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    DIMENSIONS OF CLOTHING INTEREST BASED ON
    FACTOR ANALYSIS OF CREEKMORE'S 1968 CLOTHING
    MEASURE.

    University of North Carolina at Greensboro,
    Ph.D., 1974
    Home Economics

DIMENSIONS OF CLOTHING INTEREST BASED

ON FACTOR ANALYSIS OF CREEKMORE'S

1968 CLOTHING MEASURE


by

Lois Morse Gurel


A Dissertation Submitted to
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GUREL, LOIS MORSE.  Dimensions of Clothing Interest Based on Factor
Analysis of Creekmore's 1968 Clothing Measure.  (1974)  Directed by:
Dr. Eunice M. Deemer.  Pp. 166.

The main objective of this research was to demonstrate construct
validity for a clothing attitude scale by investigating the underlying
dimensions of clothing interest behavior as measured by that scale.  A
secondary purpose of this study was to investigate hypothesized rela-
tionships between the clothing interest of groups differentiated by
the demographic variables of age, sex, class, college of enrollment,
and socioeconomic status.

Protocols included a clothing interest instrument, a biographi-
cal data sheet, and a measurement of social class.  Data were collected
from 500 students enrolled in a survey clothing and textiles course at
Virginia Polytechnic Institute and State University during the 1972-
1973 academic year.

A factor analysis of the clothing instrument, "The Importance
of Clothing Questionnaire" developed by Dr. Anna M. Creekmore and a
group of graduate students at Michigan State University in 1967-1968,
resulted in an extraction of eight factors.  These eight factors were
interpreted to represent the basic dimensions of clothing interest as
measured by the instrument.  A panel of clothing and textiles personnel
assisted in providing titles for these factors.  The eight factors were
labeled:  personal appearance, experimentation with clothing, confor-
mity, modesty, psychological awareness, self-concept, fashion interest,
and comfort.

The statistically derived factor scores were compared to the
rationally derived subscale scores of the original instrument developer

by means of Pearson product moment correlations. Significant correlations between the factor scores and the subscale scores indicated strong relationships between the two sets of items.

The items assigned to factors statistically and the items assigned to subscales empirically were compared by means of phi coefficients, point biserial correlations, and the chi square test of independence. Highly significant correlations indicated strong relationships between the item assignments. The first null hypothesis, that there was no relationship between the statistically derived factors and the empirically developed constructs used to define the dimensions underlying clothing behavior was, therefore, rejected. All statistical procedures used indicated very strong relationships between the empirically derived constructs measured by Creekmore's subscales and the statistically derived constructs measured by the factors. This close proximity between factor and subscale scores and factor and subscale titles was taken as an indication of construct validity for the instrument used.

When Pearson product moment correlations were computed between the clothing interest scores of groups within the sample who differed in demographic characteristics, there were moderate relationships between clothing interest and sex and clothing interest and college of enrollment. Women scored significantly higher than men on clothing interest in general and on the specific aspects of aesthetics, modesty management, and dependence. Relationships between clothing interest and college of enrollment were also strong, indicating a higher degree of clothing interest among home economics students than among university students in general. Thus two of the five null hypotheses

pertaining to the relationship of background variables and clothing interest were rejected, those postulating relationships between clothing interest and sex and clothing interest and college of enrollment. There were no significant relationships between clothing interest and age, marital status, major in college, or socioeconomic class. The hypotheses concerning these relationships were rejected.

## ACKNOWLEDGMENTS

Special thanks are extended to Mrs. Marianne S. Beeson for advice and aid in instrument development and data collection. Further thanks and appreciation are expressed to the students who served as such willing subjects for this study, to the faculty and graduate students in the Clothing, Textiles and Related Art Department for help and encouragement in the development, execution, and completion of this study, and to my most able and patient typist, Mrs. Carolyn M. Holland.

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# CHAPTER I

## INTRODUCTION

The importance of the social and the psychological factors influencing an individual's selection and use of clothing has been more widely accepted by clothing specialists since Hartmann's challenge to the Eastern Region Conference of Teachers of Textiles and Clothing meeting in New York City in November 1948 (Hartmann, 1949). At an earlier date, however, social scientists recognized that an important clue to the understanding of one's personality may lie in the ways that personality is portrayed to the world. Psychologists and sociologists at the end of the nineteenth century (James, 1890; Hall, 1898) and the early part of the twentieth century (Simmel, 1904; Flaccus, 1906; Mead, 1934) were seeking relationships between appearance—clothing and grooming—and the overt behavior of individuals. These relationships were seen as a means of interpreting underlying personality patterns and orientations. During the first half of the twentieth century, the clothing variables studied by investigators were classified simply as "clothing behaviors."

In the past twenty years, researchers, mainly home economists, have attempted to categorize clothing behaviors into more precise concepts or areas. Thus, there have been research studies investigating clothing attitudes, clothing values, and clothing interests. Despite the number of such studies, definitive terminology has not been formulated.

Mostly through empirical analysis and occasionally through techniques such as factor analysis (Aiken, 1963; Sharpe, 1963), researchers discovered that not only could clothing behavior be categorized into a number of concepts, but that these created categories were composed of a number of factors. In order to test assumptions about clothing motivation, instruments were developed to measure the categories and factors related to clothing and various personality variables.

Research in clothing behavior is deterred due to an inadequate number of measuring instruments with demonstrated reliability, validity, and established norms for specified populations. In the area of clothing behavioral research, a great number of instruments have been devised, but few have been subjected to the stringent requirements necessary in developing a standardized test. Lack of another standardized, reliable, and valid instrument with which to validate a new one has been a problem for instrument developers in many fields. Most instruments have been used one time; in the few studies where instruments have been reused, there has not been systematic carry-over from one study to the next.

One of the major concerns in instrument development is the establishment of validity. Where no acceptable measures were available to assess clothing interest, no effort was made to validate the new measures (Creekmore, 1963, p. 49; O'Connor, 1967, p. 37; Wildes, 1968, p. 83; Risley, 1969, p. 69; Pankowski, 1969, p. 43). Occasionally attempts were made to establish face validity or consensual validity

(Sharpe, 1963; Griesman, 1965; Bissell, 1969). While measures are accepted for use with only face validity and reliability, it is not possible to be sure that they do, in fact, measure the intended factors (Wildes, 1968, p. 83).

Validity is not a monolithic concept. A joint committee of the American Psychological Association, The American Educational Research Association, and the National Council on Measurements Used In Education has identified and defined four types of validity: predictive, concurrent, content, and construct. The Englishes (1958) mention at least seventeen other types of validities; many of these are repetitive. From the point of view of scientific research, construct validity is the most important form of validity (Kerlinger, 1964) and the only one to be considered in this study.

One method of validating a new measurement, other than comparing it with validated instruments in use, is factor analysis. Factor analysis has been particularly useful in attempting to establish construct or factorial validity. Factor analysis isolates constructs. A factor, described in the simplest of terms, is a cluster of items that measure the same concept or construct; therefore, construct or factorial validity may be interpreted as different terms for a similar idea. According to Kerlinger (1964), factor analysis may be the most important tool for investigating construct validity.

Further research is hampered, also, because of a lack of definitive statements as to what is being measured and an inconsistency of terminology by researchers in the clothing and textiles area. Clothing interest is probably multidimensional, and so no one definition

can be all encompassing or serve for all time. However, research is
needed to analyze factors of clothing behavior which indicate interest
in or importance of clothing. Such research would be helpful for more
definitive explanations of closely interrelated constructs.

As well as demonstrating construct validity for an instrument,
factor analysis is also a useful procedure for uncovering the under-
lying dimensions of a broad general concept. Such a concept is that
behavior on the part of individuals that might be labeled "interest in"
or "importance of" clothing. Before measuring or defining clothing
interest these dimensions need to be identified. Factor analysis may
do this by indicating (1) how many distinctly different constructs are
a part of the whole, and (2) which items correlate with others and to
what degree. Factor analysis isolates traits (constructs or factors)
and ascertains which items measure them best (Guilford, 1965). Once
the number of dimensions has been isolated and identified, each may be
labeled and meaningful definitive statements about clothing interest
may be made.

Of the many instruments available in the clothing field for use
in such an analysis, the most suitable one for the purposes of this
investigation was the clothing measure developed by Dr. Anna M.
Creekmore and her associates in 1968.[1] This measure has been used
frequently in its original form and in revisions and refinements. It
was conceived by its authors to be multidimensional; thus, it was
already divided into subscales; comparisons between clusters of items

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on the Creekmore subscales and those clusters resulting from factor analysis seemed possible and desirable.

Therefore, the primary purpose of this research was to investigate the dimensions underlying the clothing behavior that may be labeled "importance of" or "interest in" clothing. The dimensions of clothing interest in an instrument developed by Dr. Anna M. Creekmore and her associates were isolated and identified by factor analysis in order to compare the rational constructs of the authors with statistically derived factors. Such a comparison was used to determine whether construct or factorial validity could be claimed for Creekmore's measure of clothing importance.

As a secondary purpose, this study investigated hypothesized relationships between clothing interest of groups within the sample who differed in selected demographic characteristics.

Several research studies have shown that individuals vary as to the importance placed on clothing, what they desired of clothing, and the reasons for choosing their particular items of apparel (Klaasen, 1967). These studies were conducted in the 1960's, and even the casual observer may note the rapid change of clothing norms in the last decade. Although cultural standards of dress contribute to societal order, change is inevitable. New standards constantly arise as many old ones are discarded (Roach and Eicher, 1973). "Do-your-own-thing" and "anything goes," attitudes which have been adopted by subcultural groups, have replaced the mainstream of society's conventional mores and customs as applied to clothing and grooming (Zalaznick, 1969; Reich, 1970; Johnston, 1972). What are the questions which can be

asked about these changing interests in clothing?  Is clothing of less

importance to individuals because they appear to be indifferent and

nonchalant about wearing garments usually considered "proper"?  Or is

there increased interest in clothing by such groups to provide them

with easy identification with the values and standards of the anti-

establishment subculture?  It appears that clothing behavioral research

is needed to answer these questions.  It would be informative at this

time to know whether people are interested in clothing, to what degree,

and in what specific respects.  Information necessary for future

curriculum development in the clothing and textile discipline would be

aided by answers to such questions.

## CHAPTER II

## REVIEW OF RELATED LITERATURE

A review of the literature related to this study was divided into four sections: clothing interest terminology, selected reports of research in which a clothing interest measure was used, the development of factor analysis and its use in construct validation, and reports of relationships between general clothing interest and the variables of age, sex, class, college major, curriculum, and socioeconomic status.

### Clothing Interest Terminology

Interest may be defined as "a feeling of intentness, concern, or curiosity about something (Webster's New World Dictionary)." According to Murphy, interests are ". . . dispositions defined in terms of objects which one easily and freely attends to by devoting much time to or which one regards as making a difference to oneself (Murphy, 1947, p. 989)." And to James "attention" had the same meaning.

> Attention out of all the sensations yielded, picks out certain
> ones as worthy of notice and suppresses all the rest. We
> notice only those sensations which are signs of things which
> happen to interest us, to which we therefore give substantive
> names, and which we exalt to this exclusive status of indepen-
> dence and dignity (James, 1924, p. 171).

Interests are ". . . covert emotional responses and are learned (Scheerer, 1954, p. 120)." Lewin, writing on field theory, stated that one shows interest in some goal or some thing by his attitude and

positive valence toward that thing or goal. Scheerer, believing that
interests were a very central part of a person, said that they led
". . . to his active participation in pertinent activities and content
(Scheerer, 1954, p. 121)."

Attitudes are closely related to interests and the two words are
often used interchangeably, particularly in clothing research.

> An attitude is a personal disposition common to individuals,
> but possessed to different degrees, which impels them to re-
> act to objects, situations, or propositions in ways that can
> be called favorable and unfavorable . . . through experience
> we develop favorable and unfavorable inclinations toward
> various objects and classes of objects . . . (Guilford, 1954,
> p. 457).

Interests are strongly related to intentions to act in a certain
manner. Attempts have been made to measure interests by observing
behavior or by the direct responses of individuals, even though,

> Individuals differ greatly in the range and intensity of their
> interests . . . . Obviously these differences are important
> in understanding behavior; for a person's values and interests
> not only reveal what he is but what he will be (Tiffen, et
> al., 1940, p. 92).

A link between interests and overt behavior would also include motiva-
tion. McKinney, in discussing the measurement of interests said,

> Strong interest is an aspect of motivation . . . . The in-
> dividual with the aid of a list of interests recollects the
> interests that have dominated his behavior throughout his
> life (McKinney, 1941, p. 220).

There is a correlation between ". . . what people say on a subject and
what they will do about it (Guilford, 1954, p. 457). . .," that is,

between beliefs and behavior; opinions may be used to measure attitudes and interests.

Vener's summation of interests encompasses many of the tenets espoused by the preceding authors.

> Interest is a comprehensive and ill-defined term; but it usually possesses the implication that there is some strong and persistent motive in the observer which has impelled him to observe, investigate, and acquire knowledge about some set of objects or ideas in the world around him. When we say that an observer perceives something because he is interested in such things, we imply that he is knowledgeable about them and that he is eager to perceive and learn more about them (Vener, 1957, p. 195).

Applying the above definitions of general interest to dress, clothing interest can then be described as a feeling of intentness, concern, or curiosity about clothes as well as a motivational force affecting the clothing behavior of the wearer. It can be measured by the observable behavior of people and by responses to questions about their participation in and their activities involving the use of clothing. An early study of Flugel (1929) would confirm this interrelationship between clothing interest and behavior. In studying clothing behavior he found that some people reported little or no pleasure from their clothing, others gained great pleasure not only from clothing but from thinking about clothing, and still others seemed to rebel against all forms of clothing, tolerating them only as legal necessities. Insights indicating a relationship between clothing interest and behavior were later borne out by Wass (1962) in a study of ninth grade girls. Clothing was extremely important to her sample and was frequently influential in affecting their behavior.

Clothing interest has been used as a variable with little continuity between studies; researchers have defined interest in their own way and then assumed that their scales or instruments measured the components of that definition. Several writers equated clothing interest with interest in fashion (Frost, 1968; Risley, 1969; Russell, 1971); Frost, in fact, called one of her clothing attitude categories "fashion interest." "Fashion interest, as implied through clothing, suggests the amount of time, thought, and attention given to following the latest styles and fashions, and the importance of latest fashions in the selection of clothes (Frost, 1968, p. 20)." Note the similarity between the preceding definition and that advanced by Rosencranz. Rosencranz (1948) described clothing interest as the amount of time, energy, money, thought, and attention given to clothing. Russell (1971) also defined clothing interest in terms of fashion interest and measured this interest by means of a fashion interest index indicating the degree to which an individual was aware of and accepted current fashion trends as well as individual fashion knowledge. A relationship between fashion interest and clothing interest was reported by Hoffman in 1956. Lundeen (1958) stated that a knowledge of current trends in dress was an indication of interest in clothing.

Although not directly referring to fashion, Klaasen's (1967) definition of clothing interest was similar to those stated above; to her, clothing interest meant ". . . experimenting with parts of one's costume as well as being interested in what is new on the market (p. 22)." And to Griesman (1965), clothing interest ". . . refers to the subject's perceptions of her own clothing and that of others, in wearing, making, buying, or reading (p. 7)."

Taking a slightly different tack, O'Connor (1967) defined clothing behavior as the attitudes, the beliefs, and the knowledge about clothing as well as the practices related to selection, use, and satisfaction with clothing (p. 10). Douce's (1969) ideas about clothing interest were similar to those of O'Connor in that she believed that clothing interest involved purposeful activity; Douce measured interest in clothing by the ". . . degree to which one seeks information about clothing (p. 46)."

Fetterman included many components from the preceding definitions in her description of clothing interest as ". . . the willingness to give attention, to investigate, manipulate, or experiment with the putting together of the parts of a costume (p. 13)." Bissell (1969) believed that interest referred ". . . to that which creates a feeling of concern or curiosity about something (p. 13)." And Goodman's (1969) writings stressed the degree of importance placed upon clothing as well as the attention given to clothing by the individual.

Other writers have defined clothing interest in terms of one's awareness of clothing (Vener, 1957; Wildes, 1968; Douce, 1969). That Wildes and Vener, particularly, were talking about similar clothing behaviors was likely since Wildes used the instrument developed by Vener. Their definitions of the behaviors they were measuring were similar. Wildes considered clothing awareness as ". . . a measure of the degree to which subjects considered clothing in their assessment of social situations (p. 96)." Level of sensitivity to clothing in social life was the way Vener labeled clothing awareness, attitudes and behaviors.

Confusion over terminology used to describe that behavior which might be called clothing interest is apparent in the multiplicity of definitions in the literature. Although most of them have commonalities—certain words and phrases reoccur—there is no assurance that clothing researchers are referring to similar behavioral elements, comparisons between studies are scientifically inaccurate. A summary of available descriptions of clothing interest does make possible an attempt for an encompassing definition. Thus, it can be said that clothing interest refers to the attitudes and beliefs about clothing, the knowledge of and attention paid to clothing, the concern and curiosity a person has about his own clothing and that of others. This interest may be manifested by an individual's practices in regard to clothing himself—the amount of time, energy, and money he is willing to spend on clothing; the degree to which he uses clothing in an experimental manner; and his awareness of fashion and what is new. Further research may reveal the usefulness of such a broad definition by isolating the dimensions of clothing interest that are measurable with existing instruments. Appendix A contains a paradigm of composite clothing interest definitions that are suggested in the literature review and presented in this paragraph.

<center>Clothing Interest Measures</center>

A review of instruments developed in the last 25 years to measure clothing behavior indicated that they be categorized into six groups. There have been five major contributors to this area of inquiry, and

most of the instruments can be listed under the name of the developer
of the original instrument (Rosencranz, 1948; Vener, 1957; Aiken, 1963;
Creekmore, 1963; Sharpe, 1963). Thus, five of the six groups were
composed of instruments that were borrowed from the original instrument
developer and used either intact, in part, or revised. The sixth
group of instruments consisted of a number of original interest scales
that have been used once. There was little evidence of instruments in
this latter group being used a second time. See Appendix B for a list
of the six groups of instruments.

Because of the large number of clothing interest studies in which
instruments were used, and the fact that the Creekmore (1968) measure
had already been selected for use, this review of related literature
was concerned only with the research leading up to the development of
the "Importance of Clothing Questionnaire" and its subsequent use. In
some instances instrument development or revision was the sole purpose
of reported research. In most cases, however, the instrument was used
to seek relationships between clothing interest and other variables.
In this section the studies were considered only from the point of view
of instrument development or revision.

For her doctoral dissertation, Creekmore (1963) sought a relation-
ship between clothing behaviors, general values, and strivings for
fulfillments of basic needs. The investigation was ". . . based on the
theory that needs are a motivating force to men and that in striving
to satisfy needs, values evolve which may be observed in behavior,
including those related to the use of clothing (Creekmore, 1969, p. 97)."
As a part of this research Creekmore developed a "Clothing Interest

Inventory." In its final form, after item analysis, it consisted of 130 statements divided into 14 classifications with 7 to 10 items in each behavioral measure: appearance, status symbol, management, theoretical, conformity, tactual aspects, modesty, fashion, experimentation, tool use, altruistic behavior, construction, symbolic meaning interest, and no concern for clothing. Creekmore called her instrument a clothing interest inventory; she referred to the categories within the inventory as clothing behaviors and did not list "interest" per se. Her overall behavioral classification was interest with other behaviors clustered underneath. Other writers have referred to clothing interest as only one of many clothing behaviors.

