182	193	2,094
Never (-)	7	1753	75	1188	0	1,169	320	606	561	523	6,195

SHOTGUN
237. Do you happen to have in your home (IF HOUSE: or garage) any guns or revolvers?
A. IF YES: Is it a pistol, shotgun, rifle, or what? CODE ALL THAT APPLY.

RESPONSE	PUNCH	YEAR									COL: 907
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL

Yes (-)	1	2580	59	1249	50	1,004	289	480	473	389	6,573
No (+)	2	6289	291	3185	296	2,865	777	1488	1438	1477	18,106

SPKATH
75. There are always some people whose ideas are considered bad or dangerous by other people. For instance, somebody who is against all churches and religion . . .
A. If such a person wanted to make a speech in your (city/town/community) against churches and religion, should he be allowed to speak, or not?

RESPONSE	PUNCH	YEAR									COL: 341
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes, allowed to speak (+)	1	6796	172	3008	221	2,797	764	1451	1409	1393	18,011
Not allowed (-)	2	3676	168	1419	123	1,062	290	520	483	457	8,198

SPKCOM
78. Now, I should like to ask you some questions about a man who admits he is a Communist.
A. Suppose this admitted Communist wanted to make a speech in your community. Should he be allowed to speak, or not?

RESPONSE	PUNCH	YEAR									COL: 350
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes, allowed to speak (+)	1	5900	164	2614	194	2,505	736	1331	1230	1249	15,923
Not allowed (-)	2	4408	150	1746	138	1,310	308	619	640	577	9,896

SPKHOMO
80. And what about a man who admits that he is a homosexual?
A. Suppose this admitted homosexual wanted to make a speech in your community. Should he be allowed to speak, or not?

RESPONSE	PUNCH	YEAR									COL: 356
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes, allowed to speak (+)	1	5651	207	3015	228	2,893	839	1578	1553	1519	17,483
Not allowed (-)	2	2994	119	1305	111	894	199	363	325	306	6,616

SPKRAC
77. Or consider a person who believes that Blacks are genetically inferior.
A. If such a person wanted to make a speech in your community claiming that Blacks are inferior, should he be allowed to speak, or not?

RESPONSE	PUNCH	YEAR									COL: 347
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes, allowed to	1	3593	156	2578	188	2,423	649	1223	1164	1173	13,147

speak (+)											
Not allowed (-)	2	2257	183	1787	151	1,396	397	730	714	665	8,280

SUICIDE1
227. Do you think a person has the right to end his or her own life if this person . . .
READ EACH STATEMENT AND CIRCLE ONE CODE FOR EACH.
A. Has an incurable disease?

RESPONSE	PUNCH	YEAR									COL: 875
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	1843	77	2193	0	2,059	611	1211	1197	1132	10,323
No (-)	2	2545	261	2237	0	1,704	416	663	662	644	9,132

TVHOURS
242. On the average day, about how many hours do you personally watch television?

RESPONSE	PUNCH	YEAR									COL: 915-916
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
00 hours (+)	00	387	11	233	0	132	61	74	85	119	1,102
01 hours (+)	01	1466	46	826	0	749	327	425	384	499	4,722
02 hours (+)	02	1926	64	1186	0	1,061	449	534	564	642	6,426
03 hours (+)	03	1454	67	935	0	745	309	378	343	399	4,630
04 hours (+)	04	1015	62	614	0	535	192	279	261	318	3,276
05 hours (-)	05	536	24	323	0	288	107	112	123	157	1,670
06 hours (-)	06	332	23	215	0	181	75	85	80	89	1,080
07 hours (-)	07	80	7	38	0	36	10	15	19	18	223
08 hours (-)	08	129	16	102	0	84	33	29	31	47	471
09 hours (-)	09	16	4	6	0	9	2	4	3	7	51

UNEMP
193. At any time during the last ten years, have you been unemployed and looking for work for as long as a month?

RESPONSE	PUNCH	YEAR									COL: 748
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	1	2918	0	1473	0	1,173	341	647	642	580	7,774
No (+)	2	7569	0	3056	0	2,765	712	1357	1275	1316	18,050

UNION
196. Do you (or your [SPOUSE]) belong to a labor union? (Who?)

RESPONSE	PUNCH	YEAR									COL: 751
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL

Yes, respondent belongs (-)	.1	1073	0	804	58	491	155	225	224	189	3,219
Yes, spouse belongs(-)	2	635	0	376	14	233	82	77	86	80	1,583
Yes, both belong (-)	3	140	0	122	10	63	12	31	34	48	460
No, neither belong (+)	4	5606	0	5336	265	3,640	1,342	1650	1566	1577	20,982

USINTL
99. Do you think it will be best for the future of this country if we take an active part in world affairs, or if we stay out of world affairs?

RESPONSE	PUNCH	YEAR									COL: 381
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Active part (+)	1	4729	157	3436	0	2,708	725	324	0	0	12,079
Stay out (-)	2	2471	177	1569	0	1,091	306	159	0	0	5,773

USUN
100. Do you think our government should continue to belong to the United Nations, or should we pull out of it now?

RESPONSE	PUNCH	YEAR									COL: 382
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Continue to belong (+)	1	5781	239	3603	0	3,269	920	415	0	0	14,227
Pull out now (-)	2	1217	77	719	0	471	106	65	0	0	2,655

WKSUBS
191. Do you (does your [SPOUSE]) have a supervisor on (your/his/her) job to whom you are (he/she/is) directly responsible?
A. IF YES: Does that person have a supervisor on the job to whom he is directly responsible?

RESPONSE	PUNCH	YEAR									COL: 745
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (-)	3	4805	132	1991	158	1,650	478	926	930	866	11,936
No (+)	4	1138	28	525	26	413	123	230	214	233	2,930

XMOVIE
223. A. Have you seen an X-rated movie in the last year?

RESPONSE	PUNCH	YEAR									COL: 826
		1972-82	1982B	1983-87	1987B	1988-91	1993	1994	1996	1998	ALL
Yes (+)	1	1392	0	1424	135	944	202	331	503	452	5,383
No (-)	2	6059	0	4544	217	2,979	848	1163	1405	1444	18,659

Appendix 17.2 Analytical Output for Cronbach Coefficient Alpha

Civil Liberties

Male

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.978830
Standardized	0.986338

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
COLATH	0.908132	0.976861	0.904618	0.985804
COLCOM	0.908839	0.976801	0.905282	0.985779
COLHOMO	0.971576	0.978044	0.967816	0.983461
LIBATH	0.905641	0.977058	0.909839	0.985612
LIBCOM	0.966843	0.975342	0.966391	0.983515
LIBHOMO	0.979556	0.973122	0.974356	0.983217
SPKATH	0.860897	0.978203	0.865822	0.987226
SPKCOM	0.953350	0.975389	0.955523	0.983920
SPKHOMO	0.976847	0.975358	0.973119	0.983263

Female

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.982947
Standardized	0.991012

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
COLATH	0.919245	0.981376	0.921838	0.991122
COLCOM	0.919430	0.981332	0.922282	0.991106
COLHOMO	0.977446	0.983189	0.974002	0.989288
LIBATH	0.974435	0.980515	0.972951	0.989326
LIBCOM	0.978491	0.980588	0.979783	0.989084
LIBHOMO	0.981759	0.978449	0.980099	0.989073
SPKATH	0.949034	0.980119	0.946559	0.990255
SPKCOM	0.939165	0.981526	0.943278	0.990371
SPKHOMO	0.973316	0.980820	0.969698	0.989440

Confidence

Male

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.331228
Standardized	0.252055

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
CONBUS	0.738705	-.134637	0.464914	-.028506
CONFINAN	0.866842	-.334562	0.727752	-.249192
CONJUDGE	0.798310	-.070368	0.526478	-.077192
DEGREE	-.833208	0.632215	-.752014	0.626187
FAIR	0.298144	0.288809	0.397016	0.023142
HELPFUL	-.184374	0.387358	-.040449	0.308205
SATCITY	-.244313	0.514779	-.054404	0.316040
SATFIN	0.180528	0.275105	0.035585	0.264226

Female

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.372637
Standardized	0.215351

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
CONBUS	0.549245	0.112618	0.300953	0.038380
CONFINAN	0.776380	-.149144	0.628899	-.235955
CONJUDGE	0.791433	0.029694	0.513213	-.132857
DEGREE	-.809425	0.599095	-.762404	0.611284
FAIR	0.182262	0.344130	0.269810	0.061641
HELPFUL	-.070839	0.414173	0.079550	0.194033
SATCITY	-.106353	0.491259	0.074667	0.197218
SATFIN	0.116307	0.381898	-.004510	0.247447

Social Welfare & Violence

Male

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.380077
Standardized	0.527454

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
CAPPUN	0.446309	0.183909	0.325098	0.478912
COURTS	0.383754	0.215988	0.247995	0.496742
EQWLTH	0.574194	0.323689	0.520875	0.431258
HELPBLK	0.540599	0.318495	0.342653	0.474780
HELPPOOR	0.505110	0.349130	0.643809	0.399529
FEAR	-.437686	0.497834	-.387669	0.625155
GUNLAW	-.299842	0.489458	-.044193	0.559740
OWNGUN	0.081111	0.374001	0.291269	0.486799
PISTOL	-.096541	0.421423	0.094673	0.530682
POLATTAK	0.250057	0.308003	0.061855	0.537691
POLESCAP	0.425841	0.269689	0.248539	0.496618
POLHITOK	0.486514	0.247167	0.324775	0.478988
RIFLE	-.132953	0.429529	0.121531	0.524880
SHOTGUN	-.164638	0.438003	0.086858	0.532360

Female

Cronbach Coefficient Alpha

Variables	Alpha
Raw	-1.28720
Standardized	-.007130

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
CAPPUN	-.445303	-.572838	-.580020	0.292244
COURTS	-.444206	-.435469	-.413418	0.216131
EQWLTH	0.201995	-1.41724	0.112068	-.077951
HELPBLK	0.237243	-1.45430	0.168228	-.114801
HELPPOOR	0.082611	-1.33659	0.230576	-.157049
FEAR	-.239224	-1.06921	0.002332	-.009146
GUNLAW	-.244925	-1.03375	0.143208	-.098245
OWNGUN	-.025867	-1.37327	0.381833	-.265595
PISTOL	-.144833	-1.22001	-.009653	-.001881
POLATTAK	-.392325	-.712563	-.365367	0.192760
POLESCAP	-.105276	-1.25214	-.027788	0.009019
POLHITOK	0.038132	-1.42400	0.222921	-.151785
RIFLE	-.164507	-1.19669	0.231809	-.157898
SHOTGUN	-.163499	-1.19523	0.173951	-.118619

Family

Male

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.243464
Standardized	-1.88805

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
CHLDMORE	-.765895	0.562565	-.484549	-.706291
CHLDIDEL	0.631253	-.924991	-.525312	-.525622
CHLDNUM	-.609383	0.397530	-.360331	-1.39582
FAMGEN	0.767025	-2.40403	-.343572	-1.50787

Female

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.297207
Standardized	-.595916

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
CHLDMORE	-.523732	0.590392	-.131426	-.593155
CHLDIDEL	0.600628	-.601498	-.325831	-.068996
CHLDNUM	-.504689	0.400485	-.215846	-.345328
FAMGEN	0.729480	-1.63292	-.106951	-.671408

Federal Government Responsibility

Male

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.631403
Standardized	0.489303

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
NATARMS	0.470184	0.555030	0.479428	0.358335
NATCITY	0.902886	0.467414	0.831410	0.204006
NATCRIME	-.724446	0.759997	-.709789	0.717835
NATDRUG	0.615447	0.508908	0.541613	0.332896
NATEDUC	0.730794	0.470830	0.664480	0.280365
NATENVIR	0.830376	0.456143	0.737284	0.247782
NATFARE	-.277343	0.713989	-.262032	0.608004
NATHEAL	0.618633	0.530621	0.630432	0.295228
NATSPAC	-.306441	0.706609	-.318994	0.623502

Female

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.659017
Standardized	0.512806

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
NATARMS	0.537836	0.580998	0.511497	0.380683
NATCITY	0.877895	0.510199	0.724882	0.294654
NATCRIME	-.747477	0.793166	-.684316	0.726349
NATDRUG	0.734893	0.513895	0.583128	0.352747
NATEDUC	0.809286	0.481026	0.677644	0.314434
NATENVIR	0.797535	0.496640	0.647291	0.326920
NATFARE	-.216421	0.712301	-.175120	0.604479
NATHEAL	0.552265	0.586513	0.613846	0.340478
NATSPAC	-.330121	0.738940	-.274152	0.630819

Feminism

Male

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.914288
Standardized	0.934132

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
FEFAM	0.705328	0.957854	0.696106	0.960403
FEHOME	0.989429	0.824348	0.986264	0.866461
FEPRES	0.731371	0.915531	0.768500	0.938203
FEWORK	0.925610	0.859393	0.944513	0.880807

Female

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.941759
Standardized	0.954945

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
FEFAM	0.771709	0.969150	0.768949	0.976014
FEHOME	0.990868	0.882508	0.989049	0.910273
FEPRES	0.873446	0.919791	0.895647	0.939009
FEWORK	0.903556	0.925275	0.912451	0.933931

Labor

Male

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.156361
Standardized	0.249402

Cronbach Coefficient Alpha with Deleted Variable

Deleted Variable	Raw Variables: Correlation with Total	Raw Variables: Alpha	Standardized Variables: Correlation with Total	Standardized Variables: Alpha
JOBFIND	0.349886	0.055609	0.229396	0.146242
JOBLOSE	0.214055	0.007483	0.328383	0.083888
JOBMEANS	0.163496	0.088348	0.113649	0.214662
JOBSEC	0.123871	0.077533	0.266814	0.123097
MEMUNION	0.182250	0.056519	0.161432	0.186990
RICHWORK	0.667958	-.199014	0.660902	-.153429
UNEMP	0.356010	-.042529	0.341635	0.075263
UNION	-.245789	0.398146	-.153043	0.355107
WKSUBS	-.712247	0.470687	-.734036	0.589843

Female

Cronbach Coefficient Alpha

Variables	Alpha
Raw	-.136099
Standardized	-.078444

Cronbach Coefficient Alpha with Deleted Variable

Deleted Variable	Raw Variables: Correlation with Total	Raw Variables: Alpha	Standardized Variables: Correlation with Total	Standardized Variables: Alpha
JOBFIND	-.015901	-.135278	0.086609	-.171435
JOBLOSE	-.190561	0.018297	0.119366	-.203420
JOBMEANS	0.248930	-.351116	-.066207	-.031902
JOBSEC	0.226160	-.489291	0.070548	-.156027
MEMUNION	-.040512	-.131427	-.077210	-.022449
RICHWORK	0.260076	-.295936	0.387648	-.495158
UNEMP	0.408469	-.376419	0.358847	-.461183
UNION	-.290779	0.185983	0.002830	-.093006
WKSUBS	-.592892	0.162866	-.752652	0.428493

Lifestyle & Socio-political Participation

Male

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.855842
Standardized	0.850309

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
DRINK	-.888651	0.919636	-.872574	0.915192
LIFE	0.372781	0.853798	0.404693	0.846293
MEMGREEK	0.876307	0.818812	0.851443	0.816344
MEMHOBBY	0.846436	0.821592	0.819514	0.818596
MEMPOLIT	0.877436	0.819096	0.851147	0.816365
MEMPROF	0.872653	0.824248	0.842362	0.816986
MEMSCHL	0.868620	0.821373	0.838984	0.817225
MEMSPORT	0.887959	0.829449	0.851818	0.816317
MEMSERV	0.881970	0.821815	0.852627	0.816260
SOCBAR	0.643043	0.854260	0.625913	0.831877
SOCFREND	0.217973	0.867868	0.287587	0.853605
SOCOMMUN	-.192596	0.869178	-.219725	0.882863
TVHOURS	0.913743	0.811156	0.926019	0.811016

Female

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.896175
Standardized	0.846631

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
DRINK	-.876164	0.926857	-.837220	0.911048
LIFE	0.413253	0.896676	0.483681	0.836976
MEMGREEK	0.918831	0.870691	0.858642	0.810924
MEMHOBBY	0.908240	0.873006	0.849609	0.811580
MEMPOLIT	0.921028	0.870454	0.863073	0.810601
MEMPROF	0.904046	0.872261	0.837157	0.812483
MEMSCHL	0.896991	0.875910	0.826460	0.813256
MEMSPORT	0.919090	0.875031	0.853175	0.811321
MEMSERV	0.911497	0.871915	0.849854	0.811562
SOCBAR	0.429550	0.898960	0.446093	0.839455
SOCFREND	0.335428	0.899669	0.408837	0.841889
SOCOMMUN	-.401878	0.914224	-.349147	0.886646
TVHOURS	0.906800	0.872370	0.900392	0.807871

Politics

Male

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.459775
Standardized	0.587249

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
ANOMIA7	0.079489	0.470018	0.144998	0.604291
COMMUN	0.292691	0.408473	0.375603	0.523551
NATAID	-.435258	0.751811	-.373793	0.752620
PARTYID	0.138471	0.465894	0.157583	0.600136
POLVIEWS	0.827823	0.175124	0.801963	0.346519
USINTL	0.778558	0.155228	0.732020	0.378192
USUN	0.600968	0.142857	0.592953	0.438031