Reliability coefficients were computed on each measure on an odd-even basis. The coefficients ranged from .14 to .88, all considered acceptable by Creekmore except for the two lowest—approval .14 and tactual .22. "No attempts were made to validate the clothing behaviors measure since criteria for comparison were unknown (Creekmore, 1963, p. 49)." Despite its lack of validity, this was an important study because of its pioneer nature and the number of people who have used the entire clothing behavior measure or parts of it in other research.

Expansive analyses of the original Creekmore instrument were done by Brady in 1963. She subjected the inventory to extensive rational and statistical analyses in order to produce a more refined and discriminating measure. Some of the original 14 Creekmore behavioral areas were eliminated. Rewriting old items and including new ones, the instrument was pretested to determine discrimination and internal consistency. These procedures resulted in a new instrument of nine

scales—10 items in each. The behaviors measured by the nine subscales were: experimental use, construction, comfort, concern for appearance, concern for management of clothing, symbolic meaning of clothing, emphasis on fashion use, conformity, and modesty. The refined questionnaire was administered to a sample of 120 college women and the results analyzed by means of item-total correlations. "Results showed that each correlation was significant above the .01 level of confidence, indicating that each behavior was internally consistent and discriminating (p. 62)." In fact, the internal consistency and discrimination was greater than that reported on the original Creekmore inventory. Validity was not one of the major concerns of Brady's study.

To acquire more information about clothing behavior, Sharpe (1963) designed an original clothing interest measure consisting of 14 items to be answered on a Likert type five-point scale. She was concerned with several types of validity in the development of the "Clothing Scale." In an attempt to determine functional validity the known-groups method—24 women whose actual clothing behaviors were known to the investigator—was used. A significant t-test indicated that subjects performed as anticipated and that high and low scores on the measure could be predicted. Sharpe was also interested in establishing operational validity and for this purpose used both a committee for critical evaluation and factor analysis. As a result of the above procedures some validity could be claimed for the inventory.

Griesman's study (1965) was an attempt to relate what she called clothing behavior to a number of variables such as attitudes toward

certain clothing standards, clothing interest, orthodoxy, and conformity. To measure clothing behavior and attitude, two scales were developed, but to measure clothing interest nine statements from Brady's (1963) revision of Creekmore's "Clothing Interest Inventory," were used. The entire measure was evaluated for face validity by a panel of four judges.

Creekmore revised her original inventory in 1966 by reducing the total number of items considerably and the total number of behaviors to eight. Dickey (1967) used the 1966 version; she revised it further by adding and deleting items based on item-total correlations and tests for discreteness (those items which correlated significantly with subtotals of clothing behaviors other than those which they were to measure were eliminated). The final form, called a "Clothing Concern Inventory," was a measure of the interest in and importance of clothing to the individual. It consisted of 38 items divided into five subscales: aesthetic, modesty, comfort, management, and social approval. An item analysis for the total sample used in the study showed that all statements contributed significantly to their respective subscales. Thus, discrimination and internal consistency were established.

The O'Connor (1967) "Clothing Behavior Measure" was developed from modifications of questions from the Brady scales, adapted for use with a male population. New items were also added. The measure included eight statements in each of eight categories: emphasis on appearance, conformity, comfort, experimental, fashion, management, no concern, and symbolic meaning in the use of clothing. Each of the questions in the

O'Connor clothing measure was correlated with its corresponding subscale score. All correlations were significant at the .01 level of significance indicating the internal consistency of the measure.

When Risley (1969) used O'Connor's scale to measure clothing behavior, a clothing interest instrument, "Men's Clothing Styles Questionnaire," was added. The clothing interest referred to was the willingness on the part of the subject to wear certain fashionable items of clothing or the interest in selected fashion features. Although neither O'Connor (1967, p. 37) nor Risley (1969, p. 69) was concerned with validating their instruments, it was reported that the three instruments used by Risley were valid and the fact that few significant relationships existed between the variables was attributed, ". . . to the fact that they tested separate and distinct characteristics of the college men (p. 69)."

In 1967, five graduate students[1] under the supervision of Dr. Creekmore, developed an instrument purported to measure eight aspects of clothing attitudes and behaviors. This measure was called the "Importance of Clothing Questionnaire." The theoretical bases for the instrument were from Creekmore's doctoral dissertation in 1963. The eight aspects, which became the titles of the eight subscales of the final instrument were: aesthetics, approval, attention, comfort, psychological dependence, interest, management, and modesty. Some of the items for this instrument were modifications of those written previously by Creekmore (1963), by Sharpe (1963), and by Brady (1963).

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The 11 items in each of the eight scales were evaluated by the researchers to range from slight importance to high importance of that clothing aspect. "An attempt was made to balance the intensity of the statements under each section; that is, all clothing categories had approximately the same number of slight, moderate, and very intense statements (Humphrey, 1967, p. 35)." Each subscale included one theoretical concern. In spite of the extensive pretesting and item revisions done at Michigan State University, no report has been found of any attempts by this group to demonstrate the reliability or validity of the subscales or of the entire instrument.

Fetterman, (1968) however, analyzed and revised Creekmore's "Importance of Clothing Questionnaire," to estimate the reliability and validity of this measure. Hoyt's analysis of variance method for estimating the error variance was used to measure the reliability of the scales. An item-analysis, consisting of item-total correlations, and degree of internal consistency, measured by the degree of differentiation between high and low scorers, resulted in suggestions for improving the scales. The problem of validity for the first seven scales was approached by developing a criterion measure of seven words or phrases corresponding to behavior measured in the first seven scales. The rank order of subjects' scores on the scales was compared with the rank order of importance of the words or phrases on the criterion measure. No conclusions concerning validity were made from this rank order comparison. ". . . very few rank correlation coefficients were significant and the reliability and validity of the criterion measure were unknown (Fetterman, 1968, p. 111)."

Some of the items on Goodman's questionnaire (1969) came from Creekmore, et al. (1968), and others were devised for the study. This measure was composed of four subscales, each with 12 questions, measuring aesthetics, interest, management, and social approval. All items were statistically significant at the .01 level on item-total correlations with the total item's subscale score. The format of the questions and the scoring were similar to that used in the Creekmore studies of 1967-68. However, the items appeared to be completely different.

Adapting items from several sources, including Creekmore's scales, Bissell (1969) developed a 36 item scale. It was divided into five subscales: interest in clothing, interest-importance of clothing, importance placed on clothing, importance-psychological aspects of clothing, psychological aspects of clothing. Consensual validity for the instrument was established by a group of upper-level undergraduate and graduate students in clothing and textiles. Harrison (1969) used 62 items adapted from Creekmore (1963), Brady (1963), and Dickey (1967) for an Indian population. Along with redefining and modifying items original statements were added in an attempt to make an instrument more applicable to Indian populations' conditions of clothing usage.

The most recent use of the Creekmore, et al. (1968) instrument available to this investigator was a study done by Kim (1970). To measure clothing behaviors items were used from the instrument revisions of Brady (1963), Dickey (1967), Klaasen (1967), and Harrison (1969) as well as adding new items for a total of 56 statements, eight in each of the following seven categories: aesthetics, modesty, conformity,

management, social approval, construction, and psychological dependence. Interest was separated from behavior and Freedle's (1968) modification of Rosencranz's (1948) instrument used to measure clothing interest.

These studies, reported in the later part of this section of the literature review, indicate how frequently Creekmore's instruments and theories have been used in subsequent research. Many researchers have gone back to the original instrument developed in 1963 and used Brady's and Sharpe's revisions as well as Creekmore's own 1966 revision. In recent years, however, students have relied more on the 1967-68 research of Creekmore and associates which resulted in the "Importance of Clothing Questionnaire."

## Factor Analysis

### Development

Since its development at the beginning of the twentieth century, factor analysis has been closely linked with psychology. It has been mistakenly considered a psychological theory but is actually a branch of the science of statistics, having been originally devised to provide mathematical models for explanations of human ability and behavior. As a systematic method for examining meanings of tests by correlating many different ones, it was first applied to tests of educational ability. However, its use has spread as factor analysis is used to clarify ". . . measures of interests, attitudes, and personality as well as measures of ability (Cronbach, 1970, p. 309)."

The beginnings of factor analysis are attributed to Spearman (1904) and his development of a two factor theory, although, even earlier, Pearson (1901) had developed the principles of axes rotation that are basic to all factor analyses. However, Spearman is considered the father of factor analysis; he developed the major theories relating to the subject (Harmon, 1967). The early factorists worked with Spearman's two factor theory, and when it became apparent that this theory was not comprehensive enough to describe most psychological tests, a small number of general factors were introduced. It wasn't until the 1920's that the concept of multiple factor analysis came into existence (Garnell, 1919-1920).

The procedures used in factor analysis were refined during World War II when they were used extensively by the United States military services for large scale testing, classification, and assignment problems. Since that time psychologists have continued to use factor analysis in intelligence development as well as in a number of other areas—executive morale, clinical evaluation, and voting behavior—to name just a few (Harmon, 1967). Outside the field of psychology, factor analysis has been used in geography, business, medicine, and many other disciplines (French, 1951; Guilford, 1956).

There are more than 10 distinct types of factor solutions, some are of only historic interest now, some meet particular and limited needs, and some have general applicability. Criteria for selection of a factor solution have been advanced by factorists, all criteria having two points in common. The procedure must result in an adequate explanation of the interrelationships among the variables, and the

results should be simplified as much as possible in order to be
meaningful to a particular field of investigation (Harmon, 1967).
Because of the availability of high speed computers, several approaches
may be used in arriving at the best factor solution.

## Construct validation

A conventional view of test validity for the past 50 years has been
an empirical one, confined to correlating one test or procedure with
another or to some outside criteria. Even the recommendations pro-
vided by the Equal Employment Opportunity Commission under Title VII
of the Civil Rights Act of 1964, required, when feasible, empirical
validation or concurrent validation (Ruch, 1970). These procedures, to
many modern statisticians, are antiquated ones (Guertin and Bailey,
1970). Of more recent origin is the recommendation for rational
validation—content validity or construct validity. Incidentally,
these methods of validation are also permissible under the EEOC
guidelines.

The use of factor analysis has become a major tool in the
establishment of construct validity ". . . defined as the extent to
which [a test] it measures a 'theoretical construct' or trait (Ruch,
1970, p. 21)." More sophisticated statistical techniques as well as a
wider range of computer facilities have made it possible for researchers
to investigate this previously neglected portion of test development.
Construct validation, as seen by the factorist, ". . . is an analysis
of the meaning of test scores in terms of psychological concepts or
'constructs' (Cronbach, 1970, p. 142)." Construct validity is

concerned with the meaning of a test, with the theoretical constructs used in the development of the test. It is necessary for construct validation to discover what factors explain test performance.

In the past, each test was supposed to be unidimensional, that is, to measure one underlying variable that had a distinctive name. Validity often was claimed by simply matching concept to test. Today, researchers recognize the multidimensional trait aspects of human behavior, and problems with construct validity have become more difficult. Lacking unity and consensus, social science researchers are wary of attaching names and concepts to tests. They regard measures of human behavior as collections of constructs or factors (the terms "traits", "behaviors", or "concepts" may also be used instead of "constructs"). Although "The problem of construct validity remains one of the most difficult in social research . . . (Oppenheim, 1966, p. 78)," Kerlinger (1964) believed that some of the problems may be overcome by the use of factor analysis as a tool in construct validation. Guilford (1965) also believed that factor analysis was useful for this purpose. He suggested that the validity of a test as a measure of certain constructs or factors may be determined by the correlation between the total test score and the individual factors. These correlations are called the factor loadings and there are as many factor loadings as there are test items. The factorial or construct validity of a test can be in the form of a list of the ". . . primary factors with which it correlates and their proportion of variance in the test (Guilford, 1965, p. 472)."

Thus, factor analysis is closely tied to construct validity. As construct validity asks the question, "What factors or constructs account for the variance in a test performance (Kerlinger, 1964, p. 448)?" so factor analysis may be considered a procedure for partitioning the true variance of a test into component variances—common factor variance, test (or specific) variance, and error variance. Common factor variance—called communality—is the basis for validity. The usefulness of factor analysis in construct validation is in the identification of this common factor variance, the variance shared by component tests (Guilford, 1965).

Factor analysis has already been used to establish construct validity in several areas of investigation, particularly in education (Kerlinger and Kaya, 1959; Guilford, 1948). There is, however, little evidence in the literature of its use in the clothing field. Aiken (1963) used factor analysis in the data processing of his research, however, the procedure was used in order to assign weights to items by means of factor loadings rather than to assign items to clusters or to establish construct validity for the "Revised Clothing Opinionnaire."

Factor analysis was used by Sharpe (1963) to analyse the items in the development of a "Clothing Scale." Two dimensions of clothing behavior—interest and importance—were of concern and factor analysis was used to isolate and eliminate statements that did not appear to measure these two areas. Factor analysis plus a panel of judges was used to determine operational or face validity. Although ". . . establishment of validity was a secondary objective . . . a committee was used to determine operational validity; the factor analysis served as a further check on this aspect (p. 34)."

Clothing Interest and Demographic Variables

Instruments to investigate relationships between clothing interest and demographic variables have been used in many studies. Literature which has tested hypotheses using background data similar to that collected for this dissertation will be presented here.

Home Economists have studied a variety of clothing behaviors and socioeconomic status. Goodman (1967), using four clothing behaviors— aesthetics, interest, management, and social approval—found that both lower and upper class groups ranked the measured clothing behaviors in the same order. Only the mean score for one of the behaviors, aesthetic concern for dress, differed significantly between the groups. Members of the upper class scored higher on this variable than did girls who belonged to the lower classes. The items used by Goodman came from the studies of Klaasen (1967) and Hundley (1967), both of whom worked with Creekmore on the "Importance of Clothing Questionnaire (1968)."

In other instances it was found that attitudes toward clothing correlated with group and social class membership. Williams (1963) found similarities of clothing opinions among members of teenage cliques. Furthermore, these opinions differed sharply from those held by members of other groups and non-group members. When the sample was differentiated by social class, similar results were discovered. Teenage girls belonging to a particular socioeconomic class tended to agree more, in their opinions on clothing and appearance, with members of their own social class than with girls assigned to another class (Bjorngaard, 1962).

Snow (1969), in researching clothing interest, used an adult male sample. She found a significant inverse relationship between clothing interest and socioeconomic factors. Those men in the highest income bracket were found to be the least interested in clothing, although the greatest acceptance of men's new fashions was found among the men at the highest and lowest income level. Russell's (1971) instrument, "Fashion Interest Questionnaire" purported to measure fashion interest, general clothing interest, and clothing awareness. Of the sample of 275 males, 207 were undergraduates and 68 were fathers of sixth or twelfth grade students. She used the McGuire-White (1955) index to measure social class and found, like Snow and others (Barbel and Lobel, 1952; Vener, 1953), that the highest interest in fashion and the highest awareness of clothing occurred among the men in the upper middle class and the least awareness and interest, as measured by her instruments, occurred in the upper class. Although different terms were used to describe the variables, Beeson (1965) found similar significant correlations. She referred to the socioeconomic variables as Level-of-Living and found that students with a low Level-of-Living demonstrated high clothing apperception scores. Clothing apperception referred to a planned use of clothing symbolism that indicated an interest in clothing and also the importance of clothing in an individual's life.

Contrary to the above reports, neither Taylor (1969), Griesman (1965), nor Humphrey (1967) found any significant relationships between clothing interest, attitudes, or behaviors and socioeconomic class. Griesman used a conservative and religiously oriented sample; these variables may have been stronger motivating factors than social class

for the subjects. Taylor's sample consisted of only ninth grade girls. She suggested that the lack of significant differences in clothing interest between the social classes was due to the fact that ". . . the peer group is a more important influence on adolescent clothing related behaviour [sic] than the social class of the family of orientation (p. 50)." Humphrey's research was also done with high school students, but included the entire grade range and both sexes. Klaasen (1967), using the same sample not only found similar results in regard to social class, but neither socioeconomic class nor year in high school significantly affected the relationship between the tested variables—self-esteem and clothing interest. Wildes used Warner's (1960) Index of Status Characteristics to measure the social class of the high school students in her sample. She found no significant differences between the measure of clothing awareness and students differentiated by sex, age, or social class. The research did, however, indicate a trend in the direction of greater clothing interest among girls than among boys.

In a pioneer study of clothing interest, Rosencranz (1948) found significant relationships between the subjects' interest in dress and group membership, age, rural or urban background, occupation, and income. She also found significant differences between the subjects grouped according to their interest in clothing and the background variables of marital status and children in the family. There was more variation between married women with children and married women without children than between married women without children and single women. "It would seem that children in the family tend to limit one's

interest in personal clothing (p. 129)." Also, using multiple varia-
bles, O'Connor (1967) investigated relationships between clothing
behaviors and general values. The sample consisted of 207 undergraduate
males. The data were analyzed by class, major, and college. "Analysis
of variance by class and major indicated that means of certain values
and behaviors were higher in some classes in some curricula than in
others (p. 73)." The juniors in the sample had significantly lower
responses on fashion behavior and higher scores on no concern behavior
than the sophomores, indicating that the younger students were more
interested in following current styles in clothing. The sample con-
sisted of students majoring in marketing, business, government, liberal
arts, chemical engineering, forestry, recreation, and architecture.
She found significant differences between the mean scores of all
groups of majors on all the clothing behaviors that she measured with
the exception of experimental use of clothing.

In order to relate clothing interests to class and major, Frost
(1968) developed a "Clothing Attitude Opinionnaire for Men," to
measure the following variables: comfort, conformity, economy, fashion
interest, self-expression, status, and no concern. Significant
differences were observed between a student's college major and some of
his clothing attitudes; students enrolled in the College of Agriculture
scored significantly higher on economy in clothing and significantly
lower in fashion interest than did business students. The student's
major had a greater effect on clothing attitudes than did his grade;
there was no relationship between these attitudes and the students'
year at the university. The lowest scores for all groups were on the

"no concern" attitude indicating that this sample of students were interested in clothing; for all students, the most important clothing attitudes were comfort, economy, and self-expression.

Kim (1970) did not find an overall difference in clothing behavior by major but did uncover a significant difference on one specific clothing behavior—home economics students scored higher on construction than did liberal arts or science students. She also found a difference between classes. Freshmen placed higher importance on clothing for social approval than did seniors; on the other hand, seniors placed greater emphasis on management of clothing than did the freshmen. This was true for students enrolled in all three majors. There was a difference by class within majors; home economics seniors scored significantly higher on aesthetics than did home economics freshmen. In fact, aesthetic concern for clothing was the most important clothing behavior for all home economics seniors. Pankowski, however, using her own measure, did find a positive correlation between overall clothing interest and year in college. Using Warner's ranking scales she also found positive relationships between clothing interest and parents' education and father's occupation.