Female

Cronbach Coefficient Alpha

Variables	Alpha
Raw	-.434437
Standardized	0.031404

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
ANOMIA7	0.338952	-1.06634	0.316338	-.297951
COMMUN	-.232814	-.221625	-.144267	0.164706
NATAID	-.301365	0.009147	-.206550	0.215127
PARTYID	-.643860	0.204147	-.557520	0.454587
POLVIEWS	0.502049	-.835542	0.472112	-.495068
USINTL	0.491040	-.987607	0.411976	-.416303
USUN	-.144848	-.338066	0.139935	-.100768

Race & Ethnicity

Male

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.783633
Standardized	0.772856

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
BUSING	0.721376	0.730022	0.651492	0.730056
NATRACE	0.112051	0.792311	0.150857	0.784011
RACCLOS	0.409710	0.774828	0.476061	0.749905
RACDIS	0.413501	0.773219	0.487213	0.748674
RACFEW	0.009464	0.809139	-.047748	0.803208
RACINTEG	0.352825	0.776234	0.354301	0.763075
RACMAR	0.778926	0.716950	0.734182	0.720334
RACMOST	0.330447	0.779661	0.373473	0.761034
RACOPEN	0.795285	0.713794	0.690472	0.725503
RACPRES	0.085006	0.799466	0.150057	0.784091
RACSEG	0.730338	0.729586	0.684471	0.726207
SPKRAC	0.434618	0.773021	0.315068	0.767216

Female

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.779072
Standardized	0.821131

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
BUSING	0.586085	0.743305	0.587269	0.798165
NATRACE	0.027685	0.800703	0.049739	0.841695
RACCLOS	0.468824	0.769442	0.560003	0.800535
RACDIS	0.482591	0.763986	0.587531	0.798142
RACFEW	-.259540	0.836976	-.228216	0.861704
RACINTEG	0.481728	0.762950	0.529550	0.803161
RACMAR	0.826411	0.699809	0.767932	0.782003
RACMOST	0.693537	0.751478	0.682324	0.789762
RACOPEN	0.827047	0.704647	0.769404	0.781868
RACPRES	0.259498	0.784405	0.283041	0.823613
RACSEG	0.732871	0.725182	0.669349	0.790922
SPKRAC	0.645211	0.762233	0.571660	0.799524

Religion

Male

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.557335
Standardized	0.491095

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
ATTEND	0.896454	0.315490	0.918385	0.129478
CONCLERG	0.738946	0.349407	0.659061	0.265299
FUND	0.563183	0.410988	0.588334	0.299444
LETDIE1	0.883817	0.308326	0.787291	0.200266
MEMCHURCH	-.663440	0.727162	-.633700	0.724642
POSTLIFE	-.770824	0.767014	-.768543	0.755901
RELITEN	0.495409	0.498289	0.550079	0.317413
SUICIDE1	0.661726	0.297906	0.593176	0.297145

Female

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.672639
Standardized	0.553104

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
ATTEND	0.812851	0.557330	0.792292	0.315491
CONCLERG	0.744063	0.534661	0.640294	0.379710
FUND	0.634115	0.579364	0.689392	0.359465
LETDIE1	0.899470	0.489929	0.744870	0.336019
MEMCHURCH	-.333099	0.723225	-.340215	0.695583
POSTLIFE	-.678559	0.818114	-.694004	0.774775
RELITEN	0.203258	0.674180	0.259633	0.521365
SUICIDE1	0.774586	0.491971	0.661274	0.371117

Tolerance & Permissiveness

Male

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.517974
Standardized	0.620371

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
GRASS	-.158491	0.600175	-.180800	0.701382
HOMOSEX	0.430163	0.399146	0.431079	0.558768
PORNINF	0.817983	0.297528	0.716598	0.477914
PORNLAW	-.041351	0.604938	0.029453	0.656761
PORNMORL	0.093690	0.519931	0.223789	0.611530
PORNOUT	0.744451	0.367143	0.809444	0.449465
PORNRAPE	0.389317	0.481560	0.465799	0.549454
PREMARSX	0.128471	0.526645	0.132697	0.633226
XMOVIE	0.235361	0.490220	0.277886	0.598222

Female

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.791275
Standardized	0.826938

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
GRASS	0.425018	0.780603	0.396661	0.824491
HOMOSEX	0.822976	0.707046	0.784761	0.778677
PORNINF	0.880554	0.716274	0.813725	0.775020
PORNLAW	0.320347	0.789347	0.354067	0.829170
PORNMORL	0.286268	0.792164	0.351454	0.829455
PORNOUT	0.820952	0.748467	0.857904	0.769376
PORNRAPE	0.636871	0.766594	0.713371	0.787547
PREMARSX	0.349711	0.791667	0.379328	0.826403
XMOVIE	0.212462	0.818409	0.206298	0.844888

Appendix 17.3 Reliability Test

Categorization of Casual vs. Formal

Below are the items for Men’s & Boy's and Women’s & Junior's apparel excluding little boys’, little girls' and infants'.
Items are only outerwear, excluding night wear, nightgowns, and underwear.
Please read carefully the definition of casual and formal wear for this study and check either Casual or Formal whichever you think it belongs to by the definition.

Definition of Casual wear

Appropriate for wear or use in an informal occasion.

- Attire that fits for *corporate casual, business casual.* You feel comfortable and relaxed when working but it should be appropriate for meeting clients.
- Attire that can be worn for leisure outings such as spectator sports, tennis, golf, dancing, etc.
- Attire that can be worn for blue-collar work.
- Attire that can be worn for light social, casual meeting, casual dinner.

Definition of Formal wear

Appropriate for wear or use on a formal occasions.

- Attire that can be worn for a wedding, cocktail party, formal reception and formal party, etc.
- Attire that can be worn for formal business meetings e.g. business dinner, business presentation, and business conference.
- Attire that can be worn when formal wear is required e.g. restaurant, theater, and show, etc.

Explanation of Terms

Men's and Boys':

Tailored Suits – Includes formal suits and tailored uniforms. Exclude casual suits, ski and snow suits, and boys’ wash suits.

Tailored Uniform Suits – Includes military, guards, band, police, fire, etc. Non-tailored work-type suits, such as delivery drivers and gas station attendants, are included under work clothing and washable service apparel.

Casual (non-tailored) Suits – Includes ‘leisure’ and ‘soft’ suits. Exclude tailored uniform suits as well as ski, snow, and non-tailored work-type uniform suits.

Tailored Suit-Type Sportcoats and Jackets – Includes only tailored separate suit-type coats including tailored uniform and separate formal jackets.

Casual (non-tailored) Suit-Type Jackets – Includes ‘leisure’ and ‘soft’ suit-type separate jackets.

Overcoats, Topcoats, and Tailored Suburban, Car, and Sormcoats – Includes only tailored items, including uniform, reversible, zipper-lined, fingertip, and wool water-repellent coats. Excludes raincoats.

Raincoats – Includes waterproof outercoats and water-repellant coats of cotton and manmade fibers, including uniforms. Wool and chiefly wool water-repellant coats and capes are included with overcoats, topcoats, and tailored suburban, car, and stormcoats.

Heavy Non-tailored Outer Jackets, Including Uniform – Includes lumberjackets, mackinaws, etc. Exclude ski jackets.

Light Non-tailored Outer Jackets, Including Uniform – Includes golf-type zip front, snorkel jackets, etc. for outdoor outerwear.

Separate Vests, Including Uniform – Includes vests not part of suits. Excludes sweater vests.

Separate Dress and Sport Trousers, Including Uniform – Includes all pants except jeans, jean-cut casuals, dungarees, and work pants.

Jeans and Dungarees – Includes all pants of jean-type construction while are made from denim fabric. Exclude waistband overalls.

Jean-cut Casual Slacks – Includes all pants of jean-type construction made from fabric other than denim to be worn as sportswear, i.e., corduroy, etc.

Dress Shorts or Walking Shorts – Includes short pants above the knee with the same construction as dress and sport trousers or jean-cut casual slacks and jeans. Exclude underwear shorts or athletic shorts and jogging shorts.

Dress and Business Shirts – Includes open front shirts designed primarily for dress or business wear, usually with a collar band. Sleeve length may or may not be sized in inches.

Sport Shirts – Includes open front or pullover shirts designed primarily for sport, leisure, or casual wear. Also include polo shirts and T-shirts made as outerwear. Excludes sweatshirts.

Workpants, Excluding Jeans and Dungarees – Includes utility trousers in a sturdy fabric designed for hard wear and work with closed seam construction and a waistband in the same fabric as the shell. Also include waistband overalls.

Work Shirts – Includes open front or pullover shirts in a sturdy fabric, designed for work and ease of movement.

Washable Service Apparel – Includes non-tailored washable work apparel designed for use by waiters, gas station attendants, hospital staff, and other uniformed service workers.