Vener (1957) designed an instrument to measure clothing awareness which was closely related to clothing interest or the importance of clothing. It was reported that high school girls showed greater clothing awareness than did high school boys. Ryan (1953) found similar sex differences in overall clothing interest. Humphrey's (1967) research showed that high school girls had greater overall interest in clothing than did boys. However, it was stated that the items in the

measure used, "The Importance of Clothing Questionnaire," ". . . may have applied more often to girls than to boys, causing the girls to have higher scores (p. 55)."

Humphrey also found considerable differences between the sexes in the rankings of the clothing dimensions. Although girls and boys rated aesthetics as their primary interest in clothing, there were no further similarities in the rankings. Others have also found that aesthetics had the highest priority in ranking of clothing interest for both males and females (Lapitsky, 1961; Brady, 1963; Creekmore, 1963).

Beeson found no significant difference between clothing interest and sex or age-grade level. However, the girls in her sample tended to have higher interest scores than did the boys, and there was also a trend toward an inverse relationship between clothing interest scores and age-grade level. Snow (1969) also found an inverse relationship between age and clothing interest and that "Clothing interest increased as education increased up to the level of college attendance, then interest declined as more education was acquired (p. 73)."

Stilley (1970) used an original clothing interest measure with a sample of 125 high school boys, grades 8 to 12. There were no significant differences between clothing interest and age, and, although the F-statistic for the analysis of variance on grade and interest was highly significant (.001), individual t-tests only indicated trends in the general direction of greater interest among the boys in higher grades—namely the tenth and twelfth. The results indicated that although obviously related, grade in school is perhaps a greater influence on clothing interest than age. These results coincided with those found by Vener and Hoffer (1959).

Although she found no significant differences between age and clothing awareness, Russell (1971) did find that, in her sample of undergraduate men and fathers, the younger men were more interested in fashion than the older men. When the student group was broken into two sections, 17-20 and 21-25 years of age, and the fathers into three groups, 26-35, 36-45, and 46-65 years of age, there was no difference on fashion interest mean scores between either group of students or among any of the groups of fathers. Even though there was some relationship between the older students and the younger fathers, the results still indicated that the highest degree of fashion interest was expressed by the younger men.

Humphrey (1967), on the other hand, found only one significant difference between grade in school and clothing behavior, an inverse relationship between the clothing interest aspect of clothing behavior and grade in school, but only among the boys in the sample. Dewey (1974), using a college population of males and females found no significant differences between clothing behavior patterns and age, sex, grade, or college major. The discrepancies in the results reported above may be due to the varying age of the subjects in the different studies.

It is well confirmed by observation and research that at no other time in life is there a more heightened interest in clothing than during adolescence, particularly early and middle adolescence. By the time students reach college the period of greatest interest seems to be over (Ryan, 1953). "The period of youth is the one in which the emphasis on clothing is of greatest importance. At no other time of life does the

problem of dress become so absorbing (Hurlock, 1949, p. 175)."
Interest in clothing, even if it is predominantly fad behavior, is at
least as important to adolescents as is conforming to the norms of
their group. Clothing is used to demonstrate this group belongingness;
adolescents are greatly interested in clothing (Klaasen, 1967). This
interest tends to decline after the adolescent years. ". . . interest
in clothing rises sharply from about 12 to approximately 18 years when
it reaches its peak. Interest in clothes for the self gradually
declines after the individual reaches about 1C (Ryan, 1966, p. 285)."

> The adolescent still thinks in concrete rather than abstract
> terms. It is easier for him to understand and to assign cau-
> sation to something he can feel or see. Therefore, he tends
> to think of the reasons for social approval in terms of cloth-
> ing and appearance . . . . This leads to a heightened inter-
> est in clothes and makes concern about physical appearance
> one of the dominating factors in his life (Ryan, 1966, p. 270).

Rosencranz (1948) however, said that although clothing interest seems to
be the strongest during adolescence, research ". . . suggests the idea
that clothing interest begins at an early age and continues into
adulthood more often than it is acquired by adults (p. 162)."

With few exceptions, this review, thus far, has consisted of
reports of relationships between background variables and general
clothing interest or behaviors. Creekmore's (1963) original research
found several relationships between selected clothing behaviors and
demographic data. For the sample of 300 college girls, the most
important clothing behaviors in descending order of importance were
appearance, status symbol use, management, theoretical, and conformity.
No concern was the least important for the sample. This importance of

appearance to adolescent girls had been reported previously by other
researchers (Hurlock, 1929; Barr, 1934; Roland, 1958; Lapitsky, 1961)
and more recently by still others (O'Connor, 1967; Humphrey, 1967;
Goodman, 1967; Harrison, 1969; Kim, 1970). Hoffman (1956) found aesthe-
tics to be important to a sample of 80 women as well as finding a
relationship between clothing interest and aesthetics. Graham (1972)
found the aesthetic clothing value to be most important, and similar to
O'Connor (1967) and Frost (1968), found no concern for clothing to be
the least important clothing behavior; Harrison found it to be second
lowest.

Creekmore found that an inverse relationship occurred between
modesty and class-age. Married students scored significantly higher
on management and construction. Creekmore suggested that this may be
because married students tended to have more limited incomes and that
non-married students were more interested in using dress to prove
themselves.

Creekmore's sample consisted of students from four university
curricula: business, education, home economics, and liberal arts. The
home economics students scored significantly higher on the clothing
behaviors of management, construction (similar to Kim, 1970), and
theoretical. She pointed out the logic of these findings noting their
relationship to the home economics curriculum. Clothing construction
courses were required; emphasis was placed throughout the program on
management of clothing in selection, use, and care; a theoretical
interest in clothing would be a natural tendency for most home econo-
mics students.

To determine socioeconomic status, Creekmore used Hollingshead's (1958) Index of Social Position. In her study those students in middle social class positions scored higher on tool use and status symbol use of clothing than did those in higher social positions. This is similar to the conclusions of Vener (1953) who found that white collar workers in prestige positions considered clothing more important than did men in lower occupations. However, this status symbol use of clothing then decreased for the highest social group.

Creekmore also found an inverse relationship between conformity and social position since the four lowest social class positions were significantly higher on this aspect of clothing behavior than were the students in the upper levels.

## Summary

This review of related literature consisted of four sections. The semantic difficulties that arise when researchers attempt to define the variables involved in clothing research were reported. It was suggested that an analysis of the dimensions of clothing interest might lead to a more workable definition and more definitive terminology.

A review of the development of and subsequent use of one instrument frequently used to measure clothing interest variables was reported. The logic of examining the dimensions of clothing interest by using this instrument, rather than to proliferate further the field by developing still another measuring instrument seemed apparent.

Factor analysis was discussed, both its historical development and
as a method of establishing construct validity for a selected instrument.
Demonstrable validity of a measuring instrument, particularly construct
validity, is important if one is to have faith in the instrument.
Factor analysis, by identifying the underlying dimensions of a test,
can test hypotheses concerning the amount of congruence between the
test and its theoretical constructs. Not only can validity then be
assumed but semantically acceptable definitions of the constructs may be
developed.

The final section of this review consisted of a number of reports
of research where relationships had been examined between clothing
interest and certain demographic information. It was the intention of
this research to add to this particular body of knowledge by collecting
data to test similar hypotheses with an instrument with some
demonstrated validity.

# CHAPTER III

## STATEMENT OF THE RESEARCH PROBLEM

### Purposes

The primary purpose of this research was to determine the dimensions underlying the clothing behavior that may be labeled "importance of" or "interest in" clothing. The dimensions of clothing interest were identified by factor analysis with the use of an instrument developed by Creekmore and associates. Construct or factor validity of the clothing measure was examined by means of correlational analyses between the rationally derived subscales of the instrument and the statistically derived factors.

As a secondary purpose of this study, hypothesized relationships between clothing interest and certain demographic characteristics of college students, such as age, sex, college, curriculum, and socio-economic status, were investigated.

### Objectives

1. To identify by factor analysis the underlying dimensions of behavior that may be labeled "interest in" or "importance of" clothing.

2. To investigate relationships between the factor analytically derived dimensions of clothing behavior and the empirically

derived constructs of clothing importance proposed by Creekmore
and her associates.

3.  To establish construct or factor validity for a clothing interest
    measure.

4.  To seek relationships between clothing interest as measured by the
    "Importance of Clothing Questionnaire" and certain demographic
    characteristics of college students.

## Hypotheses

The following statistical hypotheses, stated in the null form,
were postulated for this study:

Hypothesis 1:   There are no significant relationships between the
                dimensions underlying clothing behavior as derived from
                a factor analysis of a clothing measure and the
                empirically derived constructs developed by Dr. Anna
                M. Creekmore and her associates.

Hypothesis 2:   There is no significant relationship between clothing
                interest and sex among a selected group of college
                students.

Hypothesis 3:   There is no significant relationship between clothing
                interest and age among a selected group of college
                students.

Hypothesis 4:   There is no significant relationship between the
                clothing interest of students enrolled in the College
                of Home Economics and students enrolled in other

colleges of one university system.

Hypothesis 5: There is no significant relationship between the clothing interest of home economics students and their choice of major.

Hypothesis 6: There is no significant relationship between the clothing interest of college students and their socioeconomic class membership.

## Limitations

Because of the nature of the experimental design used in this research, implicit limitations are acknowledged. Randomization in the selection of the sample was not possible. Intact classes were used, the administration of the questionnaire was incorporated into the curriculum as an assignment, and the information collected was used at a later date for class discussion in order to make the experimental process a learning experience for the students. Therefore, the sample was a captive one and protocols were collected from 100% of the students enrolled in the class. Also, because of the nature of the dependent variable, assignment of subjects to groups was not a meaningful concept. The students self-selected themselves into groups depending upon their degree of clothing interest.

Because of this lack of randomization and the ex post facto nature of the research problem, the independent variables were not controlled. Any inferences about clothing interest that can be made as a result of this study apply only to the sample of 500 students. Generalizations to other populations cannot be made.

The limitations inherent in the nature of attitude scales must also be recognized. The Likert-type or summated rating scale used in this study not only lacked the objectivity that may be characteristic of other measuring devices, but it was also vulnerable to response set biases. Care must be taken in interpreting the results of attitude scales. There is no scientific way of knowing whether the five point scoring system used represented equal intervals or whether an individual who marked "agree" on an item possessed twice as much interest in clothing as the individual who marked "disagree" on the scale. Since attitude scales do not represent true interval measurement any summation of such a scale must be used with these limitations in mind. Like any attitude scale,

> The scores could not be used to say how much more favorable one subject was than another nor could these scores be compared with scores obtained from a second administration of the scales to the same group to determine whether there had been changes in attitudes (Fetterman, 1968, pp. 18-19).

## Assumptions

The basic assumptions of this study were:

1. Attitudes can be measured even though questions of validity remain unresolved.

2. Honesty and freedom of response to questions about clothing will be more likely to occur in an affluent environment.

3. Freedom of expression in matters pertaining to clothing will be evidenced to a greater degree by college students than other population groups.

4. Because of the anonymous nature of the questionnaire and the large
   size of the classes involved in this study, the influence on
   students' responses by the television teacher, who was also the
   researcher, was minimal.

5. College students are capable of accurately determining their own
   socioeconomic class by means of the McGuire-White Index of Social
   Status.

6. Because of the ex post facto nature of the experimental design,
   the basic assumptions of some of the statistical procedures may
   have been violated, particularly those of normalcy, randomization,
   and homoscedasticity. However, the sample used in this study was
   large enough to warrant the use of "non-small sample" statistics,
   therefore, it seemed reasonable to assume that the violation of
   parametric assumptions would not seriously affect the validity of
   the results. Many statisticians believe that with large sample
   sizes assumption failures ". . . will not seriously affect the
   validity of significance tests nor the power estimates associated
   with them (Cohen, 1969, p. 72)."

CHAPTER IV

PROCEDURE

The purposes of this study were to identify factors that underlie clothing interest behavior and to identify relationships between these factors and specified demographic information collected from a selected population. The decisions and procedures utilized in this investigation will be discussed in the following order: selection of the instruments for data collection, selection of factor analysis as a research tool, selection of the sample, pretesting of the instrument, method of data collection, and statistical analysis of the data.

## Selection of the Instruments

### Importance of Clothing Questionnaire

A review of a large number of instruments purporting to measure clothing interest indicated that the one measure that had been used most frequently in its original form and in revisions and refinements was the one that was developed by Dr. Anna M. Creekmore and a group of graduate students at Michigan State University.[1] Investigation of this instrument indicated its feasibility for use in the present study. Without further change the questionnaire was suitable for administration to a college age population composed of males and

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[1] Karen Engel, Carolyn Andree Humphrey, Winfred Sue Hundley, Mary Green Klaasen, and Mary Jane Young.

females. The instrument could be machine scored and so it was feasible to employ with a large number of subjects; it was sufficiently comprehensive to make factor analysis meaningful. That the original authors conceived the questionnaire to be multidimensional was apparent by its division into subscales; therefore, comparisons between the clusters of items on these subscales and the clusters of items that resulted from factor analysis were possible. Some reliability had already been shown for this instrument (Brady, 1963; Creekmore, 1966; Dickey, 1967).

The "Importance of Clothing Questionnaire" was developed and revised under the direction of Dr. Creekmore in 1966-67 and the completed revision was dated 1968. The researchers working on this instrument began with Creekmore's scale (1963) and the revisions and refinements of Brady (1963) and Sharpe (1963). The measure first contained 170 statements. It was pretested three times and revised after each pretest. The final questionnaire consisted of 89 statements divided into eight subscales of 11 items each. The first statement was introductory and was not used in computations. The statements in the instrument were designed so that each subscale included a final theoretical item. These eight items could be combined to make a ninth subscale called "theoretical concern." Although no evidence has been found by this researcher to indicate the use of the ninth scale it was included in the scoring and data analysis in this research.

Subjects in this study registered degree of agreement with each item on a Likert-type or summated rating scale, the five points represented the following responses: "Almost always—very few exceptions,"

"Usually—majority of the time," "Sometimes," "Seldom—not very often," and "Almost never—very few exceptions." The numbers of the responses became the item weights used in computations. Five items were negatively stated and those weights were reversed. Scores on the total scale and the nine subscales were summations of the weights in the total or individual scales (Klaasen, 1967). High scores on the whole questionnaire indicated a high degree of clothing interest. High scores on the nine subscales represented a favorable attitude toward that particular aspect of clothing behavior. The complete instrument is reproduced in Appendix C.

## Index of Social Status

Data for socioeconomic class were obtained by means of the McGuire-White formula for the Index of Social Status. This index was developed at the University of Texas and was considered a modification or short form of Warner's standard Index of Status Characteristics (Warner, 1960). It required only three items of information—source of income, occupation of head of household, and education of "status parent (usually father)." The ISS was a useful index of social class when it was not possible to obtain ratings for dwelling areas and house types for each subject because subjects came from a number of communities and time was not available for personal interviews. "Where checks have been made the ISS shows a fairly high correspondence to the ISC and status placements usually are corroborated by interview data (McGuire, White, 1955)."

This measure for socioeconomic class was chosen because it was relatively simple and it had been demonstrated through pretesting that students were able to determine their own index number with a simple direction sheet and then transfer this number to the IBM answer sheet. Instructions for using the ISS can be found in Appendix D.

## Biographical Data Sheet

A background biographical data sheet was developed to obtain selected items of demographic information from each student participating in the study. The items requested were: sex, age, college of enrollment, curriculum or major department within the College of Home Economics, option within the department, class level, marital status, and socioeconomic status. A copy of the biographical data sheet appears in Appendix E.

## Selection of Factor Analysis

Several methods and procedures may be involved in instrument development: they may be divided into two categories—the rational or empirical method of test development and the statistical approach. Regardless of whether the rationalists work alone, employ a panel of judges, or resort to Q-sort techniques, they collate items that appear to measure a quality or trait that they are attempting to measure or isolate. These items may be part of a unidimensional instrument with a single score for each individual. Or, again through empirical reasoning, the test developers may sub-divide their measures into a number of scales each measuring a single concept.

Those test makers who are most concerned with underlying traits or variables supporting test items are concerned with construct validity. They suggest factor analysis as the best method for isolating traits and ascertaining items which measure those traits to the greatest degree (Guilford, 1965). These statistically oriented test developers have used factor analysis in establishing construct or factor validity for a measuring instrument. Although problems of reliability and validity face every test developer, surmounting the problems of reliability are most easily achieved. Validity, the possibility that an instrument will measure what it purports to measure, is complex and the greatest stumbling block to developing a measure in which the investigator and other researchers can have confidence.

The idea of factor analysis is based upon the work of Spearman. A number of tests or test items are given to a group of subjects and intercorrelations of these items are obtained.

> The psychological justification for classifying traits according to correlation clusters arises from the fact that the mind must act differently to produce such distinct clusters of correlations (Holzinger, 1937, p. 5).

If the mind did not operate in this manner, if it reacted to all items in a set or test in the same way, there would be no large number of correlation clusters; only a single factor would result.

Factor analysis begins with an intercorrelation of all test items presented in matrix form. A number of equally accurate ways are available for factoring a given correlation matrix (Harmon, 1967). Guidelines used in selecting the preferred factor solution are:

(1) statistical simplicity, and (2) content meaningfulness. Statistically optimal solutions—principal axes and centroid solution—do not always yield the most meaningful solutions for social science problems, therefore, other factor solutions have been developed for use in these areas.

Criteria that must be considered by the investigator in choosing a factor solution are:

1. The data must be presented in matrix notation, that is the factor model must be a linear one.

2. The solution must be parsimonious. The number of common factors should be less than the total number of variables.

3. The contribution of each factor to the total variances of the variables should be in descending order, that is, each successive factor should contribute a decreased amount of the total communality.

4. Methods of assigning variables to factors must be part of the research design.

5. An orthogonal rather than an oblique frame of reference is desirable. This type of rotation of axes removes the complexity resulting from the number of variables, provides the maximum separation of factors, and arrives at the simplest structure (Harmon, 1967, pp. 95-99).

Of the criteria above, the most important are the numbers of factors extracted and the type of rotation (Cronbach, 1970). According to Harmon, (1967), Kaiser's varimax method does a better job of applying the above criteria to approximate the classical simple structure principles that are most desirable.

Also, the researcher has choices for the diagonal entries in the matrix to be factored, i.e., the estimates of common factor variance. However, with the use of high speed computers more than one method of estimating communalities may be used and the resulting matrices studied before the optimal number of factors is determined.

It is important for the factorist to realize that "There is no preferred type of factor solution obtainable uniquely on ground of psychological significance (p. 5) . . . . In fact, several methods may lead to equally unique solutions (Harmon, 1967, p. 95)."

## Selection of the Sample

Protocols for this study were collected from all 500 students enrolled in a beginning course in clothing and textiles at Virginia Polytechnic Institute and State University for the academic year, 1972-73.

The course, entitled Clothing and Man (CTRA 101), is a part of the core curriculum of the College of Home Economics. The sample included proportional numbers from the various major areas of interest within the College:  Clothing, Textiles and Related Art; Human Nutrition and Foods; and Management, Housing, and Family Development. The course is open to all students within the university community. Although the sample was predominantly female, freshman, and home economics majors, there were groups of males, upper classmen, and non-home economics majors as well. The characteristics of the sample are described in Chapter V.

## Method of Data Collection

Permission to use the Clothing and Man classes for data collection was obtained from the Dean of the College of Home Economics and from the head of the Department of Clothing, Textiles and Related Art. Since Clothing and Man was a large class taught by television, it was possible to collect the data during one class period in each of the three academic quarters—fall, winter, and spring of one academic year. Exactly identical directions were read by the researcher to all subjects (See Appendix F).

The clothing inventory was used as a class assignment during the portion of the course devoted to a discussion of research methods used in the study of the social and psychological aspects of clothing. Although the students were told that they were taking part in a doctoral research study and were given the opportunity to complete an alternate assignment if they did not wish to participate, no student chose the option of an alternate project. Therefore, 100% of the students taking the course participated in the research. Although no explanation of the instrument or the research was made at the time of data collection, the class period following the collection of the protocols was devoted to a discussion of research measuring instruments used in the clothing field and socioeconomic class indices.

All data were collected on Op-Scan IBM answer sheets. The accuracy of the figures used by the students in determining their social class on the McGuire-White index was checked. Following the third data collection period, all protocols were combined into one group and card punched by means of an optical scanner at Virginia Commonwealth University in Richmond.

## Pretesting the Instruments

Since the use of the Creekmore instrument had been decided upon for this research, no pretest of the clothing measure was considered necessary except for an estimate of the amount of time needed for completion. The biographical data sheet and the McGuire-White Index of Social Status were pretested for clarity in the winter quarter, 1972. The original data sheet had been open-ended. Following the pretest this sheet was revised and put into a multiple-choice format suitable for machine scoring.

The entire inventory—clothing questionnaire, data sheet, and social class index—was pretested in the Clothing and Man class in the spring of 1972. Based on this second pretest it was decided that the data could be collected from a large group in 40 minutes and so suitable for regular classroom time periods. It was also found that students were able to complete the McGuire-White index without difficulty. No changes were made in the Creekmore instrument at any time. Minor changes in wording were made in the biographical data sheet following the second pretest.

## Analysis of the Data

Before data analysis was possible 5 items stated in reverse form (items numbered 2, 6, 10, 60, and 76) had to be rescored. This information was written into the original computer program.

Frequency counts, means, and standard deviations were obtained for all groups differentiated by background variables based on the information collected on the biographical data sheet.

The first part of the data analysis was a factor analysis of the items on the "Importance of Clothing Questionnaire." Factor extraction was done by means of principal components with first SMC's (Squared Multiple Correlations) in the diagonal and then repeated with +1.00's in the principal diagonal entries. The matrix to be factored was rotated to optimal orthogonal structure by means of Kaiser's varimax method. The factors derived from the completed factor analysis were compared to the clusters of items (subscales) derived by Creekmore and her associates. Phi coefficients, point biserial correlations, and the chi square test for independence were used to determine the statistical significance of these similarities or differences. Since all hypotheses were non-directional, two-tailed tests of significance were used in all analyses. All hypotheses were rejected at the $\alpha = <.05$ level of significance. Significance levels at the $p < .001$, $p < .01$, $p < .05$ were reported.

In order to compute the chi square tests and the phi and point biserial coefficients used in the correlational analyses, separate cards were punched for each item containing 3 sets of variables for a total of 25 variables: the reflection of whether an item was on a Creekmore subscale (9 variables), the scoring of an item as on or off each factor listing (8 variables), and the factor loading of the items on each factor—the numbers on a single line of varimax matrix output disregarding sign—(8 variables). Data for the chi square tests for independence and the correlational analyses were processed at the Virginia Polytechnic Institute and State University Computer Center.

CHAPTER V

RESULTS AND DISCUSSION

The main purpose of this study was to investigate construct validity for a clothing interest questionnaire. Factor analysis was used to identify the underlying dimensions of behavior which may be called interest in or importance of clothing. These dimensions were compared to the constructs inherent in the format of the original instrument. A second purpose of this research was to determine whether relationships existed between the factors of clothing interest and certain demographic variables for a selected population. Following a description of the sample based on collected biographical data, the results of the factor analysis are reported. Several statistical tests were used to compare the subscales empirically derived by Creekmore, et al. (1968), and the factors resulting from the factor analysis. These comparisons are discussed in relationship to the construct validity of the Creekmore measure and to the assignment of constructs or names to the factors.

The relationships found between clothing interest as measured by the factors and subscale scores of the "Importance of Clothing Questionnaire" and the demographic characteristics of the sample are presented. Comparisons of results of this study with related research are discussed.

## The Sample

The research sample used in this study consisted of all the students enrolled in a beginning clothing and textiles course at Virginia Polytechnic Institute and State University during the 1972-73 academic year. As strange as it might appear to have a sample of exactly 500 subjects, there were 208 students registered fall quarter, 143 students in winter quarter, and 149 students enrolled in spring quarter. The total was 500 participants in the sample. The sample was 84% female and 16% male. The demographic information, collected by means of a biographical data sheet, is presented in Table 1.

### Age and Class Standing

There was a close proximity between age and class standing; because of the nature of the course, part of the core curriculum for the College of Home Economics, most of the subjects fell within the 18-19 age range (67%) and were in their first two years of college (78%).

### Marital Status

The nature of the group of subjects used in this study indicated the advisability of recoding item 92, marital status, into a dichotomized variable—married or single. It was reasoned that there would not be sufficient responses to "divorced," "separated," or "widow (widower)" to comprise separate groups. Only 5% of the group were married with 95% single.

## College, Major, and Option

Due to the particular course in which the data were collected the
majority of subjects were enrolled in the College of Home Economics—
73% as opposed to 27% enrolled in other colleges. Since a purpose of
this research was to determine the interests of clothing majors
specifically, item 96 was recoded to a dichotomy of clothing majors
versus non-clothing majors within the College of Home Economics.
Subjects were fairly evenly divided on this item; 54% of the subjects
stated that they were CTRA (Clothing, Textiles and Related Art)
majors and 46% were enrolled in one of the other two departments
within the College, MHFD (Management, Housing and Family Development)
and HNF (Human Nutrition and Foods). Since these students were
predominantly freshmen or sophomores, their answers to this question
reflected their interest at a given point in time. There are many
changes in curriculum among college students. However, the CTRA
department does consist of approximately the same percentage of
students in any given year. In the 1972-73 academic year the CTRA
department had 46% of the students enrolled in the College of Home
Economics.

A card sort of the options declared by the students in answer to
question 97 is also shown in Table 1. Apparel Design and Fashion
Merchandising students represented 46% of the CTRA department's
majors. The figures shown in this table are typical of the percentages
of students within each option in the department.

## Socioeconomic class

The McGuire-White Index of Social Status was used to determine the subjects' socioeconomic class. According to this measure, social class can be divided into five categories: upper class, upper middle class, lower middle class, upper lower class, and lower lower class. Exactly 50% of the subjects assigned themselves to the upper middle class while the lower middle class group consisted of 30% of the subjects.

## Sample summary

The majority of subjects that took part in this study were female, freshmen or sophomores, 18-19 years of age, enrolled in the College of Home Economics, and members of the upper middle class. The home economics students were fairly evenly divided between clothing and textiles majors and non-clothing and textiles majors. Most of the subjects in the department were fashion merchandising majors; however, there was a representation of all options within the department.

## Factor Analysis

Factor analysis begins with the correlation of each item on the test with every other test item. Because of its complexity, interpretability of the resulting matrix of intercorrelations is difficult. Therefore, it is necessary to identify which test items go with others to form small related groups. These clusters of items, which are related to each other and less so to other groups of items, are called factors and define dimensions or constructs. Extracting the factors produces an unrotated matrix of factor loadings.

TABLE 1

Demographic Data

| Variable | Number of Students | Percentage |
|----------|--------------------|------------|
| **Age** | | |
| under 18 | 16 | 3 |
| 18 | 208 | 42 |
| 19 | 132 | 26 |
| 20 | 77 | 15 |
| 21 or over | 67 | 14 |
| Total | 500 | 100 |
| **Sex** | | |
| male | 80 | 16 |
| female | 420 | 84 |
| Total | 500 | 100 |
| **Marital status** | | |
| married | 25 | 5 |
| single | 475 | 95 |
| Total | 500 | 100 |
| **Class standing** | | |
| freshmen | 268 | 54 |
| sophomores | 123 | 24 |
| juniors | 65 | 13 |
| seniors | 43 | 9 |
| graduates | 1 | 0 |
| Total | 500 | 100 |

TABLE 1  (continued)

| Variable | Number of Students | Percentage |
|---|---|---|
| **College** | | |
| Home Economics | 365 | 73 |
| Other | 135 | 27 |
| Total | 500 | 100 |
| **Major** | | |
| CTRA | 197 | 40 |
| Other home economics | 168 | 33 |
| Non-home economics | 135 | 27 |
| Total | 500 | 100 |
| **Option (within CTRA)** | | |
| Apparel Design and Fashion Merchandising | 91 | 46 |
| Textiles | 20 | 10 |
| Interior Design | 60 | 30 |
| Extension | 12 | 6 |
| Education | 14 | 8 |
| Total | 197 | 100 |
| **Socioeconomic class** | | |
| upper class | 43 | 9 |
| upper middle class | 250 | 50 |
| lower middle class | 154 | 31 |
| upper lower class | 51 | 10 |
| lower lower class | 2 | 0 |
| Total | 500 | 100 |

The principal components, or component analysis, method of extracting factors, first introduced by Hotelling (1933), is commonly used to maximize the variance obtainable from the data, resulting in an unrotated factor matrix where each component makes a maximum contribution to the sum of the variances. The extraction of factors requires estimates of communalities, or common factor variances, which become the principal diagonal entries in the factor matrix. Although there is no a priori knowledge of the actual values of the item communalities, there are several methods used to approximate them.

> Literally dozens of methods for estimating communalities have been proposed, but none of them has been shown to be superior to any of the others on the basis of closer approximation of the 'true' values . . . . The choice among the various methods of approximation is generally made on the basis of available computer facilities and the disposition of the investigator to employ that method which intuitively seems best to approach the concept of communality. As a saving grace, there is much evidence in the literature that for all but very small sets of variables, the resulting factorial solutions are little affected by the particular choice of 'communalities' in the principal diagonal of the correlation matrix (Harmon, 1967, p. 83).

Squared multiple correlations (SMC's) of each variable with the remaining n-1 variables is one frequent approximation of communality. Guttman (1956) recommends this method as the best possible estimate of communality. However, SMC's are not universally regarded as optimal estimates of communality because they are the lower bounds of common factor variances. They do have the considerable advantage in that even a cursory examination of the SMC entries in a factor matrix gives the investigator some intuitive feel for the overall relatedness of test items.

Perhaps the most common estimate of common factor variance is unity. That is, one assumes maximum intercorrelation of items and places +1.00's in the diagonal entries. This method produces the opposite extreme of the estimates obtained by using the SMC's, in that +1.00's represent the highest possible common factor variance. Communality estimation using +1.00's results in higher factor loadings on the factor matrix than when SMC's are used.

Regardless of the method used to estimate communalities, the factor extraction is accomplished and the end results form an unrotated matrix of factor loadings. The factors when first extracted are not readily interpretable; they must be artificially separated and made independent of one another. This separation most often is accomplished by rotating the vectors orthogonally, i.e., making a uniform 90-degree angle between all pairs of vectors. A more easily interpreted matrix of rotated factor loadings is the end result. These factor loadings are the correlations between an item and a given factor (Guilford, 1965, p. 476).

In this research, intercorrelation of the 89 test items on the Creekmore "Importance of Clothing Questionnaire" produced an 89 X 89 correlation matrix. The vectors or factors were extracted, first with SMC's in the diagonal entries. Arbitrarily, it was decided to extract 12 factors and the axes of vectors 9, 10, 11, and 12 were rotated to orthogonal structure. The Kaiser varimax method for axes rotation was used. This method emphasized simplification of the columns or factors of the matrix in order to meet the requirements for simple structure. With the use of high speed electronic computers, this has become the

most popular means for getting an orthogonal multiple factor solution.

When the 12 factor rotated matrix was examined, it became apparent that an optimal extraction of 8 factors was preferable. Factors 9 and 10 were couplets (two highly correlating items) and factors 11 and 12 had only three items in each.

The factoring process was repeated using +1.00's in the diagonal entries of the matrix to be factored. Ten factors were extracted since 12 had been patently too many. Again, using the varimax method, nine factors were rotated to optimal orthogonal structure. Once again an extraction of 8 factors seemed to be the best solution. Using a criterion of factor loadings of .300 or greater to assign items to factors, on a rotation of 9 factors, factor 9 consisted of a couplet.

The factor loadings in the eight factor rotated matrix were used to identify items to be assigned to factors. The criteria used for item assignment were:

1. Factor loadings of .300 or greater were used to identify the items that fitted each factor (see criterion "4" for exceptions).

2. Where there was more than one factor loading greater than .299, the highest factor loading was used to assign that item to a factor (see criterion "3" for exceptions).

3. Where an item's factor loadings were almost equal on two or more factors, the item was assigned to the factor having the least number of items in it. The rationale behind this essentially arbitrary decision was that the more items

defining a factor the more reliable that factor became for measuring.

4. Where items did not achieve any factor loadings higher than .299, the item was assigned to the factor on which it loaded highest. The rationale for this decision was based on the fact that instrument revision was not a purpose of this research. Elimination of or improvement of items was beyond the scope of this study. All items were assigned to factors in order to make possible a comparison between the rationally developed subscales and the statistically derived factors.

The eight-factor rotated matrix of loadings is produced in Table 2. This matrix revealed that of the 89 items in the Creekmore instrument, 80 could be assigned to factors with confidence. These items had factor loadings above the established criterion of .300 and one loading sufficiently higher than the rest of the loadings to make factor assignments with confidence. The remaining 9 items required discretionary choices.

The matrix in Table 2 indicated that three items (21, 60, 68) had their highest factor loadings almost equally divided between two factors. These three items were assigned to the factor on which they loaded highest even though the differences between loadings were less than .011. These decisions were made because the factors had approximately equal numbers of items and there was no rationale for any other assignment. For two of these items, numbers 21 and 60, the lowest loading was under .300 although the higher loading was barely over the established criterion of .300 (.302 and .305 respectively).

TABLE 2

Matrix of Factor Loadings

| Items | Factors | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | 532 | 233 | 026 | 089 | 022 | 427 | 090 | -018 |
| 2 | 198 | -009 | -329 | 232 | -168 | 199 | -013 | 029 |
| 3 | 322 | 180 | -029 | 192 | 068 | 139 | 058 | -079 |
| 4 | 411 | 179 | -134 | 041 | 105 | -004 | 052 | 282 |
| 5 | 311 | 335 | -025 | 167 | 043 | 164 | 019 | 197 |
| 6 | 437 | -053 | -033 | 106 | -005 | 086 | -072 | -145 |
| 7 | 607 | 170 | 003 | 044 | -071 | 262 | 071 | 005 |
| 8 | 602 | 152 | -016 | 052 | 109 | -033 | -033 | -140 |
| 9 | 650 | 206 | -038 | 004 | 137 | 139 | 123 | -073 |
| 10 | 023 | -234 | -574 | 115 | -035 | 056 | -121 | 040 |
| 11 | 551 | 244 | 051 | 034 | 182 | 090 | 254 | 004 |
| 12 | 178 | 322 | 124 | 060 | 417 | 073 | 022 | 131 |
| 13 | 160 | 244 | -051 | 543 | 140 | 097 | -093 | -029 |
| 14 | 255 | -052 | 144 | 431 | -029 | -067 | -355 | 176 |
| 15 | 190 | 207 | 099 | 482 | 055 | 071 | 023 | 034 |
| 16 | -030 | 136 | 014 | 437 | -017 | 190 | -073 | 113 |
| 17 | 138 | 073 | 141 | 290 | -130 | 060 | -051 | 217 |
| 18 | 072 | 091 | 036 | 703 | 184 | 007 | -039 | 025 |
| 19 | -126 | -035 | 081 | 290 | -011 | -361 | -289 | 162 |

Note.— All values should be read with three decimal places.
All values without signs should be considered positive.