Overall and Work-Type Jackets – Includes utility jackets in a sturdy fabric, designed for hard work and ease or movement, usually with closed seam construction.

Uniform Work Shirts – Includes shirts made for wear as part of a uniform.

Team Sports Uniform - Clothing designed to be worn as a uniform in team athletic games, such as baseball, football, soccer, and hockey.

Women's and Junior's:

Suits - Includes tailored suits and uniforms but excludes pantsuits, jumpsuits, and coordinate suit sets that can be purchased as separate pieces, e.g., shirt, vest, blouse, and pants. Excludes nurses', maids' and medical uniforms which are included in washable service apparel.

Pantsuits - Includes jumpsuits and pantsuits sold as a unit. Excludes coordinates which are sold as separates.

Dresses - Includes suit-type dresses, formal, work, house, etc.

Coats and capes - Includes toppers, car coats, suburban coats, plastic coats, reversible coats, and wool water-repellent coats, but excludes raincoats.

Jeans and dungarees - Includes all pants of Jean-type construction that are made from denim fabric.

Slacks, including Jean-cut casuals - Includes all pants other than denim jeans, e.g., tailored pants and pants with an elastic waistband.

Men/Women	***Item***	***Casual***	***Formal***
Men's	Regular-weight suits except uniforms		
	Light-weight suits except uniforms		
	Casual (non-tailored) suits		
	Uniform suits		
	Overcoats, except uniform		
	Topcoats, except uniform		
	Uniform overcoats, and topcoats		
	Tailored suburban and car coats, including storm coats		
	Tailored separate suit type dress and sport coats		
	Casual (non-tailored) sport coats		
	Down and feather filled coats, jackets, and vests		
	Raincoats		
	Uniform separate coats and jackets		
	Separate vests, excluding sweater vests		
	Dress and business shirts except work shirts		
	Woven sport shirts, except knit outerwear sport shirts		
	Knit outerwear sport shirts, excluding sweatshirts		
	Uniform shirts		
	Sweaters, knit cardigans, and pullovers		
	Separate dress and sport trousers, except uniform		
	Uniform dress trousers		
	Jean-cut casual slacks		
	Dungarees and Jeans		
	Shorts, excluding athletic shorts		
	Heavy non-tailored outer jackets, except uniform		
	Light non-tailored outer jackets, except uniform		
	Uniform non-tailored outer jackets		
	Athletic shorts including jogging shorts and tennis shorts		
	Sweatshirts		
	Sweatpants		
	Warm-up or jogging suits		
	Swimsuits		
	Team sports uniform		
	Ski wear, including jackets and pants		
	Work pants and waistband overalls except on State and Federal Government contract		
	Work pants made on State and Federal Government contract		
	Bib overalls		
	One piece work suits and coveralls, except waterproof and flight clothing		
	Washable service apparel		
	Overall and work-type jackets		
	Work shirts		

Men/Women	*Item*	*Casual*	*Formal*
Women's	Dresses		
	Fur trimmed coats and capes		
	Untrimmed coats and capes		
	Down and feather filled coats, jackets, and vests		
	Raincoats		
	Suits, excluding pants and uniform		
	Pant suits, including jumpsuits		
	Uniform suits		
	Woven blouses and shirts		
	Sweater shirts		
	Coat and cardigan sweaters		
	Knit outerwear sport shirts		
	Pullover sweaters and jerseys		
	Skirts		
	Separate tailored suit type jackets		
	Non-tailored outer jackets		
	Padded jacket vests and coat vests		
	Vests, excluding sweater vests		
	Dungarees and jeans		
	Jean-cut casual slacks		
	Slacks		
	Playshorts, pedal pushers, Bermudas, and Jamaicas		
	Other playgarments, including playsuits, beachtops, and halters		
	Washable service apparel		
	Swimsuits		
	Warm-up or jogging suits		
	Sweatshirts		
	Ski wear, including jackets and pants		
	Team sports uniform		
	Body suits and body shirts		

Appendix 17.4 Analytical Results of Stepwise Regression for Theory-Based Casual Index Based on GSS

Men's Unit Volume

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	0.04284	0.04284	34.94	<.0001
Error	24	0.02942	0.00123		
Corrected Total	25	0.07227			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.26827	0.01661	0.31968	260.75	<.0001
Race	0.00066967	0.00011329	0.04284	34.94	<.0001

Bounds on condition number: 1, 1

Stepwise Selection: Step 2

Variable Labor Entered: R-Square = 0.7295 and C(p) = 13.1637

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	0.05272	0.02636	31.02	<.0001
Error	23	0.01954	0.00084977		
Corrected Total	25	0.07227			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.10409	0.05010	0.00367	4.32	0.0491
Labor	-0.00058790	0.00017242	0.00988	11.63	0.0024
Race	0.00050558	0.00010588	0.01937	22.80	<.0001

Men quantity general social behavior index

The REG Procedure
Model: MODEL1
Dependent Variable: Yq

Stepwise Selection: Step 2

Bounds on condition number: 1.2603, 5.0414

Stepwise Selection: Step 3

Variable Civil Entered: R-Square = 0.7603 and C(p) = 11.3983

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	0.05494	0.01831	23.25	<.0001
Error	22	0.01733	0.00078753		
Corrected Total	25	0.07227			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.07624	0.05100	0.00176	2.23	0.1492
Civil	0.00022402	0.00013345	0.00222	2.82	0.1074
Labor	-0.00069801	0.00017848	0.01205	15.30	0.0007
Race	0.00021302	0.00020191	0.00087658	1.11	0.3029

Bounds on condition number: 4.9452, 31.53

Stepwise Selection: Step 4

Variable Race Removed: R-Square = 0.7481 and C(p) = 10.8857

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	0.05406	0.02703	34.16	<.0001
Error	23	0.01820	0.00079140		
Corrected Total	25	0.07227			

Men quantity general social behavior index

The REG Procedure
Model: MODEL1
Dependent Variable: Yq

Stepwise Selection: Step 4

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.04416	0.04105	0.00091600	1.16	0.2932
Civil	0.00034556	0.00006754	0.02072	26.18	<.0001
Labor	-0.00079793	0.00015165	0.02191	27.69	<.0001

Bounds on condition number: 1.0469, 4.1874

Stepwise Selection: Step 5

Variable CONFIDENCE Entered: R-Square = 0.8131 and C(p) = 4.9119

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	0.05876	0.01959	31.91	<.0001
Error	22	0.01350	0.00061377		
Corrected Total	25	0.07227			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.07203	0.03752	0.00226	3.68	0.0680
Civil	0.00053416	0.00009046	0.02140	34.87	<.0001
CONFIDENCE	-0.00028531	0.00010311	0.00470	7.66	0.0112
Labor	-0.00041100	0.00019336	0.00277	4.52	0.0450

Bounds on condition number: 2.9911, 22.822

All variables left in the model are significant at the 0.1500 level.

No other variable met the 0.1500 significance level for entry into the model.
Men quantity general social behavior index

The REG Procedure
Model: MODEL1
Dependent Variable: Yq

Summary of Stepwise Selection

Variable Entered	Variable Removed	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Step Pr > F
Race		1	0.5928	0.5928	27.9272	34.94	<.0001
Labor		2	0.1367	0.7295	13.1637	11.63	0.0024
Civil		3	0.0307	0.7603	11.3983	2.82	0.1074
	Race	2	0.0121	0.7481	10.8857	1.11	0.3029
CONFIDENCE		3	0.0650	0.8131	4.9119	7.66	0.0112

Men's Dollar Values

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	0.28711	0.28711	67.29	<.0001
Error	24	0.10240	0.00427		
Corrected Total	25	0.38951			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.26537	0.02353	0.54255	127.16	<.0001
Lifestyle	0.00091331	0.00011134	0.28711	67.29	<.0001

Bounds on condition number: 1, 1

Stepwise Selection: Step 2

Variable CONFIDENCE Entered: R-Square = 0.8091 and C(p) = 15.3637

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	0.31514	0.15757	48.73	<.0001
Error	23	0.07437	0.00323		
Corrected Total	25	0.38951			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.10413	0.05847	0.01026	3.17	0.0881
CONFIDENCE	-0.00042337	0.00014379	0.02803	8.67	0.0073
Lifestyle	0.00101	0.00010184	0.31512	97.46	<.0001

Men dollar general social behavior index

The REG Procedure
Model: MODEL1
Dependent Variable: yv

Stepwise Selection: Step 2

Bounds on condition number: 1.1041, 4.4166

Stepwise Selection: Step 3

Variable Family Entered: R-Square = 0.8681 and C(p) = 6.4321

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	0.33813	0.11271	48.26	<.0001
Error	22	0.05138	0.00234		
Corrected Total	25	0.38951			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.41101	0.10971	0.03278	14.04	0.0011
CONFIDENCE	-0.00075361	0.00016128	0.05099	21.83	0.0001
Family	0.00058697	0.00018709	0.02299	9.84	0.0048
Lifestyle	0.00007200	0.00030984	0.00012612	0.05	0.8184