TABLE 2 (continued)

| Items | Factors | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 20 | 052 | 171 | 004 | 705 | 183 | 033 | -013 | 067 |
| 21 | -052 | -117 | 086 | 080 | -100 | -302 | -033 | 293 |
| 22 | 086 | 046 | 008 | 595 | 180 | 069 | 078 | 038 |
| 23 | 117 | -000 | -055 | 529 | 391 | 087 | 046 | 007 |
| 24 | -026 | 579 | 078 | 074 | 143 | 106 | 065 | -038 |
| 25 | 309 | 637 | 037 | 088 | 128 | 157 | 010 | 025 |
| 26 | 426 | 495 | 098 | -044 | 211 | 014 | 191 | 042 |
| 27 | 284 | 682 | 030 | 031 | -036 | 163 | 274 | 030 |
| 28 | 438 | 568 | -031 | 106 | 041 | 143 | 147 | -011 |
| 29 | 353 | 678 | -029 | 107 | 112 | 190 | 061 | 033 |
| 30 | 266 | 535 | 002 | 111 | 169 | 035 | 073 | -025 |
| 31 | 335 | 511 | -025 | 139 | 079 | 106 | 165 | 050 |
| 32 | 015 | 673 | 002 | 153 | 094 | 088 | 148 | 097 |
| 33 | 364 | 453 | 041 | 051 | 288 | 014 | 250 | 133 |
| 34 | 162 | 212 | -035 | 153 | 645 | 035 | -008 | 094 |
| 35 | 154 | 179 | -187 | -079 | 084 | 164 | -135 | 424 |
| 36 | 093 | 218 | -115 | -119 | 074 | 114 | -055 | 583 |
| 37 | -062 | 026 | 148 | 054 | 071 | 051 | 049 | 488 |
| 38 | 201 | 032 | -292 | 086 | -027 | -019 | -196 | 252 |
| 39 | -037 | -051 | -235 | 093 | 037 | 006 | 076 | 317 |
| 40 | -225 | -022 | 168 | 095 | 181 | -094 | 087 | 410 |

TABLE 2 (continued)

| Items | Factors | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 41 | -014 | -089 | -337 | -006 | 193 | -223 | -099 | 217 |
| 42 | 209 | -093 | -097 | -001 | 037 | -035 | -107 | 353 |
| 43 | -086 | 050 | 006 | 081 | 040 | 159 | 038 | 426 |
| 44 | 005 | 050 | 048 | 090 | 118 | 019 | 123 | 617 |
| 45 | 119 | 045 | 091 | 152 | 583 | -063 | 001 | 199 |
| 46 | 290 | 221 | 138 | -107 | 045 | 043 | 620 | -071 |
| 47 | 020 | 135 | 050 | 070 | -033 | 004 | 501 | 048 |
| 48 | 436 | 192 | 103 | 066 | 118 | 335 | 399 | -124 |
| 49 | 419 | 361 | 227 | 064 | 012 | 266 | 406 | -109 |
| 50 | 282 | 279 | 120 | -075 | -085 | 083 | 475 | 096 |
| 51 | 098 | 291 | -140 | -204 | 138 | 073 | 633 | 065 |
| 52 | 219 | 105 | -053 | -012 | 087 | 216 | 542 | 066 |
| 53 | 074 | 167 | -199 | -370 | 137 | 201 | 549 | 004 |
| 54 | 338 | -102 | 336 | 078 | 054 | 095 | 444 | 058 |
| 55 | 222 | 069 | 204 | -101 | 041 | 384 | 309 | 051 |
| 56 | 181 | 083 | 204 | 146 | 575 | 164 | -018 | 053 |
| 57 | 414 | 142 | 207 | 168 | 227 | -041 | 164 | 037 |
| 58 | 547 | 332 | -037 | 123 | 191 | -057 | 021 | 029 |
| 59 | 497 | 429 | 022 | 142 | 112 | 153 | 087 | 058 |
| 60 | 154 | -294 | -305 | 101 | 156 | -207 | -032 | -008 |
| 61 | 208 | 216 | -206 | -054 | 278 | 220 | -382 | 071 |

TABLE 2 (continued)

| Items | Factors | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 62 | 428 | 277 | -114 | 224 | 105 | 165 | -008 | 005 |
| 63 | 481 | 186 | -093 | -065 | -018 | 181 | 239 | -053 |
| 64 | 393 | 029 | 071 | 059 | 215 | 010 | 140 | 191 |
| 65 | 439 | -128 | 011 | 006 | 228 | 055 | 016 | 252 |
| 66 | 545 | 067 | -004 | 073 | 190 | -039 | 152 | 150 |
| 67 | 297 | 145 | -178 | -105 | 327 | 180 | -263 | 204 |
| 68 | 226 | 338 | 346 | 183 | -044 | 311 | -039 | -025 |
| 69 | 181 | -105 | 363 | 261 | -163 | 246 | 121 | 121 |
| 70 | 081 | -011 | 593 | 198 | -013 | 338 | -159 | 034 |
| 71 | -079 | 088 | 710 | -061 | 101 | -040 | 012 | -003 |
| 72 | -001 | -004 | 599 | 262 | 014 | 314 | -159 | 093 |
| 73 | 015 | -114 | 500 | 024 | 271 | -055 | 111 | 051 |
| 74 | 136 | 178 | 504 | 143 | -034 | 317 | 130 | 008 |
| 75 | -077 | -096 | 444 | 256 | 175 | 239 | 055 | 086 |
| 76 | -031 | -125 | 376 | 370 | 030 | -010 | -069 | -102 |
| 77 | -013 | -008 | 700 | 003 | 055 | 028 | -039 | -026 |
| 78 | 176 | 052 | 221 | 178 | 600 | 168 | -014 | 018 |
| 79 | 093 | 189 | 067 | 110 | 196 | 655 | 010 | 090 |
| 80 | -029 | 414 | 043 | 027 | 076 | 355 | 156 | 101 |
| 81 | 104 | 158 | -141 | 102 | 397 | 131 | 226 | 077 |
| 82 | 235 | 273 | -111 | 189 | 224 | 287 | 295 | 095 |

TABLE 2 (continued)

| Items | Factors | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 83 | 139 | 202 | 122 | 123 | 195 | 580 | 124 | 125 |
| 84 | 125 | 127 | 146 | 124 | 189 | 546 | -019 | 184 |
| 85 | -040 | 317 | 198 | 081 | 079 | 486 | 270 | 135 |
| 86 | 135 | 362 | 106 | 121 | 084 | 415 | 160 | 025 |
| 87 | 249 | 072 | 170 | 190 | 082 | 654 | 069 | 024 |
| 88 | 057 | 180 | -114 | 082 | 439 | 315 | 209 | 076 |
| 89 | 164 | 158 | 143 | 056 | 619 | 246 | 020 | 028 |

Items 38, 48, 49, and 76 had similar loadings on two or more factors. However, these items were assigned to factors on which they had a lower factor loading to more nearly equalize the number of items in the factors. This procedure is justifiable, according to statisticians, when loadings are extremely close; in these cases all differences were .040 or less. The justification for these decisions was based on the fact that a factor more reliably measures a dimension or concept if it encompasses numerous items. All four of these items loaded first on factors one or three, the two factors with the largest number of items. Assignment of them to their second highest loading placed them in factors seven or eight, factors comprising a fewer number of items. It is common in factor analysis for the first factor to contain a disproportionately large number of items and for succeeding factors to have a descending number of items in them. It is true that the lowest loading items on these large factors can be assigned effectively to other factors for increased reliability of measurement. For the highest factor loadings for each item, see Table 3.

Three items received no factor loadings above .299. Item 38 was discussed above. Because of the nature of this study no items were omitted, so items 82 and 17 were assigned to the factor of highest loading for each item although below the established criterion for confident assignment. Item 17 did have one definite high loading of .290 and the next highest loading for that item was .217, a difference of .073. Item 82, however, was split fairly evenly between too many factors to load meaningfully on any one factor. These three items can be designated as weak and might be considered for elimination in a

TABLE 3

Significant Factor Loadings for Each Item

| Item | Factors | | | | | | | |
|------|---|---|---|---|---|---|---|---|
|      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1    | 532 |     |      |     |     | 427 | | |
| 2    |     |     | -329 |     |     |     | | |
| 3    | 322 |     |      |     |     |     | | |
| 4    | 411 |     |      |     |     |     | | |
| 5    | 311 | 335 |      |     |     |     | | |
| 6    | 437 |     |      |     |     |     | | |
| 7    | 607 |     |      |     |     |     | | |
| 8    | 602 |     |      |     |     |     | | |
| 9    | 650 |     |      |     |     |     | | |
| 10   |     |     | -574 |     |     |     | | |
| 11   | 551 |     |      |     |     |     | | |
| 12   |     | 322 |      |     | 417 |     | | |
| 13   |     |     |      | 543 |     |     | | |
| 14   |     |     |      | 431 |     | -355 | | |
| 15   |     |     |      | 482 |     |     | | |
| 16   |     |     |      | 437 |     |     | | |
| 17[a] |    |     |      | 290 |     |     | | |
| 18   |     |     |      | 703 |     |     | | |

Note.— All values should be read with three decimal places.
All values without signs should be considered positive.
[a] All factor loadings were below the established criterion of .300.

TABLE 3 (continued)

| Item | Factors | | | | | | | |
|------|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 19 | | | | | | -361 | | |
| 20 | | | | 705 | | | | |
| 21 | | | | | | -302 | | 293 |
| 22 | | | | 595 | | | | |
| 23 | | | | 529 | 391 | | | |
| 24 | | 579 | | | | | | |
| 25 | 309 | 637 | | | | | | |
| 26 | 426 | 495 | | | | | | |
| 27 | | 682 | | | | | | |
| 28 | 438 | 568 | | | | | | |
| 29 | 353 | 678 | | | | | | |
| 30 | | 535 | | | | | | |
| 31 | 335 | 511 | | | | | | |
| 32 | | 673 | | | | | | |
| 33 | 364 | 453 | | | | | | |
| 34 | | | | | 645 | | | |
| 35 | | | | | | | | 424 |
| 36 | | | | | | | | 583 |
| 37 | | | | | | | | 488 |
| 38[a] | | | -292 | | | | | 252 |
| 39 | | | | | | | | 317 |

TABLE 3 (continued)

| Item | Factors | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 40 | | | | | | | | 410 |
| 41 | | | -337 | | | | | |
| 42 | | | | | | | | 352 |
| 43 | | | | | | | | 426 |
| 44 | | | | | | | | 617 |
| 45 | | | | | 583 | | | |
| 46 | | | | | | | 620 | |
| 47 | | | | | | | 501 | |
| 48 | 436 | | | | | 335 | 339 | |
| 49 | 419 | 361 | | | | | 406 | |
| 50 | | | | | | | 475 | |
| 51 | | | | | | | 633 | |
| 52 | | | | | | | 542 | |
| 53 | | | | -370 | | | 549 | |
| 54 | 338 | | 336 | | | | 444 | |
| 55 | | | | | | 384 | 309 | |
| 56 | | | | | 575 | | | |
| 57 | 414 | | | | | | | |
| 58 | 547 | 332 | | | | | | |
| 59 | 497 | 429 | | | | | | |
| 60 | | -294 | -305 | | | | | |

TABLE 3 (continued)

| Item | Factors | | | | | | | |
|------|------|------|------|------|------|------|------|------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 61 | | | | | | | 382 | |
| 62 | 428 | | | | | | | |
| 63 | 481 | | | | | | | |
| 64 | 393 | | | | | | | |
| 65 | 439 | | | | | | | |
| 66 | 545 | | | | | | | |
| 67 | | | | | 327 | | | |
| 68 | | 338 | 346 | | | 311 | | |
| 69 | | | 363 | | | | | |
| 70 | | | 593 | | | 338 | | |
| 71 | | | 710 | | | | | |
| 72 | | | 599 | | | 314 | | |
| 73 | | | 500 | | | | | |
| 74 | | | 504 | | | 317 | | |
| 75 | | | 444 | | | | | |
| 76 | | | 376 | 370 | | | | |
| 77 | | | 700 | | | | | |
| 78 | | | | | 600 | | | |
| 79 | | | | | | 655 | | |
| 80 | | 414 | | | | 355 | | |
| 81 | | | | | 397 | | | |

TABLE 3 (continued)

| Item | Factors | | | | | | | |
|------|-----|-----|---|---|-----|-----|-----|---|
|      | 1   | 2   | 3 | 4 | 5   | 6   | 7   | 8 |
| 82[a] | 235 | 273 |   |   | 224 | 287 | 295 |   |
| 83   |     |     |   |   |     | 580 |     |   |
| 84   |     |     |   |   |     | 546 |     |   |
| 85   |     | 317 |   |   |     | 486 |     |   |
| 86   |     | 362 |   |   |     | 415 |     |   |
| 87   |     |     |   |   |     | 654 |     |   |
| 88   |     |     |   |   | 439 | 315 |     |   |
| 89   |     |     |   |   | 619 |     |     |   |

revision of the scale.

Examination of the factor assignments in Table 4 indicated eight distinct clusters of items, two of these clusters occurring on factor one. Less obvious was the cluster of items on factor five. Seven of these items in factor five were the last items in each of Creekmore's subscales. A listing of items composing each of the eight factors is given in Table 5.

When a factor was identified with the subscale from which most of its items came, such as shown in Table 3, the amount of congruence between factors and subscales became apparent prior to further statistical analysis of the hypotheses in question. In the case of each subscale there was at least a 50% item agreement with one of the factors. Subscale three had a 90% agreement with items on factor two; 87% of the items on subscale nine can be found on factor five but only eight items were in this subscale; four scales (2, 4, 5, and 7) had an 82% agreement with factors 4, 8, 7, and 3 respectively. The numbers of items common to each subscale and factor are shown in Table 6.

## Comparison of Item Assignments by Cluster and Factor Scores

For each subject, eight factor scores and nine Creekmore scores were computed. Pearson product moment correlations were used to determine the interrelationships among the two sets of scores.

Because of the large sample size used in this study, as well as the internal consistency and degree of correspondence between the items in the instrument, a large number of coefficients were significant at

TABLE 4

Item Assignments to Factors

| Items | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 1 | X | | | | | | | |
| **Subscale 1** | | | | | | | | |
| 2 | | | X | | | | | |
| 3 | X | | | | | | | |
| 4 | X | | | | | | | |
| 5 | | X | | | | | | |
| 6 | X | | | | | | | |
| 7 | X | | | | | | | |
| 8 | X | | | | | | | |
| 9 | X | | | | | | | |
| 10 | | | X | | | | | |
| 11 | X | | | | | | | |
| 12 | | | | | X | | | |
| **Subscale 2** | | | | | | | | |
| 13 | | | | X | | | | |
| 14 | | | | X | | | | |
| 15 | | | | X | | | | |
| 16 | | | | X | | | | |
| 17[a] | | | | X | | | | |

Note.— [a]Discretionary assignments

TABLE 4 (continued)

| Items | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 18 | | | | X | | | | |
| 19 | | | | | | X | | |
| 20 | | | | X | | | | |
| 21[a] | | | | | | X | | |
| 22 | | | | X | | | | |
| 23 | | | | X | | | | |
| Subscale 3 | | | | | | | | |
| 24 | | X | | | | | | |
| 25 | | X | | | | | | |
| 26 | | X | | | | | | |
| 27 | | X | | | | | | |
| 28 | | X | | | | | | |
| 29 | | X | | | | | | |
| 30 | | X | | | | | | |
| 31 | | X | | | | | | |
| 32 | | X | | | | | | |
| 33 | | X | | | | | | |
| 34 | | | | | X | | | |
| Subscale 4 | | | | | | | | |
| 35 | | | | | | | | X |
| 36 | | | | | | | | X |
| 37 | | | | | | | | X |

TABLE 4 (continued)

| Items | Factors | | | | | | | |
|-------|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 38[a] | | | | | | | | X |
| 39 | | | | | | | | X |
| 40 | | | | | | | | X |
| 41 | | | X | | | | | |
| 42 | | | | | | | | X |
| 43 | | | | | | | | X |
| 44 | | | | | | | | X |
| 45 | | | | | X | | | |
| Subscale 5 | | | | | | | | |
| 46 | | | | | | | X | |
| 47 | | | | | | | X | |
| 48[a] | | | | | | | X | |
| 49[a] | | | | | | | X | |
| 50 | | | | | | | X | |
| 51 | | | | | | | X | |
| 52 | | | | | | | X | |
| 53 | | | | | | | X | |
| 54 | | | | | | | X | |
| 55 | | | | | | X | | |
| 56 | | | | | X | | | |

TABLE 4 (continued)

| Items | Factors | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Subscale 6 | | | | | | | | |
| 57 | X | | | | | | | |
| 58 | X | | | | | | | |
| 59 | X | | | | | | | |
| 60[a] | | | X | | | | | |
| 61 | | | | | | | X | |
| 62 | X | | | | | | | |
| 63 | X | | | | | | | |
| 64 | X | | | | | | | |
| 65 | X | | | | | | | |
| 66 | X | | | | | | | |
| 67 | | | | | X | | | |
| Subscale 7 | | | | | | | | |
| 68[a] | | | X | | | | | |
| 69 | | | X | | | | | |
| 70 | | | X | | | | | |
| 71 | | | X | | | | | |
| 72 | | | X | | | | | |
| 73 | | | X | | | | | |
| 74 | | | X | | | | | |
| 75 | | | X | | | | | |

TABLE 4 (continued)

| Items | Factors | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 76[a] | | | | X | | | | |
| 77 | | | X | | | | | |
| 78 | | | | | X | | | |
| Subscale 8 | | | | | | | | |
| 79 | | | | | | X | | |
| 80 | | X | | | | | | |
| 81 | | | | | X | | | |
| 82[a] | | | | | | | X | |
| 83 | | | | | | X | | |
| 84 | | | | | | X | | |
| 85 | | | | | | X | | |
| 86 | | | | | | X | | |
| 87 | | | | | | X | | |
| 88 | | | | | X | | | |
| 89 | | | | | X | | | |

TABLE 5

Listing of Items Assigned to Factors

| Factors | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | 5 | 2 | 13 | 12 | 19 | 46 | 35 |
| 3 | 24 | 10 | 14 | 34 | 21 | 47 | 36 |
| 4 | 25 | 41 | 15 | 45 | 55 | 48 | 37 |
| 6 | 26 | 60 | 16 | 56 | 79 | 49 | 38 |
| 7 | 27 | 68 | 17 | 67 | 83 | 50 | 39 |
| 8 | 28 | 69 | 18 | 78 | 84 | 51 | 40 |
| 9 | 29 | 70 | 20 | 81 | 85 | 52 | 42 |
| 11 | 30 | 71 | 22 | 88 | 86 | 53 | 43 |
| 57 | 31 | 72 | 23 | 89 | 87 | 54 | 44 |
| 58 | 32 | 73 | 76 | | | 61 | |
| 59 | 33 | 74 | | | | 82 | |
| 62 | 80 | 75 | | | | | |
| 63 | | 77 | | | | | |
| 64 | | | | | | | |
| 65 | | | | | | | |
| 66 | | | | | | | |

# TABLE 6

Numbers and Percentages of Items
Common to Factors and Subscales

| Factors | Creekmore Subscales | | | | | | | | | % Agreement |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7 | | | | | 8 | | | | 68[a] |
| 2 | | | 10 | | | | | | | 90 |
| 3 | | | | | | | 9 | | | 82 |
| 4 | | 9 | | | | | | | | 82 |
| 5 | | | | | | | | | 7[b] | 87 |
| 6 | | | | | | | | 6 | | 54 |
| 7 | | | | | 9 | | | | | 82 |
| 8 | | | | 9 | | | | | | 82 |

Note.— Subscales one through eight contained 11 items each.
[a]Factor one included items from subscales one and six.
[b]There were only eight items on subscale nine.

the $\alpha$ = .01 and $\alpha$ = .001 levels. Although significant r's may properly lead to rejection of the null hypotheses, a more meaningful concept in interpretation of these data was that of the magnitude of correlation rather than the significance levels. For the purposes of this study the following operational definitions of small, medium, and large effective sizes of r were:

| small | r = .100 | $R^2$ = .01 |
| medium | r = .300 | $R^2$ = .09 |
| large | r = .500 | $R^2$ = .25 |

(Cohen, 1969, p. 76).

The matrix of correlation coefficients in Table 7 indicated the relationship between the nine Creekmore subscales and the eight factors. All but 11 coefficients were significant at the .001 level of probability and there were 22 coefficients of .500 or higher indicating very strong relationships. However, there were 9 extremely large coefficients, .800 or .900, indicating very strong correspondences between factor and subscale pairings. There were very large relationships between factor one, and two subscales—one and six. Some of the factors were more clearly related to only one subscale than were others but all factors had a very strong relationship to at least one subscale.

| | |
|---|---|
| Factor one to subscale one | .852 |
| Factor one to subscale six | .897 |
| Factor two to subscale three | .984 |
| Factor three to subscale seven | .912 |
| Factor four to subscale two | .961 |
| Factor five to subscale nine | .942 |

TABLE 7

Correlations Between Subscale Scores and Factor Scores

| Subscales | Factors | | | | | | | |
|:---:|:---:|:---:|:---:|:---:|:---:|:---:|:---:|:---:|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | 852 | 628 | -015 | 337 | 492 | 428 | 417 | 165 |
| 2 | 296 | 275 | 198 | 961 | 353 | 123 | 006 | 210 |
| 3 | 664 | 984 | 197 | 324 | 551 | 519 | 547 | 176 |
| 4 | 188 | 172 | -102 | 206 | 386 | 085 | 015 | 952 |
| 5 | 539 | 576 | 272 | 095 | 406 | 576 | 966 | 058 |
| 6 | 897 | 587 | 029 | 334 | 557 | 382 | 379 | 227 |
| 7 | 200 | 234 | 912 | 408 | 332 | 403 | 199 | 025 |
| 8 | 536 | 634 | 353 | 357 | 663 | 866 | 509 | 227 |
| 9 | 483 | 454 | 196 | 471 | 942 | 398 | 249 | 270 |

Note.   All values should be read with three decimal places.
        All values without signs should be considered positive.
$p < .05 = .088$
$p < .01 = .115$
$p < .001 = .147$
$n = 500$

Factor six to subscale eight            .866

Factor seven to subscale five           .966

Factor eight to subscale four            .952

It should be noted that coefficients of this magnitude are seldom found in the behavioral sciences other than as reliability coefficients on standardized testing instruments.