Bounds on condition number: 16.872, 98.832

Stepwise Selection: Step 4

Variable Lifestyle Removed: R-Square = 0.8678 and C(p) = 4.4921

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	0.33801	0.16900	75.47	<.0001
Error	23	0.05151	0.00224		
Corrected Total	25	0.38951			

Men dollar general social behavior index

The REG Procedure
Model: MODEL1
Dependent Variable: yv

Stepwise Selection: Step 4

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.43466	0.04007	0.26354	117.68	<.0001
CONFIDENCE	-0.00077466	0.00013067	0.07870	35.14	<.0001
Family	0.00062871	0.00005118	0.33798	150.92	<.0001

Bounds on condition number: 1.3166, 5.2665

Stepwise Selection: Step 5

Variable Civil Entered: R-Square = 0.8804 and C(p) = 4.1548

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	0.34292	0.11431	53.98	<.0001
Error	22	0.04659	0.00212		
Corrected Total	25	0.38951			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.42208	0.03983	0.23780	112.29	<.0001
Civil	0.00051009	0.00033481	0.00492	2.32	0.1419
CONFIDENCE	-0.00083336	0.00013279	0.08341	39.39	<.0001
Family	0.00044709	0.00012919	0.02536	11.98	0.0022

Stepwise Selection: Step 6

Variable Politics Entered: R-Square = 0.8952 and C(p) = 3.4057

Men dollar general social behavior index

The REG Procedure
Model: MODEL1
Dependent Variable: yv

Stepwise Selection: Step 6

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	0.34870	0.08718	44.86	<.0001
Error	21	0.04081	0.00194		
Corrected Total	25	0.38951			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.58580	0.10231	0.06372	32.79	<.0001
Civil	0.00057827	0.00032315	0.00622	3.20	0.0880
CONFIDENCE	-0.00087796	0.00012980	0.08891	45.75	<.0001
Family	0.00060070	0.00015247	0.03016	15.52	0.0008
Politics	0.00071259	0.00041314	0.00578	2.97	0.0993

Bounds on condition number: 13.467, 125.81

All variables left in the model are significant at the 0.1500 level.

No other variable met the 0.1500 significance level for entry into the model.

Summary of Stepwise Selection

Step	Variable Entered	Variable Removed	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	Lifestyle		1	0.7371	0.7371	26.6937	67.29	<.0001
2	CONFIDENCE		2	0.0720	0.8091	15.3637	8.67	0.0073
3	Family		3	0.0590	0.8681	6.4321	9.84	0.0048
4		Lifestyle	2	0.0003	0.8678	4.4921	0.05	0.8184
5	Civil		3	0.0126	0.8804	4.1548	2.32	0.1419
6	Politics		4	0.0148	0.8952	3.4057	2.97	0.0993

Women's Unit Volume

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	0.30545	0.30545	61.63	<.0001
Error	24	0.11895	0.00496		
Corrected Total	25	0.42440			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.78771	0.02872	3.72811	752.19	<.0001
Race	0.00127	0.00016216	0.30545	61.63	<.0001

Bounds on condition number: 1, 1

Stepwise Selection: Step 2

Variable abortion Entered: R-Square = 0.9046 and C(p) = 24.8279

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	0.38393	0.19196	109.08	<.0001
Error	23	0.04047	0.00176		
Corrected Total	25	0.42440			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.57558	0.03608	0.44780	254.47	<.0001
abortion	-0.00070530	0.00010561	0.07848	44.60	<.0001
Race	0.00130	0.00009669	0.31646	179.83	<.0001

women quantity general social behavior index

The REG Procedure
Model: MODEL1
Dependent Variable: Yq

Stepwise Selection: Step 2

Bounds on condition number: 1.0013, 4.0054

Stepwise Selection: Step 3

Variable Labor Entered: R-Square = 0.9260 and C(p) = 16.7847

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	0.39299	0.13100	91.76	<.0001
Error	22	0.03141	0.00143		
Corrected Total	25	0.42440			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.46212	0.05552	0.09889	69.27	<.0001
abortion	-0.00057123	0.00010899	0.03922	27.47	<.0001
Labor	-0.00053716	0.00021313	0.00907	6.35	0.0195
Race	0.00137	0.00009165	0.31834	223.00	<.0001

Bounds on condition number: 1.4341, 11.573

Stepwise Selection: Step 4

Variable Federal Entered: R-Square = 0.9382 and C(p) = 13.0449

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	0.39818	0.09954	79.71	<.0001
Error	21	0.02622	0.00125		
Corrected Total	25	0.42440			

women quantity general social behavior index

The REG Procedure

Model: MODEL1

Dependent Variable: Yq

Stepwise Selection: Step 4

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.40550	0.05890	0.05919	47.39	<.0001
abortion	-0.00027736	0.00017664	0.00308	2.47	0.1313
Federal	-0.00018661	0.00009160	0.00518	4.15	0.0544
Labor	-0.00074594	0.00022414	0.01383	11.08	0.0032
Race	0.00136	0.00008587	0.31242	250.19	<.0001

Bounds on condition number: 3.947, 39.8

Stepwise Selection: Step 5

Variable Religion Entered: R-Square = 0.9446 and C(p) = 12.0381

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	0.40089	0.08018	68.21	<.0001
Error	20	0.02351	0.00118		
Corrected Total	25	0.42440			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.34885	0.06823	0.03073	26.14	<.0001
abortion	-0.00024300	0.00017286	0.00232	1.98	0.1751
Federal	-0.00025669	0.00010012	0.00773	6.57	0.0185
Labor	-0.00084890	0.00022777	0.01633	13.89	0.0013
Race	0.00115	0.00016158	0.05931	50.46	<.0001
Religion	0.00025932	0.00017064	0.00271	2.31	0.1442

Bounds on condition number: 4.8045, 94.506

Stepwise Selection: Step 6

women quantity general social behavior index

The REG Procedure

Model: MODEL1

Dependent Variable: Yq

Stepwise Selection: Step 6

Variable abortion Removed: R-Square = 0.9391 and C(p) = 12.6109

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	0.39857	0.09964	81.00	<.0001
Error	21	0.02583	0.00123		
Corrected Total	25	0.42440			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.31349	0.06488	0.02872	23.35	<.0001
Federal	-0.00036632	0.00006423	0.04001	32.52	<.0001
Labor	-0.00105	0.00018105	0.04141	33.66	<.0001
Race	0.00112	0.00016445	0.05755	46.79	<.0001
Religion	0.00029070	0.00017306	0.00347	2.82	0.1078

Bounds on condition number: 4.7223, 46.412

All variables left in the model are significant at the 0.1500 level.

No other variable met the 0.1500 significance level for entry into the model.

Summary of Stepwise Selection

Step	Variable Entered	Variable Removed	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	Race		1	0.7197	0.7197	109.747	61.63	<.0001
2	abortion		2	0.1849	0.9046	24.8279	44.60	<.0001
3	Labor		3	0.0214	0.9260	16.7847	6.35	0.0195
4	Federal		4	0.0122	0.9382	13.0449	4.15	0.0544
5	Religion		5	0.0064	0.9446	12.0381	2.31	0.1442
6		abortion	4	0.0055	0.9391	12.6109	1.98	0.1751

Women's Dollar Values

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	0.27774	0.27774	48.27	<.0001
Error	24	0.13811	0.00575		
Corrected Total	25	0.41585			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.90353	0.03095	4.90504	852.39	<.0001
Race	0.00121	0.00017473	0.27774	48.27	<.0001

Bounds on condition number: 1, 1

Stepwise Selection: Step 2

Variable CONFIDENCE Entered: R-Square = 0.9064 and C(p) = 25.6015

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	0.37692	0.18846	111.33	<.0001
Error	23	0.03893	0.00169		
Corrected Total	25	0.41585			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.52672	0.05201	0.17361	102.56	<.0001
CONFIDENCE	-0.00086767	0.00011336	0.09917	58.59	<.0001
Race	0.00102	0.00009813	0.18253	107.83	<.0001

women dollar general social behavior index

The REG Procedure
Model: MODEL1
Dependent Variable: yv

Stepwise Selection: Step 2

Bounds on condition number: 1.0722, 4.2888

Stepwise Selection: Step 3

Variable abortion Entered: R-Square = 0.9207 and C(p) = 20.6377

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	0.38286	0.12762	85.11	<.0001
Error	22	0.03299	0.00150		
Corrected Total	25	0.41585			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.53430	0.04910	0.17756	118.42	<.0001
abortion	-0.00026897	0.00013508	0.00595	3.97	0.0590
CONFIDENCE	-0.00066393	0.00014782	0.03025	20.17	0.0002
Race	0.00107	0.00009637	0.18616	124.16	<.0001