## Comparison of Item Assignments by "Item-Subject" Correlations

The preceding comparison of item assignments, by means of subjects' scores on the two sets of measures, subscales and factors, was an indirect and non-definitive test of the question of similarities and differences between the item assignments. Another method allowed a more direct comparison of the empirical assignments and the factorial assignments. This method required the consideration of each scale item as if it were an "item-subject." These "item-subjects" had a score on one or more of the Creekmore subscales[1] and on only one factor. In each case the position was always "yes" or "no," that is, scored on that subscale or factor or not scored on that subscale or factor.

These two sets of dichotomous scores were then correlated using the phi ($\phi$) coefficient which is a Pearson correlation coefficient used when both variables are dichotomous. Since all the hypotheses were non-directional, a two-tail test of significance was applied. The following are the significant values of $\phi$ with 87 degrees of freedom:

---

[1] All items were scored on only one of the subscales except for eight items which were items 12, 23, 34, 45, 56, 67, 78, and 89. The last item in each subscale could have been combined to make a ninth scale and these eight items could have been scored on two of Creekmore's subscales.

$$p < .05 \qquad \phi = 0.209$$

$$p < .01 \qquad \phi = 0.272$$

$$p < .001 \qquad \phi = 0.344$$

The 72 entry correlation matrix, reproduced in Table 8 demonstrated that there were, indeed, strong correlations between the two sets of measures. Among the 72 correlations there were 9 highly significant coefficients ($p < .001$), one corresponding with each subscale. Two of these coefficients were recorded on the same factor; that is, subscales one and six correlated highly with factor one. Stated another way, there were significant relationships between each factor and one of the subscales, except for one factor which was significantly related to two subscales.

Factor one was related to subscales one and six.

Factor two was related to subscale three.

Factor three was related to subscale seven.

Factor four was related to subscale two.

Factor five was related to subscale nine.

Factor six was related to subscale eight.

Factor seven was related to subscale five.

Factor eight was related to subscale four.

That there was not perfect correspondence between the two measures can be seen by the number of coefficients that reached significance, but at a lower level ($p < .05$ or $p < .01$), indicating some lesser relationships between other factors and subscales. Tables 7 and 8 indicate that the highly significant correlation coefficients occurred between the same factors and subscales in both correlational analyses.

TABLE 8

Phi Coefficient Correlations
Between Factor and Subscale Assignments

| Sub-scales | Factors | | | | | | | |
|:---:|:---:|:---:|:---:|:---:|:---:|:---:|:---:|:---:|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | 447*** | -048 | 038 | -133 | -013 | -126 | -141 | -126 |
| 2 | -176 | -148 | -155 | 839*** | -126 | 101 | -141 | -126 |
| 3 | -176 | 851*** | -155 | -134 | -013 | -126 | -141 | -126 |
| 4 | -176 | -148 | -057 | -134 | -013 | -126 | -141 | 893*** |
| 5 | -176 | -148 | -155 | -134 | -013 | -127 | 793*** | -126 |
| 6 | 535*** | -148 | -059 | -134 | -013 | -126 | -037 | -126 |
| 7 | -176 | -148 | 715*** | -026 | -013 | -126 | -141 | -126 |
| 8 | -176 | -048 | -155 | -134 | 214* | 554*** | -037 | -126 |
| 9 | -147 | -124 | -130 | -013 | 808*** | -105 | -118 | -105 |

Note.——All values should be read with three decimal places.
All values without signs should be considered positive.
*p < .05 with 87 df = .209
**p < .01 with 87 df = .272
***p < .001 with 87 df = .344

One of the weaknesses of the phi coefficient in testing the hypothesis of correspondence between the two sets of measures was that, by dichotomizing the "item-subject" assignments to factors into "yes" or "no," valuable information contained in the factor loadings was disregarded. When each item in the total scale was entered into the factor scoring according to the size of the factor loadings (disregarding signs), point biserial coefficients (the Pearson correlation coefficient for one dichotomous and one continuous variable) were computed. The interpretations of the resulting 72 point biserial values were the same as for the phi values. This correlation matrix is shown in Table 9.

Differences can be noted between Table 8 and Table 9. When considering the differential weighting of the factor loadings, instead of just factor assignments in the correlations, the relationships of the items were dispersed among several factors (even a very small factor loading indicates some correspondence between item and factor). Therefore, the coefficients in Table 9 were lower in some instances, and on some factors there were more significant correlation coefficients but at higher probability levels. However, the major significant relationships remained essentially the same as on the two previous correlational analyses.

## Comparison of Item Assignment by means of Chi Square Test of Independence

Another method of evaluating the congruence between the two sets of measures involved performing a chi square test for independence between

TABLE 9

Point Biserial Correlations
Between Factor Loadings and Subscale Assignments

| Sub-scales | Factors | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | 370*** | -054 | -257* | -058 | -134 | -050 | -094 | -178 |
| 2 | -237* | -174 | -022 | 725*** | -120 | -291** | -297** | 019 |
| 3 | 129 | 693*** | -075 | -073 | 091 | -072 | 083 | 137 |
| 4 | -326** | -243* | -226* | -174 | -008 | -254* | -195 | 757*** |
| 5 | 067 | -003 | 053 | -347** | -070 | 080 | 693*** | -205 |
| 6 | 390*** | -069 | 199 | -130 | 119 | -153 | -134 | -020 |
| 7 | -280** | -268** | 734*** | 091 | -090 | 079 | -170 | 197 |
| 8 | -171 | 105 | -003 | -027 | 236* | 605*** | 109 | -139 |
| 9 | -042 | -058 | 008 | 043 | 736*** | -033 | -175 | -002 |

Note.——All values should be read with three decimal places.
        All values without signs should be considered positive.
*$p < .05$ with 87 df = .209
**$p < .01$ with 87 df = .272
***$p < .001$ with 87 df = .344

the item assignments on each Creekmore subscale and each factor. Of
the 72 chi square tests, 9 were statistically significant at $p <$ .001.
Table 10 gives the chi square values. The highly significant chi
squares expressed the same magnitude of relationships between factors
and subscales as the correlational analyses shown in Tables 8 and 9.
The nine significant chi square contingency tables are reproduced in
Appendix G.

Chi square can be derived from $\phi$ by means of the following
formula:

$$\chi^2 = N \phi^2$$

In one sense, the chi square analysis was repetitious. However, it
does serve to indicate again not only the existing relationships but
the magnitude of them. The extremely high $\chi^2$s indicated a close
correspondence and dependence between the two samples, the items of a
particular factor and the items of a particular subscale.

## Reliability of Item Assignments

The 25 X 25 matrix of correlation coefficients produced for the
preceding analyses yielded one further set of correlations, the point
biserial coefficients between item assignments to factors and factor
loadings. These coefficients, produced in Table 11 served to indicate
the degree of reliability of the item assignments. There was a highly
significant relationship ($p <$ .001) between each factor and the load-
ings of the factor items.

## TABLE 10

### Chi Square Values Between Factor and Subscale Item Assignments

| Sub-scales | Factors | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | 14.387* | .000 | .009 | .563 | .171 | .428 | .707 | .428 |
| 2 | 1.536 | .859 | 1.018 | 54.890* | .428 | .171 | .707 | .428 |
| 3 | 1.536 | 57.150* | 1.018 | .563 | .171 | .428 | .707 | .428 |
| 4 | 1.536 | .860 | .009 | .563 | .171 | .428 | .707 | 62.281* |
| 5 | 1.536 | .860 | 1.018 | .563 | .171 | .171 | 48.825* | .428 |
| 6 | 21.454* | .860 | .009 | .563 | .171 | .428 | .019 | .428 |
| 7 | 1.536 | .860 | 39.516* | .073 | .171 | .428 | .707 | .428 |
| 8 | 1.536 | .000 | 1.018 | .563 | 2.198 | 21.969* | .019 | .428 |
| 9 | .820 | .394 | .492 | .219 | 48.938* | .144 | .303 | .144 |

Note.— Chi square with one df at $p < .001 = 10.827$
*$p < .001$

TABLE 11

Correlations Between Item Assignments to Factors
and Factor Loadings

| Factors | Factor Loadings | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | 706*** | -000 | -140 | -110 | -050 | -089 | 007 | -194 |
| 2 | 110 | 727*** | -073 | -085 | -042 | -006 | 098 | -107 |
| 3 | 292** | 385*** | 356*** | 022 | -227* | -030 | -211* | -146 |
| 4 | -183 | -148 | 020 | 780*** | -067 | -150 | -248* | -092 |
| 5 | -070 | -024 | -037 | -059 | 769*** | 015 | -107 | 012 |
| 6 | -204 | -054 | 111 | -018 | -093 | 385*** | -026 | 064 |
| 7 | 074 | 053 | 050 | 330** | -094 | 072 | 627*** | -190 |
| 8 | 299** | -198 | -185 | -169 | -125 | -166 | -163 | 768*** |

Note.— All values should be read with three decimal places.
        All values without signs should be considered positive.
*p $<$ .05 with 87 df = .209
**p $<$ .01 with 87 df = .272
***p $<$ .001 with 87 df = .344

## Other findings

Table 12 and Table 13 present part of the total correlation matrix showing the degree of relationship between the subscales and total composite scale (Table 12) and between the factors (Table 13). Significance alone was not a meaningful concept. All but five coefficients were significant beyond the .001 level of probability, indicating a high degree of internal consistency for the instrument. These figures indicate that the instrument could be shortened without loss of reliability.

Tables 12 and 13 indicated a close proximity between factors and subscale clusters. The factors with the highest relationships, for example, factor 1 with 2, 5, 6, and 7 were similar to the subscales which correlated highly—subscale 1 with 3, 5, 8, and 9. Also one can note the high degree of relationship between subscales 1 and 6. Of the 22 items on these two subscales, 15 of them were placed on factor 1 by the item assignment following the factor analysis.

The part-whole reliability of the instrument was demonstrated by the high correlations between each subscale and the complete instrument.

Subscale nine which was the eighth item in each subscale has not been used in previous research, but it had a higher correlation with factor five than to any other subscale or the total test score. See Table 7.

TABLE 12

Correlations Between Subscale Scores and Between
Subscale Scores and Total Questionnaire Scores

| Sub-scales | Subscales | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1 | | | | | | | | | |
| 2 | 300 | | | | | | | | |
| 3 | 613 | 282 | | | | | | | |
| 4 | 179 | 244 | 181 | | | | | | |
| 5 | 431 | 036 | 575 | 046 | | | | | |
| 6 | 664 | 297 | 592 | 260 | 434 | | | | |
| 7 | 110 | 330 | 225 | 005 | 254 | 434 | | | |
| 8 | 481 | 289 | 606 | 224 | 530 | 477 | 401 | | |
| 9 | 476 | 445 | 509 | 374 | 364 | 523 | 356 | 552 | |
| Questionnaire | 730 | 519 | 829 | 374 | 670 | 748 | 469 | 788 | 690 |

Note.— All values should be read with three decimal places.
p < .05 = .088
p < .01 = .115
p < .001 = .147
df = 500

TABLE 13

Correlations Between Factors

| Factors | Factors | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | | | | | | | | |
| 2 | 664 | | | | | | | |
| 3 | 132 | 215 | | | | | | |
| 4 | 349 | 318 | 263 | | | | | |
| 5 | 515 | 504 | 185 | 389 | | | | |
| 6 | 477 | 543 | 399 | 253 | 447 | | | |
| 7 | 513 | 558 | 232 | 059 | 311 | 515 | | |
| 8 | 174 | 174 | 028 | 182 | 290 | 129 | 031 | |

Note.— All values should be read with three decimal places.
p < .05 = .088
p < .01 = .115
p < .001 = .147
df = 500

The Underlying Dimensions of Clothing Behavior

Factor Naming

## The Factor Naming Panel

A major purpose of this investigation was to identify the under-lying dimensions of clothing interest behavior. This was accomplished by a factor analysis of the Creekmore (1968) "Importance of Clothing Questionnaire." Extraction of factors resulted in eight factors. The next step was to assign names to each of these factors. The designated names became major constructs or dimensions of clothing behavior determined by the statistical analysis.

In order to name these eight factors, a 17 member panel of clothing and textiles personnel, composed of eight graduate students, five senior undergraduate students, and four faculty members at Virginia Polytechnic Institute and State University, consented to serve in stating a pre-ference of title for each factor. The panel members were given an envelope with an instruction sheet, an answer sheet, and the eight lists of items, one for each factor, printed in order of factor loadings. Copies of the instructions and item lists given to each panel member are in Appendix H.

Following is a report on the factor and subscale item assignments, the percentage of agreement between the two assignments, the panel decisions, the rationale for certain item inclusions, and the final decisions on construct names for each factor. Table 14 lists the titles suggested by the panel, the number of panel members selecting each title, and the final name selected for each factor.

TABLE 14

Panel Decisions and Factor Titles

| Factor | Suggested Titles | Number of Votes |
|--------|------------------|-----------------|
| 1 | personal appearance[a] | 7 |
| | management | 4 |
| | clothing consciousness | 4 |
| | neatness | 2 |
| | | |
| 2 | experimentation with[a] clothing | 7 |
| | interest in new things | 5 |
| | innovativeness | 2 |
| | variety | 2 |
| | others | 1 |
| | | |
| 3 | conformity[a] | 13 |
| | norms | 1 |
| | choices | 1 |
| | others | 2 |
| | | |
| 4 | modesty[a] | 12 |
| | others | 5 |

Note.— [a]Final factor title.

TABLE 14 (continued)

| Factor | Suggested Titles | Number of Votes |
|--------|------------------|-----------------|
| 5 | psychological awareness[a] | 5 |
|   | psychological curiosity | 5 |
|   | others | 7 |
| 6 | self-concept[a] | 7 |
|   | security | 4 |
|   | others | 6 |
| 7 | fashion interest[a] | 8 |
|   | style | 2 |
|   | individualism | 4 |
|   | others | 3 |
| 8 | comfort[a] | 14 |
|   | fit and texture | 2 |
|   | physiological | 1 |

Factor One. As is common in factor analysis, the first factor had the largest number of items assigned to it. It consisted of seven items from Creekmore's subscale one, (aesthetics), eight items from subscale six (management), and item one which was not scored on the original instrument. Item one was used in this analysis, even though it was not used by Creekmore, because of its high loading on factor one. This item had a high loading on factor six also which is understandable considering the wording of the item which pertained to factors one and six. There was a 68% agreement between factor one and subscales one and six: 15 out of a possible 22 items appeared on both.

In naming factor one panel members used many concepts relating to aesthetics and management, but the majority considered the statements to best measure a clothing dimension they called "appearance."

All items assigned to factor one loaded significantly. Although item 3 was the least discriminating, it did not load significantly on any other factor and did fit the construct empirically assigned to factor one. Item 59 had almost as high a loading on factor two (.497 and .429 respectively). It was assigned to factor one in the analysis based on magnitude of loading, and subsequent analysis did not indicate that this decision should have been otherwise.

Many of the judges reported that they had trouble with item 64 (loading of .393). They reported that it did not seem to fit with the remaining items. Examination of the varimax output in Table 2 showed that this item had no other significant loadings, suggesting that it did not belong anywhere else and that it did load significantly on factor one.

Factor one was particularly difficult to name since it included two separate empirical concepts of Creekmore, aesthetics and management. Based on the results of the factor naming panel and the intuitive judgment of this researcher, appearance seemed to be a more inclusive construct, including both interest in aesthetics and personal appearance and the willingness to spend the necessary management time to maintain this appearance.

Factor Two. Twelve items composed factor two, 10 of them were from the third subscale (interest) for a 90% agreement between factor and sub-scale item assignment. All items placed on factor two loaded significantly. Although the differences between loadings on item 5 and item 26 were very close between factors one and two, empirical evaluation indicated the wisdom of the existing assignments.

The panel differed slightly from Creekmore in assigning a construct to this list of 12 items. The majority of members saw factor two as measuring an underlying dimension of clothing behavior that may be labeled "experimentation with clothing." Several panel members used phrases with "interest" in them—interest in trying something new, innovativeness, interest in variety. Even with such a close proximity to Creekmore's interest subscale, "experimentation with clothing" seemed to be a more exact construct, particularly if the entire questionnaire may be called a clothing interest measure. Then all of these constructs are part of clothing interest behavior.

Factor Three. Factor three contained 13 items, 9 from Creekmore's seventh subscale (approval) for an agreement of 82%. All items had significant loadings; items 60 and 68 were two of the items that

required discretionary assignment to factors. Their loadings were close on two or more factors and so were assigned to the factor on which they loaded highest. Subsequent empirical evaluation of these two items did not indicate that they had been misassigned.

The naming panel overwhelmingly voted to call this factor "conformity", a more specific construct than approval, although related. Conformity implies a specific reference group whereas approval, a broader concept, could have several connotations. It would be of interest to investigate whether there are any relationships between this factor and other measures of conforming behavior.

Factor Four. The 10 items in factor four measured the construct of modesty. Nine of the items were from Creekmore's modesty subscale, number two, for an 82% agreement. Twelve panel members believed that the factor measured modesty.

Item 76 was a discretionary item in assignment following the factor analyses. This item loaded almost the same on factor three (.376) and factor four (.370). In this case, in order to achieve greater relia- bility for the factors by assigning more items to measure a construct, item 76 was placed in factor four, the factor with a lesser number of items. Later rational evaluation of this item indicated that the choice may not have been the wisest one, regardless of the moderate factor loading. Items such as number 76 which do not load high on factors may be improved by rewording or eliminated in an instrument revision.

Item 17 did not load above the established criteria of .300, but was assigned to its highest loading factor. Even though this item was thought to measure modesty by Creekmore and was assigned by factor analysis to the modesty construct, it was a weak item.

Factor Five. Factor five contained 9 items, 7 from Creekmore's ninth scale (theoretical) with an 87% agreement between factor and subscale assignments. There were only 8 items on subscale nine instead of the 11 that were on the remaining eight subscales. Although the panel did not clearly identify this dimension of clothing behavior, most of the words and phrases they used to describe the items collectively had to do with psychological elements of behavior: curiosity, why, emotions, analytical. Thus, factor five was labeled by this researcher as "psychological awareness." Seven of the 9 items were the eleventh items on seven of the eight Creekmore subscales, or the items that could be collectively called a ninth scale—theoretical. What was of interest to note was that all of these 7 items loaded higher on factor five than on respective dimensions of clothing behavior of which they had been labeled formerly (by Creekmore) to register the highest intensity. These 7 items represented a separate dimension of clothing behavior to a greater degree than they did as part of the original subscales. Although "psychological awareness" and "theoretical" may be considered similar concepts, this researcher thought there was sufficient indication , upon rational analysis of the items and opinions of panel members to use the former terminology.