Bounds on condition number: 2.0583, 15.444

Stepwise Selection: Step 4

Variable Social Entered: R-Square = 0.9536 and C(p) = 6.6217

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	0.39654	0.09913	107.79	<.0001
Error	21	0.01931	0.00091970		
Corrected Total	25	0.41585			

women dollar general social behavior index

The REG Procedure
Model: MODEL1
Dependent Variable: yv

Stepwise Selection: Step 4

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.50655	0.03912	0.15419	167.65	<.0001
abortion	-0.00057343	0.00013201	0.01735	18.87	0.0003
CONFIDENCE	-0.00071622	0.00011656	0.03472	37.76	<.0001
Social	0.00120	0.00031125	0.01367	14.87	0.0009
Race	0.00052843	0.00016030	0.00999	10.87	0.0034

Bounds on condition number: 6.4038, 66.999

Stepwise Selection: Step 5

Variable Federal Entered: R-Square = 0.9634 and C(p) = 3.8090

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	0.40065	0.08013	105.40	<.0001
Error	20	0.01520	0.00076024		
Corrected Total	25	0.41585			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.51540	0.03577	0.15782	207.59	<.0001
abortion	-0.00081274	0.00015811	0.02009	26.42	<.0001
CONFIDENCE	-0.00071404	0.00010598	0.03451	45.40	<.0001

Social	0.00135	0.00029004	0.01642	21.60	0.0002
Federal	0.00015155	0.00006519	0.00411	5.40	0.0307
Race	0.00049451	0.00014647	0.00866	11.40	0.0030

Bounds on condition number: 6.7273, 109.44

Stepwise Selection: Step 6
women dollar general social behavior index

The REG Procedure
Model: MODEL1
Dependent Variable: yv

Stepwise Selection: Step 6

Variable Politics Entered: R-Square = 0.9683 and C(p) = 3.4478

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	6	0.40266	0.06711	96.68	<.0001
Error	19	0.01319	0.00069415		
Corrected Total	25	0.41585			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	-0.57197	0.04764	0.10004	144.12	<.0001
abortion	-0.00070753	0.00016321	0.01304	18.79	0.0004
CONFIDENCE	-0.00077284	0.00010698	0.03622	52.18	<.0001
Social	0.00152	0.00029468	0.01844	26.56	<.0001
Federal	0.00012909	0.00006367	0.00285	4.11	0.0569
Politics	0.00034064	0.00019989	0.00202	2.90	0.1047
Race	0.00053456	0.00014192	0.00985	14.19	0.0013

Bounds on condition number: 7.6055, 166.86

All variables left in the model are significant at the 0.1500 level.

No other variable met the 0.1500 significance level for entry into the model.

Summary of Stepwise Selection

Step	Variable Entered	Variable Removed	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	Race		1	0.6679	0.6679	139.761	48.27	<.0001
2	CONFIDENCE		2	0.2385	0.9064	25.6015	58.59	<.0001
3	abortion		3	0.0143	0.9207	20.6377	3.97	0.0590
4	Social		4	0.0329	0.9536	6.6217	14.87	0.0009
5	Federal		5	0.0099	0.9634	3.8090	5.40	0.0307
6	Politics		6	0.0048	0.9683	3.4478	2.90	0.1047

Appendix 17.5 Comparison the Results from SYSLIN and GSS

Men’s Syslin

The SAS System
The SYSLIN Procedure
Ordinary Least Squares Estimation

Model MWF
Dependent Variable MWF

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	0.154929	0.038732	46.59	<.0001
Error	21	0.017459	0.000831		
Corrected Total	25	0.172388			

Root MSE	0.02883	R-Square	0.89872
Dependent Mean	0.34346	Adj R-Sq	0.87943
Coeff Var	8.39506		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	1.510562	1.066771	1.42	0.1714
LAG3	1	-4.6E-8	1.843E-8	-2.50	0.0209
MPFL	1	-0.06820	0.061879	-1.10	0.2828
MPCL	1	0.068203	0.061879	1.10	0.2828
MM	1	-0.07481	0.079520	-0.94	0.3575
LAGT1	1	1.968E-7	4.435E-8	4.44	0.0002
RESTRICT	-1	-0.02163	0.008672	-2.49	0.0088

NOTE: Convergence criterion met at iteration 1.

The SAS System
The SYSLIN Procedure
Iterative Seemingly Unrelated Regression Estimation

Cross Model Covariance

	MWF
MWF	0.000831

Cross Model Correlation

	MWF
MWF	1.00000

Cross Model Inverse Correlation

	MWF
MWF	1.00000

Cross Model Inverse Covariance

	MWF
MWF	1202.81

System Weighted MSE	1.0000
Degrees of freedom	21
System Weighted R-Square	0.8987

Model	MWF
Dependent Variable	MWF

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	1.510562	1.066771	1.42	0.1722
LAG3	1	-4.6E-8	1.843E-8	-2.50	0.0213
MPFL	1	-0.06820	0.061879	-1.10	0.2835
MPCL	1	0.068203	0.061879	1.10	0.2835
MM	1	-0.07481	0.079520	-0.94	0.3580
LAGT1	1	1.968E-7	4.435E-8	4.44	0.0003
RESTRICT	-1	-26.0209	10.43074	-2.49	0.0086

Women's Syslin

The SAS System
The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	WWF
Dependent Variable	WWF

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	0.093894	0.023474	55.64	<.0001
Error	21	0.008859	0.000422		
Corrected Total	25	0.102754			

Root MSE	0.02054	R-Square	0.91378
Dependent Mean	0.50692	Adj R-Sq	0.89736
Coeff Var	4.05184		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	2.520020	0.785211	3.21	0.0042
LAG4	1	-4.92E-8	1.343E-8	-3.66	0.0015
WPFL	1	0.050697	0.044868	1.13	0.2713
WPCL	1	-0.05070	0.044868	-1.13	0.2713
MW	1	-0.14540	0.057626	-2.52	0.0198
LAGT3	1	1.414E-7	3.177E-8	4.45	0.0002
RESTRICT	-1	-0.01767	0.004741	-3.73	<.0001

NOTE: Convergence criterion met at iteration 1.

The SAS System
The SYSLIN Procedure
Iterative Seemingly Unrelated Regression Estimation

Cross Model Covariance

	WWF
WWF	0.000422

Cross Model Correlation

	WWF
WWF	1.00000

Cross Model Inverse Correlation

	WWF
WWF	1.00000

Cross Model Inverse Covariance

	WWF
WWF	2370.34

System Weighted MSE	1.0000
Degrees of freedom	21
System Weighted R-Square	0.9138

Model	WWF
Dependent Variable	WWF

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	2.520020	0.785211	3.21	0.0044
LAG4	1	-4.92E-8	1.343E-8	-3.66	0.0015
WPFL	1	0.050697	0.044868	1.13	0.2719
WPCL	1	-0.05070	0.044868	-1.13	0.2719
MW	1	-0.14540	0.057626	-2.52	0.0202
LAGT3	1	1.414E-7	3.177E-8	4.45	0.0002
RESTRICT	-1	-41.8929	11.23890	-3.73	<.0001

Men's OLS

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	0.15493	0.03873	46.59	<.0001
Error	21	0.01746	0.00083139		
Corrected Total	25	0.17239			

Root MSE	0.02883	R-Square	0.8987
Dependent Mean	0.34346	Adj R-Sq	0.8794
Coeff Var	8.39506		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	1.51056	1.06677	1.42	0.1714
LAG3	1	-4.60351E-8	1.843017E-8	-2.50	0.0209
MPFL	1	-0.06820	0.06188	-1.10	0.2828
MPCL	1	0.06820	0.06188	1.10	0.2828
MM	1	-0.07481	0.07952	-0.94	0.3575
LAGT1	1	1.968208E-7	4.434976E-8	4.44	0.0002
RESTRICT	-1	-0.02163	0.00867	-2.49	0.0088*

* Probability computed using beta distribution.

Women's OLS

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	0.09389	0.02347	55.64	<.0001
Error	21	0.00886	0.00042188		
Corrected Total	25	0.10275			

Root MSE	0.02054	R-Square	0.9138
Dependent Mean	0.50692	Adj R-Sq	0.8974
Coeff Var	4.05184		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	2.52002	0.78521	3.21	0.0042
LAG4	1	-4.91791E-8	1.342686E-8	-3.66	0.0015
WPFL	1	0.05070	0.04487	1.13	0.2713
WPCL	1	-0.05070	0.04487	-1.13	0.2713
MW	1	-0.14540	0.05763	-2.52	0.0198
LAGT3	1	1.41425E-7	3.176537E-8	4.45	0.0002
RESTRICT	-1	-0.01767	0.00474	-3.73	<.0001*

* Probability computed using beta distribution.