Items 81 and 88, not part of Creekmore's scale nine, on first reading, did not seem to fit empirically on this factor. But study of them both indicated that they, too, measured a psychological awareness of the use of clothing to achieve psychological satisfactions.

Factor Six. The nine items of factor six had a 54% agreement with the 11 items on Creekmore's eighth subscale, which she called psychological

dependence. The majority of the panel called this factor "self-concept." The items suggested a use of clothing or dependence upon clothing for self-confidence, security, and self esteem. Therefore, factor six was named "self-concept."

**Factor Seven.** Nine of the items on factor seven came from subscale five (attention). To the panel, however, these items suggested elements of fashion and style so factor seven was titled "fashion interest." This factor contained one item which did not reach the established criteria of a factor loading of .300 or greater for assignment with confidence—item 82. However, examination of this item indicated its appropriateness to this factor on which it did load highest.

**Factor Eight.** All nine items on factor eight came from Creekmore's comfort subscale, number four, for an 82% agreement on item assignments. The panel also unanimously suggested comfort for the name of this factor; even though other terms were used, all were suggestive of the physiological aspects of clothing.

## Summary of Factor Names

In summary, the eight factors resulting from a factor analysis of Creekmore's "Importance of Clothing Questionnaire" were named as follows:

Factor One:  Personal Appearance

Factor Two:  Experimentation with Clothing

Factor Three:  Conformity

Factor Four:  Modesty

Factor Five:  Psychological Awareness

Factor Six:  Self-Concept

Factor Seven:  Fashion Interest

Factor Eight:  Comfort

These eight factor names represented the underlying dimensions of clothing interest as represented by the questionnaire used in this study and identified by factor analysis.  The proximity between these factor names and the basic constructs assigned by Creekmore, et al., (1968) to their subscales can be seen in Table 15.  The validity of the Creekmore constructs can be partially demonstrated by the close correspondence between factor names and subscale names as well as the similarity between the item assignments.

## Definition of Clothing Interest

Using the factor names as verbal representations of the underlying dimensions of clothing interest, a new definition may be proposed, utilizing these constructs.

Clothing interest behavior may be referred to as that part of human behavior specifically related to clothing, its selection, and its use, and its importance as a persistent interest center to an individual.  Clothing interest behavior is made up of concern for personal appearance and the management of clothing to maintain this appearance.  It involves a willingness to experiment with the use of clothing, to be psychologically aware and curious about the effects of clothing on others, to use clothing to bolster self-concept and security, and to be

TABLE 15

A Comparison of
Subscale Names and Factor Names

| Subscales[a] | Name | Factors[b] | Name |
|:---:|:---:|:---:|:---:|
| 1 | aesthetics | 1 | personal appearance |
| 2 | modesty | 4 | modesty |
| 3 | interest | 2 | experimentation with clothing |
| 4 | comfort | 8 | comfort |
| 5 | attention | 7 | fashion interest |
| 6 | management | 1 | personal appearance |
| 7 | approval | 3 | conformity |
| 8 | psychological dependence | 6 | self-concept |
| 9 | theoretical | 5 | psychological awareness |

[a]From Creekmore's "Importance of Clothing Questionnaire.
[b]From factor analysis of this study.

interested in fashion and style. Concern for modesty in clothing, comfort and fit, and some degree of conformity to societal norms is also part of the personality pattern of a person manifesting high interest in clothing.

### Correlational Analysis Between Clothing Interest and Demographic Variables

Every subject in the study received a score on each Creekmore subscale, a composite score for the total questionnaire, and a score for each factor. The means and standard deviations for these 18 scores are listed in Tables 16 and 17.

A Pearson product moment correlation was computed between each score and all demographic variables. These data are presented in Tables 18 and 19.

The same rationale used in interpreting the correlations between factor scores and cluster scores was applied to this analysis. Because of the large sample size, 27 of the 70 coefficients reached significance at the .001 level and 27 failed to reach significance at the .05 level. A more meaningful concept was that of degree of relationships. Applying the criteria of

$\pm$ .300 = moderate relationship

$\pm$ .500 = strong relationship

$\pm$ above .500 = very strong relationship,

Table 18 shows a very strong relationship between subscale 3 (interest) and sex and a moderate relationship between sex and subscales 1, 2, 6, and 8 (aesthetics, modesty, management, and dependence), and the

TABLE 16

Means and Standard Deviations of Subscale Scores

| Subscales | Means | Standard Deviations |
|-----------|-------|---------------------|
| 1 | 40.48 | 5.57 |
| 2 | 29.32 | 6.36 |
| 3 | 35.93 | 9.27 |
| 4 | 35.58 | 5.19 |
| 5 | 29.72 | 7.16 |
| 6 | 37.80 | 6.28 |
| 7 | 29.59 | 5.99 |
| 8 | 36.21 | 6.76 |
| 9 | 23.58 | 5.24 |
| Total Test | 274.64 | 34.62 |

Note.— Possible range:
Subscales 1 - 8 = 11 - 55
Subscale     9   =  8 - 40
Total Test       = 89 - 445

TABLE 17

Means, Standard Deviations, and
Possible Range of Factor Scores

| Factors | Means | S. D. | Possible Range |
|---------|-------|-------|----------------|
| 1 | 57.49 | 9.26 | 16 - 80 |
| 2 | 39.84 | 9.86 | 12 - 60 |
| 3 | 10.79 | 6.58 | 13 - 65 |
| 4 | 27.19 | 6.26 | 10 - 50 |
| 5 | 26.34 | 5.63 | 9 - 45 |
| 6 | 19.19 | 5.39 | 9 - 45 |
| 7 | 22.64 | 6.78 | 11 - 55 |
| 8 | 30.15 | 4.52 | 9 - 45 |

TABLE 18

Correlations Between Subscale Scores,
Questionnaire Score, and Demographic Variables

| Sub-scales | Variables | | | | | | |
|:---:|:---:|:---:|:---:|:---:|:---:|:---:|:---:|
| | Age | Sex | Marital Status | Class | College | Major | S. E. Status |
| 1 | 126 | 356* | -116 | -232 | -272 | -214 | -029 |
| 2 | 154 | 331* | -095 | -264 | -165 | 068 | -080 |
| 3 | 196 | 549** | -187 | -293 | -405* | -269 | -050 |
| 4 | 044 | 103 | 015 | -076 | -053 | 009 | 081 |
| 5 | 082 | 167 | -094 | -084 | -169 | -275 | -012 |
| 6 | 121 | 362* | -096 | -189 | -240 | -212 | 025 |
| 7 | 055 | 070 | -049 | -092 | -019 | -002 | 059 |
| 8 | 090 | 366* | -053 | -205 | -270 | -118 | 001 |
| 9 | 126 | 240 | -062 | -218 | -240 | -089 | 023 |
| Total Score | 174 | 464* | -140 | -283 | -325* | -222 | 008 |

Note.— All values should be read with three decimal places.
        All values without signs should be considered positive.
$p < .05 = .088$
$p < .01 = .115$
$p < .001 = .147$
$df = 500$
 * moderate relationship
** strong relationship

TABLE 19

Correlations Between Factor Scores
and Demographic Variables

| Factors | Variables | | | | | | |
|---|---|---|---|---|---|---|---|
| | Age | Sex | Marital Status | Class | College | Major | S. E. Status |
| 1 | 131 | 352* | -127 | -205 | -257 | -264 | 002 |
| 2 | 199 | 571** | -186 | -301* | -408* | -265 | -052 |
| 3 | 047 | 043 | -039 | -065 | 003 | -027 | 060 |
| 4 | 155 | 344* | -105 | -261 | -169 | 060 | -073 |
| 5 | 107 | 271 | -048 | -191 | -247 | -139 | 045 |
| 6 | 047 | 262 | -051 | -142 | -198 | -095 | 006 |
| 7 | 076 | 161 | -089 | -078 | -158 | -280 | -041 |
| 8 | 030 | 119 | 007 | -059 | -039 | 021 | 075 |

Note.— All values should be read with three decimal places.
All values without signs should be considered positive.
p < .05 = .088
p < .01 = .115
p < .001 = .147
df = 500
* moderate relationship
** strong relationship

total test scores and sex. Moderate relationships occurred between college and the interest subscale and total test score.

Similar relationships occurred between sex and factors 1, 2, and 4 (appearance, experimentation, and modesty) and between college and factor 2 (experimentation).

While results of this study did not indicate definitive relationships between any of the scores and the demographic variables, there was an appreciable one between clothing interest and sex, women scoring significantly higher on clothing interest in general and on the specific aspects of aesthetics, modesty, management, and dependence. The relationship between clothing interest and college was also strong. In this particular study, these relationships would seem logical since the college identified in question 95 was the College of Home Economics, predominantly women students.

Although there were significant correlations scattered between specific aspects of clothing behavior and the other variables (see Tables 18 and 19), the results of this study do not indicate even a moderate relationship between clothing interest and age, marital status, major in college, or socioeconomic class.

## Order of Clothing Interest

### Subscales

Table 16 contains the means and standard deviations for the total sample scores on the nine Creekmore subscales indicating the rank order

of importance of these nine aspects of clothing behavior for the entire

sample of 500 subjects. The first eight scales were directly comparable

because they contained an equal number of items. Scale number nine,

with fewer items on it, had a possible range of 8-40 and although its

mean cannot be compared directly to the means of the other eight scales

for ranking purposes, its relative importance to the group can be

estimated as approximately at the mid-point of the five point scale of

"Always" to "Never." Subjects registered highest agreement with the

aesthetics subscale—number one. The mean score of the management

subscale was slightly less and ranked second. None of the other means

were appreciably above the mid-point, in fact the means for the total

questionnaire for the entire group registered only slightly above

mid-point in clothing interest.

The findings indicated for this particular sample of 500 subjects

that they were most concerned with or interested in the aesthetics and

management aspects of clothing importance as measured by the

"Importance of Clothing Questionnaire" and least concerned with

approval and modesty. They were not highly interested in the

importance of clothing in general. The importance of the eight aspects

of clothing behavior can be ranked in the following order: aesthetics,

management, dependence, interest, comfort, attention, approval, modesty.

## The Factors

The means of the eight factors cannot be as readily interpreted because of the varying number of items in each factor. However, utilizing mid-points (3 for sometimes) multiplied by the number of items in the factor it can be said that subjects ranked themselves highest on factor one, appearance, similar to subscales one and six, aesthetics and management. They ranked as exceedingly unimportant, factor three, conformity, similar to Creekmore's seventh ranking subscale, approval.

## Comparisons with Previous Studies

The rank order of importance of the various dimensions of clothing interest found in the present study was compared to results of previous research using the "Importance of Clothing Questionnaire" as well as other measures of clothing behaviors. The aspects of clothing importance as measured by the eight subscales of the Creekmore instrument were ordered by the means of the total sample scores on each subscale. These dimensions ranked as follows: aesthetics, management, dependence, interest, comfort, attention, approval, and modesty.

Most researchers in clothing interest and behavior, using a wide variety of measuring devices and many different populations, have consistently reported that appearance was the most important aspect of clothing behavior. Factor one, named "appearance," consisted of items from subscale one and subscale six, aesthetics and management respectively. Therefore, the results of this study agreed with

previous research about the importance of appearance as an aspect of clothing behavior and interest.

The importance of appearance, noted by Creekmore in 1963, had been reported in earlier studies (Hurlock, 1929; Barr, 1934; Hoffman, 1956; Roland, 1958; Lundeen, 1958; Lapitsky, 1961). Subsequently more recent studies found appearance to be most important to subjects taking part in their research studies (Brady, 1963; Creekmore, 1966; Dickey, 1967; O'Connor, 1967; Harrison, 1969; Graham, 1973). Noting cultural differences, Kim (1970) found aesthetics to rank second for a group of Korean women, and Hao (1971) found it to be of second importance in a study using a Chinese population. When considered in the light of the relationship between aesthetics and management, demonstrated by the appearance of both dimensions of clothing behavior on factor one, Hao's results were even more interesting. Although she found that both American and Chinese women ranked aesthetics second, Americans rated management first.

The least important aspect of clothing behavior for the group used in this present study was modesty. The importance of this dimension of clothing behavior has varied culturally and over a period of time, Kim (1970) and Hao (1971) found modesty to be the most important clothing behavior to Korean and Chinese women respectively, while Hao's group of Americans ranked modesty last. Harrison (1969), who used many of Creekmore's items with an Indian population, found modesty to rank third.

Concepts of modesty have changed also with the passage of time. Early researchers found it to be more significant than it was for the

sample of this study (Brady, 1963; Dickey, 1967; Klaasen, 1967).
However, it ranked seventh in Creekmore's original study in 1963.

Creekmore, in 1963, found inverse relationships between conformity
and social position. Women in the lowest socioeconomic classes were
significantly more concerned with conforming clothing behavior than
were those in the upper classes. The present study indicated that
college women in 1973 were not concerned with conformity in dress
regardless of socioeconomic status. Even though the social class
range in this study was extremely small, 50% of the sample were in the
upper middle class and 80% in the combined middle classes (upper and
middle), this research indicated no significant correlations between
either subscale seven (approval) or factor three (conformity) and
socioeconomic status.

These correlations, plus the extremely low importance placed on
conformity as measured by subscale seven and factor three may help
answer many questions posed by modern collegiate dress. Are today's
young people truly non-conformists as they claim or are they merely
conforming to an alternate set of norms? These results would seem to
bear out what past research has indicated, that the younger generation
are unconcerned with societal pressures in matters of dress and are
exhibiting non-conforming or "do-your-own-thing" attitudes toward
their own clothing, as well as that of others (Gurel, 1970).

Hurlock (1929) reported men to be more interested in conformity
in dress than women. O'Connor, too, found that men scored above
middle rank on conformity interests in clothing. In this study there
was no significant difference in conformity interest and sex.

Creekmore believed that the fact that Home Economics students placed significantly higher importance on management and theoretical aspects of clothing was closely related to the Home Economics curriculums. Management in selection, use, and care of clothing was emphasized and a theoretical interest in clothing was a natural tendency for most Home Economics students. This research agreed partially with Creekmore's findings. Management ranked second in importance, however, theoretical concern with clothing only ranked mid-way in importance for most of the students in this 1973 sample.

CHAPTER VI

CONCLUSIONS

Conclusions pertinent to this research, concerning the factor
analysis of the Creekmore "Importance of Clothing Questionnaire" and
the investigated clothing interest relationships, will be divided, for
purposes of discussion, into sections based on the four objectives and
the six hypotheses proposed at the beginning of this study.


Objectives


Objective 1:  To identify by factor analysis the underlying dimensions
of behavior that may be labeled "interest in" or "importance of"
clothing.

Factor extraction, by means of component analysis, followed by
varimax rotation indicated the presence of eight distinct factors in the
clothing questionnaire used in this study.  The underlying dimensions
or constructs of the instrument were represented by the eight clusters
of items.  Since the total instrument purported to measure clothing
importance or clothing interest, it was reasonable to conclude that
these eight factors also represented the dimensions of clothing interest
or clothing importance.  In order to provide titles for these
dimensions, a factor naming panel was employed.  The eight dimensions
of clothing interest were:  personal appearance, experimentation with
clothing, conformity, modesty, psychological awareness, self-concept,
fashion interest, and comfort.

Therefore Objective 1 was fulfilled.

Objective 2: To investigate relationships between the factor analytically derived dimensions of clothing behavior and the empirically derived constructs of clothing importance proposed by Creekmore and her associates.

Relationships between the dimensions of clothing interest derived by factor analysis and those derived empirically by Creekmore, et al. (1968), were investigated by comparing item assignments. Three analyses were used: (1) correlational analysis between cluster scores and factor scores, (2) item-subject correlations, and (3) the chi square test for independence. Results of these analyses will be discussed under Hypothesis 1 below. Thus Objective 2 was accomplished.

Objective 3: To establish construct or factor validity for a clothing interest measure.

Construct validity is considered to be an indication of agreement between what an instrument claims to measure and the basic constructs underlying its development represented by the beliefs and concepts of the instrument developer. Factor analysis statistically uncovers an instrument's constructs. These constructs become the basic factors that are extracted by the factorial process. If these objectively derived constructs agree with the subjectively defined constructs of the test developer, this agreement may be interpreted as evidence for some construct validity for the instrument in question.

The results of the comparisons between the items assigned to factors and the items assigned to subscales showed a high correspondence between individual factors and individual subscales. Similarity was also found between factor and subscale titles. These results may be interpreted to mean that construct or factor validity can be claimed for the clothing measure used in this study.

Objective 3 has, therefore, been obtained.

Objective 4: To seek relationships between clothing interest as measured by the "Importance of Clothing Questionnaire" and certain demographic characteristics of college students.

Hypotheses 2 through 6, to be discussed below, will indicate the accomplishment of Objective 4.

## Hypotheses

Hypothesis 1: There are no significant relationships between the dimensions underlying clothing behavior as derived from a factor analysis of a clothing measure and the empirically derived constructs developed by Dr. Anna M. Creekmore and her associates.

In order to test the significance of relationships between the statistically derived factors resulting from the factor analysis and the empirically derived subscales of the Creekmore researchers, three statistical procedures were used. Pearson product moment correlations between factor scores and subscale scores indicated very strong relationships between factor and subscale pairings.

Comparisons between item assignments to factors and item assignments to subscales were made, first by using the phi coefficient for two sets of dichotomous variables. Then, by incorporating the factor loadings into the correlation matrix, point-biserial correlations were obtained. Both of these analyses indicated extremely strong relationships between item assignments.

As a final test of Hypothesis 1, a chi square test of independence was performed. Nine highly significant chi squares expressed the same relationship between factors and subscales as the previous correlational analyses had done.

All three statistical procedures indicated a significant relationship between the factors and subscales, thus Hypothesis 1 was rejected.

Hypothesis 2: There is no significant relationship between clothing interest and sex among a selected group of college students.

Pearson product moment correlation coefficients between the instrument's subscales and the demographic variable of sex indicated several significant relationships. A coefficient of .549 between subscale three (interest) and sex indicated a very strong relationship. Smaller coefficients occurred between sex and the aesthetics, modesty, management, and dependence subscales but all were statistically significant below the ∝ .001 level. In all, there were significant correlations between sex and seven of the nine scales and a coefficient of .464 between sex and the total instrument scores.

There were similar relationships between sex and six of the eight factors. A strong relationship existed between sex and factor two (experimentation with clothing), moderate relationships between sex and factors one and four (personal appearance and modesty), and small, but still significant correlations between sex and factors five, six, and seven (psychological awareness, self-concept, and fashion interest).

The two factors that were not related to sex were conformity and comfort; the two subscales that did not yield statistically significant correlations with sex were comfort and approval. Means of the individual factor and subscale scores indicated that both conformity and approval ranked very low in importance to the sample as a whole (factor three: mean 10.79, range 5-65; subscale seven: mean 29.59, range 11-55, ranking seventh in importance).

Comfort was rated more important than conformity and approval on both factor and subscale analyses (factor eight: mean 30.15, range 9-45; subscale three: mean 35.93, range 5-55, fifth ranking of eight subscales).