Appendix 17.6 Results from Composite Index

Men's Unit Volume

The GLM Procedure

Number of observations 27

NOTE: Due to missing values, only 26 observations can be used in this analysis.

The GLM Procedure

Dependent Variable: YQ

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	0.06184600	0.01546150	31.16	<.0001
Error	21	0.01041939	0.00049616		
Corrected Total	25	0.07226538			

R-Square	Coeff Var	Root MSE	YQ Mean
0.855818	-12.45466	0.022275	-0.178846

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Civil	1	0.03215258	0.03215258	64.80	<.0001
CONFIDENCE	1	0.02383690	0.02383690	48.04	<.0001
Labor	1	0.00277306	0.00277306	5.59	0.0278
ldm	1	0.00308346	0.00308346	6.21	0.0211

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Civil	1	0.00104750	0.00104750	2.11	0.1610
CONFIDENCE	1	0.00214693	0.00214693	4.33	0.0499
Labor	1	0.00040505	0.00040505	0.82	0.3765
ldm	1	0.00308346	0.00308346	6.21	0.0211

Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	0.0079279324	0.04655029	0.17	0.8664
Civil	0.0002186151	0.00015046	1.45	0.1610
CONFIDENCE	-.0002043351	0.00009823	-2.08	0.0499
Labor	-.0001782921	0.00019733	-0.90	0.3765
ldm	0.2587332562	0.10378743	2.49	0.0211

The GLM Procedure

Observation	Observed	Predicted	Residual	Individual	95% Confidence Limits for Predicted Value
1 *					
2	-0.29000000	-0.25977088	-0.03022912	-0.31051671	-0.20902504
3	-0.26000000	-0.24906568	-0.01093432	-0.29914556	-0.19898581
4	-0.23000000	-0.24396879	0.01396879	-0.29345067	-0.19448692
5	-0.21000000	-0.21809268	0.00809268	-0.26712080	-0.16906456
6	-0.21000000	-0.21156043	0.00156043	-0.25929236	-0.16382850
7	-0.22000000	-0.23338143	0.01338143	-0.28593887	-0.18082400
8	-0.22000000	-0.22596372	0.00596372	-0.27420685	-0.17772059
9	-0.20000000	-0.21772323	0.01772323	-0.26734455	-0.16810192
10	-0.19000000	-0.20296112	0.01296112	-0.25263298	-0.15328926
11	-0.19000000	-0.19987684	0.00987684	-0.24777507	-0.15197861
12	-0.20000000	-0.20192266	0.00192266	-0.25230166	-0.15154367
13	-0.21000000	-0.19312854	-0.01687146	-0.24056922	-0.14568786
14	-0.20000000	-0.17646389	-0.02353611	-0.22911694	-0.12381085
15	-0.26000000	-0.20363689	-0.05636311	-0.25206020	-0.15521357
16	-0.13000000	-0.19017848	0.06017848	-0.24018680	-0.14017016
17	-0.18000000	-0.18322453	0.00322453	-0.23503711	-0.13141195
18	-0.18000000	-0.16508463	-0.01491537	-0.21769158	-0.11247768
19	-0.14000000	-0.15456052	0.01456052	-0.20557422	-0.10354682
20	-0.13000000	-0.12868436	-0.00131564	-0.17884797	-0.07852075
21	-0.11000000	-0.11205412	0.00205412	-0.16304978	-0.06105846
22	-0.10000000	-0.10196670	0.00196670	-0.15343590	-0.05049749
23	-0.10000000	-0.09805135	-0.00194865	-0.15096062	-0.04514209
24	-0.12000000	-0.11949370	-0.00050630	-0.17309575	-0.06589165
25	-0.12000000	-0.11487830	-0.00512170	-0.16705216	-0.06270445
26	-0.13000000	-0.11748469	-0.01251531	-0.17007616	-0.06489322
27	-0.12000000	-0.12682183	0.00682183	-0.17785924	-0.07578443

* Observation was not used in this analysis

Sum of Residuals	0.00000000
Sum of Squared Residuals	0.01041939
Sum of Squared Residuals - Error SS	-0.00000000
PRESS Statistic	0.01486993
First Order Autocorrelation	-0.08874169
Durbin-Watson D	2.08531505

Men’s Dollar Values

The GLM Procedure

Number of observations 27

NOTE: Due to missing values, only 26 observations can be used in this analysis.

The GLM Procedure

Dependent Variable: YV

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	0.35823365	0.07164673	45.81	<.0001
Error	20	0.03127788	0.00156389		
Corrected Total	25	0.38951154			

R-Square	Coeff Var	Root MSE	YV Mean
0.919700	-9.254713	0.039546	-0.427308

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Civil	1	0.22525077	0.22525077	144.03	<.0001
CONFIDENCE	1	0.09230592	0.09230592	59.02	<.0001
Family	1	0.02536410	0.02536410	16.22	0.0007
Politics	1	0.00578126	0.00578126	3.70	0.0689
ldm	1	0.00953161	0.00953161	6.09	0.0227

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Civil	1	0.00189656	0.00189656	1.21	0.2839
CONFIDENCE	1	0.01040549	0.01040549	6.65	0.0179
Family	1	0.00276269	0.00276269	1.77	0.1988
Politics	1	0.00165246	0.00165246	1.06	0.3163
ldm	1	0.00953161	0.00953161	6.09	0.0227

Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	-.2332555873	0.16975272	-1.37	0.1846
Civil	0.0003369086	0.00030594	1.10	0.2839
CONFIDENCE	-.0004979000	0.00019303	-2.58	0.0179
Family	0.0002587357	0.00019467	1.33	0.1988
Politics	0.0004022854	0.00039136	1.03	0.3163
ldm	0.5838657416	0.23650133	2.47	0.0227

The GLM Procedure

Observation	Observed	Predicted	Residual	Individual	95% Confidence Limits for Predicted Value
1 *					
2	-0.70000000	-0.62773202	-0.07226798	-0.71799793	-0.53746612
3	-0.63000000	-0.59626116	-0.03373884	-0.68840215	-0.50412017
4	-0.56000000	-0.58552357	0.02552357	-0.67351808	-0.49752906
5	-0.54000000	-0.51784377	-0.02215623	-0.60828998	-0.42739755
6	-0.49000000	-0.53475005	0.04475005	-0.62806687	-0.44143324
7	-0.52000000	-0.53856537	0.01856537	-0.63204331	-0.44508743
8	-0.50000000	-0.52102641	0.02102641	-0.60921667	-0.43283615
9	-0.46000000	-0.50368260	0.04368260	-0.58904547	-0.41831973
10	-0.44000000	-0.47795063	0.03795063	-0.56292784	-0.39297342
11	-0.44000000	-0.46675982	0.02675982	-0.55222133	-0.38129831
12	-0.45000000	-0.47695775	0.02695775	-0.56469658	-0.38921891
13	-0.48000000	-0.45835947	-0.02164053	-0.54541934	-0.37129961
14	-0.48000000	-0.44710028	-0.03289972	-0.54440205	-0.34979850
15	-0.54000000	-0.48069946	-0.05930054	-0.56702340	-0.39437553
16	-0.44000000	-0.47988938	0.03988938	-0.57255233	-0.38722643
17	-0.46000000	-0.42311239	-0.03688761	-0.51644104	-0.32978374
18	-0.46000000	-0.41923857	-0.04076143	-0.51438611	-0.32409104
19	-0.33000000	-0.37805944	0.04805944	-0.47553452	-0.28058436
20	-0.33000000	-0.34527090	0.01527090	-0.43552946	-0.25501233
21	-0.29000000	-0.29267118	0.00267118	-0.38499724	-0.20034512
22	-0.27000000	-0.26077160	-0.00922840	-0.35461334	-0.16692986
23	-0.26000000	-0.24335891	-0.01664109	-0.33963804	-0.14707978
24	-0.24000000	-0.26894125	0.02894125	-0.36290853	-0.17497397
25	-0.25000000	-0.25770571	0.00770571	-0.35137395	-0.16403747
26	-0.28000000	-0.22878010	-0.05121990	-0.32483740	-0.13272280
27	-0.27000000	-0.27898821	0.00898821	-0.37136912	-0.18660731

* Observation was not used in this analysis

Sum of Residuals	0.00000000
Sum of Squared Residuals	0.03127788
Sum of Squared Residuals - Error SS	-0.00000000
PRESS Statistic	0.05545001
First Order Autocorrelation	0.10012594
Durbin-Watson D	1.63018906

Women's Unit Volume

The SAS System
The GLM Procedure

Number of observations 27

NOTE: Due to missing values, only 26 observations can be used in this analysis.

The SAS System
The GLM Procedure

Dependent Variable: YQ

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	0.39989037	0.07997807	65.26	<.0001
Error	20	0.02450963	0.00122548		
Corrected Total	25	0.42440000			

R-Square	Coeff Var	Root MSE	YQ Mean
0.942249	-5.933369	0.035007	-0.590000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Federal	1	0.08046014	0.08046014	65.66	<.0001
Labor	1	0.00072245	0.00072245	0.59	0.4516
Race	1	0.31391424	0.31391424	256.16	<.0001
Religion	1	0.00347086	0.00347086	2.83	0.1079
ldm	1	0.00132268	0.00132268	1.08	0.3112

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Federal	1	0.01627894	0.01627894	13.28	0.0016
Labor	1	0.01460633	0.01460633	11.92	0.0025
Race	1	0.03124502	0.03124502	25.50	<.0001
Religion	1	0.00083614	0.00083614	0.68	0.4185
ldm	1	0.00132268	0.00132268	1.08	0.3112

Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	-.2421900602	0.09435908	-2.57	0.0184
Federal	-.0003087825	0.00008472	-3.64	0.0016
Labor	-.0008685892	0.00025159	-3.45	0.0025
Race	0.0010071115	0.00019945	5.05	<.0001
Religion	0.0001713539	0.00020745	0.83	0.4185
ldm	0.1697511396	0.16339497	1.04	0.3112

The SAS System
The GLM Procedure

Observation	Observed	Predicted	Residual	Individual	95% Confidence Limits for Predicted Value
1 *					
2	-0.82000000	-0.79540213	-0.02459787	-0.87553410	-0.71527016
3	-0.78000000	-0.75916594	-0.02083406	-0.83814174	-0.68019014
4	-0.77000000	-0.76287155	-0.00712845	-0.84158375	-0.68415935
5	-0.76000000	-0.76929084	0.00929084	-0.84803756	-0.69054412
6	-0.74000000	-0.74087032	0.00087032	-0.81979515	-0.66194550
7	-0.72000000	-0.75160536	0.03160536	-0.82900391	-0.67420682
8	-0.74000000	-0.71554250	-0.02445750	-0.79225687	-0.63882813
9	-0.71000000	-0.70673031	-0.00326969	-0.78563001	-0.62783062
10	-0.68000000	-0.66874969	-0.01125031	-0.74526240	-0.59223698
11	-0.61000000	-0.62149387	0.01149387	-0.70157705	-0.54141069
12	-0.59000000	-0.57469253	-0.01530747	-0.67000866	-0.47937640
13	-0.59000000	-0.65460644	0.06460644	-0.73071404	-0.57849883
14	-0.56000000	-0.54160137	-0.01839863	-0.62558193	-0.45762081
15	-0.59000000	-0.52759091	-0.06240909	-0.60744880	-0.44773301
16	-0.53000000	-0.54156772	0.01156772	-0.62183781	-0.46129763
17	-0.52000000	-0.56420782	0.04420782	-0.65080363	-0.47761201
18	-0.44000000	-0.45351987	0.01351987	-0.53642786	-0.37061189
19	-0.47000000	-0.45451830	-0.01548170	-0.53360433	-0.37543227
20	-0.42000000	-0.45487947	0.03487947	-0.54016473	-0.36959421
21	-0.39000000	-0.45383565	0.06383565	-0.53262289	-0.37504842
22	-0.41000000	-0.42731992	0.01731992	-0.50952560	-0.34511423
23	-0.47000000	-0.40707895	-0.06292105	-0.48976348	-0.32439442
24	-0.51000000	-0.50575612	-0.00424388	-0.58706383	-0.42444840
25	-0.51000000	-0.51309379	0.00309379	-0.59428812	-0.43189946
26	-0.50000000	-0.48863685	-0.01136315	-0.56851867	-0.40875504
27	-0.51000000	-0.48537178	-0.02462822	-0.56871030	-0.40203326

* Observation was not used in this analysis

Sum of Residuals	-0.00000000
Sum of Squared Residuals	0.02450963
Sum of Squared Residuals - Error SS	-0.00000000
PRESS Statistic	0.04368230
First Order Autocorrelation	0.04154701
Durbin-Watson D	1.86747216

Women's Dollar Values

The SAS System
The GLM Procedure

Number of observations 27

NOTE: Due to missing values, only 26 observations can be used in this analysis.
The SAS System 12:07 Monday, May 21, 2001 27

The GLM Procedure

Dependent Variable: YV

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	7	0.40517472	0.05788210	97.60	<.0001
Error	18	0.01067528	0.00059307		
Corrected Total	25	0.41585000			

R-Square	Coeff Var	Root MSE	YV Mean
0.974329	-3.406021	0.024353	-0.715000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
ABORTION	1	0.06460631	0.06460631	108.94	<.0001
CONFIDENCE	1	0.13209220	0.13209220	222.73	<.0001
Social	1	0.18984386	0.18984386	320.10	<.0001
Federal	1	0.00543786	0.00543786	9.17	0.0072
Politics	1	0.00083307	0.00083307	1.40	0.2514
Race	1	0.00984780	0.00984780	16.60	0.0007
ldm	1	0.00251361	0.00251361	4.24	0.0543

Source	DF	Type III SS	Mean Square	F Value	Pr > F
ABORTION	1	0.00899659	0.00899659	15.17	0.0011
CONFIDENCE	1	0.00939839	0.00939839	15.85	0.0009
Social	1	0.01367027	0.01367027	23.05	0.0001
Federal	1	0.00181628	0.00181628	3.06	0.0971
Politics	1	0.00162569	0.00162569	2.74	0.1151
Race	1	0.00180287	0.00180287	3.04	0.0983
ldm	1	0.00251361	0.00251361	4.24	0.0543

Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	-.4103956622	0.08999269	-4.56	0.0002
ABORTION	-.0006137704	0.00015759	-3.89	0.0011
CONFIDENCE	-.0005639799	0.00014167	-3.98	0.0009
Social	0.0013594128	0.00028315	4.80	0.0001
Federal	0.0001050050	0.00006000	1.75	0.0971
Politics	0.0003070899	0.00018548	1.66	0.1151
Race	0.0003018946	0.00017315	1.74	0.0983
ldm	0.2824687854	0.13720646	2.06	0.0543

The SAS System
The GLM Procedure

Observation	bserved	Predicted	Residual	Individual	95% Confidence Limits for Predicted Value
1 *					
2	-0.87000000	-0.84445124	-0.02554876	-0.90512071	-0.78378176
3	-0.85000000	-0.83749731	-0.01250269	-0.89619184	-0.77880279
4	-0.84000000	-0.85992257	0.01992257	-0.91862528	-0.80121986
5	-0.83000000	-0.86711543	0.03711543	-0.92254581	-0.81168505
6	-0.85000000	-0.84295917	-0.00704083	-0.90045962	-0.78545871
7	-0.89000000	-0.90761589	0.01761589	-0.96561710	-0.84961468
8	-0.92000000	-0.86704386	-0.05295614	-0.92379131	-0.81029640
9	-0.86000000	-0.85282355	-0.00717645	-0.91149815	-0.79414894
10	-0.82000000	-0.80897463	-0.01102537	-0.86595980	-0.75198946
11	-0.78000000	-0.77979950	-0.00020050	-0.83402155	-0.72557744
12	-0.77000000	-0.77796283	0.00796283	-0.83758021	-0.71834545
13	-0.73000000	-0.75818305	0.02818305	-0.81867781	-0.69768830
14	-0.69000000	-0.70521697	0.01521697	-0.76595378	-0.64448016
15	-0.71000000	-0.69022431	-0.01977569	-0.74786059	-0.63258803
16	-0.76000000	-0.74671477	-0.01328523	-0.80306829	-0.69036125
17	-0.67000000	-0.68878698	0.01878698	-0.75409450	-0.62347947
18	-0.58000000	-0.60702064	0.02702064	-0.66703145	-0.54700983
19	-0.57000000	-0.59078158	0.02078158	-0.64659948	-0.53496369
20	-0.57000000	-0.58308558	0.01308558	-0.64050772	-0.52566345
21	-0.52000000	-0.51622158	-0.00377842	-0.57443875	-0.45800442
22	-0.55000000	-0.52527823	-0.02472177	-0.58197422	-0.46858225
23	-0.56000000	-0.54387225	-0.01612775	-0.60177277	-0.48597172
24	-0.64000000	-0.65007600	0.01007600	-0.71151709	-0.58863490
25	-0.64000000	-0.62876635	-0.01123365	-0.68833288	-0.56919982
26	-0.58000000	-0.56375460	-0.01624540	-0.62321931	-0.50428989
27	-0.54000000	-0.54585113	0.00585113	-0.60366885	-0.48803340

Observation was not used in this analysis

Sum of Residuals	-0.00000000
Sum of Squared Residuals	0.01067528
Sum of Squared Residuals - Error SS	0.00000000
PRESS Statistic	0.02311986
First Order Autocorrelation	0.17913751
Durbin-Watson D	1.57737303