This study indicated that a relationship existed between clothing interest and sex. Since the relationship was positive, it can be said that, for the population studied, women are more interested in and place more importance on clothing than do men. Hence, Hypothesis 2 was rejected.

Hypothesis 3: There is no significant relationship between clothing interest and age among a selected group of college students.

There were scattered significant correlations ($\alpha <$ .001) between age and clothing interest as measured by subscales two and three (modesty and interest) and by factors two and four (experimentation with clothing and modesty). The coefficients were, however, extremely small (.154-.199), indicating little relationship between the underlying clothing behaviors measured by this instrument and the age of the subjects.

Therefore, for the sample used in this study, Hypothesis 3 was accepted.

Hypothesis 4: There is no significant relationship between the clothing interest of students enrolled in the College of Home Economics and students enrolled in other colleges of one university system.

Although there were 14 statistically significant correlations between college of enrollment and subscales, factors, and total test score, only three indicated moderate relationships—subscale three (interest), factor two (experimentation with clothing), and the total

test score. The remaining correlation coefficients were all less than

.272. The many small relationships did indicate that, for this

sample, students enrolled in the College of Home Economics expressed

slightly more interest in clothing than did the rest of the university

students.

Therefore, Hypothesis 4 was partially accepted.

Hypothesis 5: There is no significant relationship between the clothing
interest of home economics students and their choice of major.

Eight of the 17 correlations between college major and the

clothing interest constructs were significant at the $\alpha < .001$ level.

However, the highest coefficient was .280, below the criterion of .300

indicating a moderate relationship. Therefore, although this research

indicated a trend toward a relationship between the clothing interest of

Home Economics students and their choice of major, Hypothesis 5 was

accepted.

Hypothesis 6: There is no significant relationship between the clothing
interest of college students and their socioeconomic class membership.

There were no significant correlations between socioeconomic class

and clothing interest as measured by the "Importance of Clothing

Questionnaire."

Hypothesis 6 was accepted.

# CHAPTER VII

## SUMMARY

Research concerned with interest in clothing and the importance of clothing to an individual has been handicapped by few measuring instruments with established validity as well as by a lack of definitive statements concerning the clothing behaviors in question. The importance of the social and the psychological implications of clothing behavior has been accepted by investigators in the clothing field for many years. However, instrument refinement and revision has not kept pace with other advances made by clothing researchers. Instrument analysis may be considered a prelude to instrument revision in that concepts underlying the behavior being measured can be identified.

The major purpose of this investigation was to determine by means of factor analysis, the dimensions underlying clothing behavior. In addition, factor analysis was used to establish construct validity for a measure of clothing interest. At the same time it was believed that, through the use of the isolated constructs uncovered by the analysis, a more inclusive definition of clothing interest behavior could be postulated.

To gain information about the clothing interests of college students in 1972-73 this study also investigated hypothesized relationships between clothing interest and groups with different demographic characteristics.

## The Instruments

The clothing measure developed by Dr. Anna M. Creekmore and her associates[1] in 1968 was used for this analysis for several reasons: (1) its length and composition made it suitable for factor analysis, (2) the instrument was applicable to the available population without revision, and (3) the frequency of its use in previous studies had demonstrated reliability.

The above instrument, "The Importance of Clothing Questionnaire" was divided into nine subscales; it was hypothesized that there would be a close correspondence between these subscales empirically derived by the instrument developers and the items assigned to factors by means of the factor analysis. Acceptance of this hypothesis would be an indication of construct validity for the Creekmore instrument.

Socioeconomic status was determined by using the McGuire-White modified Index of Social Status (1955). Demographic data was gathered by means of additional questions added to the 89 item questionnaire.

## The Sample

The sample used in this investigation consisted of 500 students, 420 women and 80 men, enrolled in a clothing and textiles course at Virginia Polytechnic Institute and State University during the 1972-73 academic year. Sixty-eight % of the students were either 18 or 19 years old and 78% were in their freshman or sophomore year in college.

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## The Statistical Analysis

Eight factors were extracted by means of component analysis with +1.00's in the major diagonal entries. The vectors were rotated using the Kaiser varimax method, to produce optimal orthogonal structure. Criteria were established for the assignment of items to eight factors.

Phi coefficients, point-biserial correlations, and the chi square test for independence were performed to determine the correspondence between item assignments to the empirically derived subscales and to the statistically derived factors. Strong correlations were found between the two sets of measures, on all of the above procedures.

Item assignments were also compared by means of Pearson correlations between factor scores and subscale scores. Each factor had a very strong relationship (coefficients of .800 or greater) with at least one subscale. Factor one was related significantly to two subscales. The factor and subscale pairings on all four procedures were as follows:

> Factor one was related to subscales one and six.
>
> Factor two was related to subscale three.
>
> Factor three was related to subscale seven.
>
> Factor four was related to subscale two.
>
> Factor five was related to subscale nine.
>
> Factor six was related to subscale eight.
>
> Factor seven was related to subscale five.
>
> Factor eight was related to subscale four.

These results supported the rejection of the first null hypothesis. There was a relationship between the dimensions underlying clothing behavior as derived from a factor analysis of a clothing measure and the empirically derived constructs developed by Dr. Anna M. Creekmore and her associates.

Claims for construct validity for the Creekmore "Importance of Clothing Questionnaire" could also be supported by the results of this study. The significant correlations between item assignments to subscales and item assignments to factors, the magnitude of relationships between factor and subscale scores, and the similarities of factor and subscale titles representing the basic instrument constructs, all lent credence to the basic theories underlying the measure's validity. Thus one of the major objectives of this study was accomplished also.

The reliability of the item assignments was determined by point-biserial correlations between factor assignments and factor loadings. There were highly significant correlations ($p < .001$) between each factor and the loadings of the items placed in the factor.

## Factor Naming

In order to aid in assignment of titles to the constructs of clothing interest isolated by factor analysis, a 17 member panel was asked to name the eight factors. Similarities between the names applied to the subscales by the original researchers and the factor titles determined by this investigator with the aid of the factor naming panel can be seen from the following lists.

| Creekmore Subscale titles | | Factor titles | |
|---|---|---|---|
| 1. | aesthetics | 1 | personal appearance |
| 2. | modesty | 3 | modesty |
| 3. | interest | 2 | experimentation with clothing |
| 4. | comfort | 8 | comfort |
| 5. | attention | 7 | fashion interest |
| 6. | management | 1 | personal appearance |
| 7. | approval | 3 | conformity |
| 8. | psychological dependence | 6 | self-concept |
| 9. | theoretical | 5 | psychological awareness |

## Clothing Interest Defined

A new definition for clothing interest was formulated using the
factor titles as verbal representations of pertinent behavioral
constructs.  Clothing interest behavior may be referred to as that
part of human behavior specifically related to clothing, its selection,
and its use, and its importance as a persistent interest center to an
individual.  Clothing interest behavior is made up of concerns for
personal appearance and the management of clothing to maintain
this appearance.  It involves a willingness to experiment with the use
of clothing, to be psychologically aware and curious about the effects
of clothing on others, to use clothing to bolster self-concept and
security, and to be interested in fashion and style.  Concern for

modesty in clothing, comfort and fit, and some degree of conformity
to societal norms is also part of the personality pattern of a person
manifesting high interest in clothing.


### Clothing Interest and Demographic Characteristics

In order to test the five hypotheses related to clothing interest
and the demographic characteristics of sex, age, college of enrollment,
major, and socioeconomic class, Pearson product moment correlations were
computed between all factor and subscale scores, the total test scores,
and all background variables. Significant relationships occurred
between some constructs of clothing interest as measured by both
factors and the original subscales and the variables of sex and college.
Women scored significantly higher on clothing interest in general and on
some specific aspects of clothing interest than did the men in the
research sample. Since the majority of the women were enrolled in the
College of Home Economics, it quite logically followed that clothing
interest was also related significantly to college of enrollment. The
null hypotheses concerning relationships between clothing interest and
sex and clothing interest and college were rejected.

Although a few significant correlations were found between clothing
interest and the variables of age and college major, the relationships
were not strong enough to be meaningful, and the null hypotheses
concerning relationships between age and clothing interest and between
college major and clothing interest were accepted.

There were no significant relationships between clothing interest and socioeconomic class. Therefore the null hypothesis concerning this relationship was also accepted.

# CHAPTER VIII

## SUGGESTIONS FOR FUTURE RESEARCH

1. The results of the research reported in this dissertation suggest the possibility of a revision of the "Importance of Clothing Questionnaire."

   a. Statistical analyses indicated that the total instrument could be shortened without loss of reliability.

   b. Poorly discriminating items suggested the possibility of individual item improvement through rewording.

   c. The factor analysis suggested a regrouping of items into new subscales and a retitling of the newly formed scales.

2. A comparison of the factor structure with other clothing interest measures may demonstrate validity for the underlying clothing interest dimensions uncovered by the factor analysis.

3. A comparison between individual factors and both clothing and non-clothing oriented instruments purporting to measure the constructs assigned to the factors may further test the validity of the factors and their titles.

   a. Factor Three (conformity) could be used with an instrument such as Rokeach's Dogmatism Scale (Rokeach, 1960) or other conformity measures to see if there were relationships between measures of conforming behavior.

   b. Factor Six (self-concept) could be used with the Index of Adjustment and Values Measure (Bills, et al., 1951), or

the Clothing and Appearance Image Measure (Deemer, 1967) to see if there were relationships between two or more measures of self-concept.

4. A replication of this study using a different population would test the significance of the obtained similarities between the subscale and factor scoring.

5. This clothing interest instrument, in a newly devised subscale organization based on the factor analysis, should be used with wider age and socioeconomic ranges in order to uncover information about larger segments of the population in regard to specific aspects of clothing interest.

6. The clothing interest of ethnic, racial, and religious groups could be explored using the factor structured instrument.

BIBLIOGRAPHY

Aiken, L. R.  The relationship to selected measures of personality in
    undergraduate women.  Journal of Social Psychology, 1963, 59(1),
    119-128.

Alexander, O. N.  A pilot investigation of the motives underlying the
    desire to feel well-dressed at various age levels.  Unpublished
    master's thesis, Cornell University, 1961.

Ames, J. H.  The clothing conformity and awareness of adolescents.
    Unpublished master's thesis, University of Missouri, 1969.

Barber, B., & Lobel, L.  Fashion in women's clothes and the American
    social system.  Social Forces, 1952, 31, 124-131.

Barr, E. D. Y.  A psychological analysis of fashion motivation.
    Archives of Psychology, 1934, 171.

Beeson, M. S.  Clothing apperception among high school and college
    students.  Unpublished master's thesis, Louisiana State University,
    1965.

Bills, R. E., Vance, E. L., & McLean, O. S.  An index of adjustment and
    values.  Journal of Consulting Psychology, 1951, 15, 257-261.

Bissell, L. M.  A comparison of the interest, importance, and psycho-
    logical aspects of clothing between a group of blind and sighted
    teenage girls.  Unpublished master's thesis, The University of
    North Carolina at Greensboro, 1969.

Bjorngaard, A. L.  The relationship of social class and social acceptance
    to clothing and appearance of a selected group of ninth grade
    girls.  Unpublished master's thesis, Michigan State University,
    1962.

Brady, B. L.  Clothing behavior:  Refinement of a measure and relation-
    ships with social security and insecurity for a group of college
    women.  Unpublished master's thesis, The Pennsylvania State
    University, 1963.

Carpenter, V. V.  Inventories of opinions concerning selection, use,
    and care of clothing.  Unpublished doctoral dissertation, Iowa
    State University, 1963.

Cohen, J. Statistical power analysis for the behavioral sciences. New York: Academic Press, 1969.

Consilii, Sister R. A comparative study of the clothing interests of two groups of adolescent girls, one group from an institution, the other living in normal family surroundings. Unpublished master's thesis, Drexel Institute of Technology, 1955.

Creekmore, A. M. Clothing behaviors and their relation to general values and to the striving for basic needs. Unpublished doctoral dissertation, The Pennsylvania State University, 1963.

Creekmore, A. M. Clothing inventory. Unpublished (mimeographed), Michigan State University, 1966.

Creekmore, A. M. Methods of measuring clothing variables. Michigan Agricultural Experiment Station Project No. 783, 1971.

Cronbach, L. J. Essentials of psychological testing. (3rd. ed.) New York: Harper & Row, 1970.

Deemer, E. M. Clothing and appearance self and ideal self images related to an index of adjustment and values for a group of college women. Unpublished doctoral dissertation, The Pennsylvania State University, 1967.

Dewey, A. L. Relationship between clothing behavior patterns and general self-concept of college students. Unpublished master's thesis. Virginia Polytechnic Institute and State University, 1973.

Dickey, L. E. Projection of the self through judgments of clothed figures and its relation to self-esteem, security-insecurity and to selected clothing behaviors. Unpublished doctoral dissertation, The Pennsylvania State University, 1967.

Douce, P. D. M. Selected aspects of personality related to social acceptance and clothing-oriented variables. Unpublished doctoral dissertation, Utah State University, 1969.

Engel, K. The relationship of self-concept and clothing. Unpublished master's thesis, Michigan State University, 1967.

English, H. B., & English, A. C. A comprehensive dictionary of psychological and psychoanalytical terms. New York: Longmans, Green, 1958.

Fetterman, N. I. An analysis of the Creekmore scales of eight clothing variables. Unpublished master's thesis, Michigan State University, 1968.

Flaccus, L. W. Remarks on the psychology of clothes. The Pedagogical Seminary and Journal of Genetic Psychology, 1906, 13, 61-83.

Flugel, J. C. The psychology of clothes. London: Hogarth Press, 1930.

Freedle, J. A. D. Clothing interest and social participation as related to clothing selection and buying processes of the college woman. Unpublished master's thesis, University of Tennessee, 1968.

French, J. W. The description of aptitude and achievement factors in terms of rotated factors. Psychometric Monographs, 1951, 5.

Frost, E. A. Values, body cathexis, and clothing attitudes of male university students. Unpublished master's thesis, Utah State University, 1968.

Fructer, B. Introduction to factor analysis. Princeton, New Jersey: Van Nostrand, 1954.

Garnell, H. E. On certain independent factors in mental measurement. Proceedings of the Royal Society of London, 1919-1920, A-96, 96-111.

Goodman, D. L. A study of clothing behaviors, level of aspiration, and social participation of a selected group of low socioeconomic adolescent girls. Unpublished master's thesis, University of Tennessee, 1969.

Graham, M. B. A comparison of responses regarding five selected clothing values of black and white adolescents from working class families. Unpublished master's thesis, Louisiana State University, 1972.

Griesman, K. S. Clothing behavior related to attitudes toward certain clothing standards, clothing interest, orthodoxy, and conformity. Unpublished master's thesis, Oregon State University, 1965.

Guertin, W. H., & Bailey, J. P. Jr. Introduction to modern factor analysis. Ann Arbor: Edwards Brothers, 1970.

Guilford, J. P. Factor analysis in a test-development program. Psychological Review, 1948, 55, 79-94.

Guilford, J. P. Fundamental Statistics in Psychology and Education. New York: McGraw-Hill, 1965.

Guilford, J. P. Psychometric Methods. (2nd. ed.) New York: McGraw-Hill, 1954.

Guilford, J. P. The structure of intellect. Psychological Bulletin, 1956, 53, 267-293.

Gurel, L. Some personality correlates of adolescents differentiated by the type of clothing they wear. Unpublished master's thesis, University of Maryland, 1970.

Guttman, L. A. "Best possible" systemic estimates of communalities. Psychometrika, 1956, 21, 273-285.

Guttman, L. A. The Cornell techniques for scale and intensity analysis. Educational Psychological Measurement, 1947, 7, 247-280.

Hall, G. S. Some aspects of the early sense of self. American Journal of Psychology, 1898, 9(3), 351-395.

Hao, L. F. C. A cross-cultural study: The relationship between clothing behaviors and general values. Unpublished master's thesis, University of Tennessee, 1971.

Harmon, H. H. Modern factor analysis. (2nd. ed., revised) Chicago: University of Chicago Press, 1967.

Harrison, E. L. Clothing interest and social participation of college men as related to clothing selection and buying processes. Unpublished master's thesis, University of Tennessee, 1968.

Harrison, E. V. Clothing selection practices, interest, knowledge and perception for a group of educated women consumers in India. Unpublished doctoral dissertation, The Pennsylvania State University, 1969.

Hartmann, G. W. Clothing: Personal problems and social issue. Journal of Home Economics, 1949, 41(6), 295-298.

Hoffman, A. Clothing behavior factors for a specified group of women related to aesthetic sensitivity and certain socioeconomic and psychological background factors. Unpublished doctoral dissertation, The Pennsylvania State University, 1956.

Hollingshead, A. B. The social class and mental illness. New York: John Wiley and Sons, 1958.

Holzinger, K. J. Student manual of factor analysis. Chicago: University of Chicago Department of Education, 1937.

Hotelling, H. Analysis of a complex of statistical variables into principal components. Journal of Educational Psychology, 1933, 24, 417-441, 498-520.

Humphrey, C. A. The relationship of stability of self-concept to the clothing of adolescents. Unpublished master's thesis, Michigan State University, 1968.

Hundley, W. S. The relationship of clothing to social class, high school position and status inconsistency of adolescent boys and girls. Unpublished master's thesis, Michigan State University, 1967.

Hurlock, E. B. _Adolescent development_. New York: McGraw-Hill, 1949.

Hurlock, E. B. Motivation in fashion. _Archives of Psychology_, 1929, 17, 5-70.

Hurlock, E. B. _The Psychology of Dress_. New York: Ronald Press, 1929.

James, W. _Principles of psychology_. Vol. 1. New York: Henry Holt, 1890

James, W. _Psychology_. New York: Henry Holt, 1924.

Johnston, M. What will happen to the gray flannel suit? _Journal of Home Economics_, 1970, 64(8), 5-12.

Kaiser, H. F. The varimax criterion for analytic rotation in factor analysis. _Psychometrika_, 1958, 23, 187-200.

Kerlinger, F. A. _Foundations of behavioral research_. New York: Holt, Rinehart and Winston, 1964.

Kerlinger, F. A. & Kaya, E. The construction and factor analytic validation of scales to measure attitudes toward education. _Educational and Psychological Measurement_, 1959, 19, 13-29.

Kim, J. G. Selected clothing behaviors, interests in clothing, and selected clothing practices for a group of college women in Korea. Unpublished master's thesis, University of Tennessee, 1970.

Klaasen, M. G. Self esteem and its relationship to clothing. Unpublished master's thesis, Michigan State University, 1967.

Lapitsky, M. Clothing values and their relation to general values and to social security and insecurity. Unpublished doctoral dissertation, The Pennsylvania State University, 1961.

Lewin, K. _A dynamic theory of personality_. New York: McGraw-Hill, 1935.

Lundeen, S. The dress of male graduate students in chemistry and physics as viewed by themselves and by nonscience students. Unpublished master's thesis, The Pennsylvania State University, 1958.

McGuire, C., & White, G. D. The measurement of social status. Research paper on Human Development No. 3 (revised), The University of Texas, 1955.

McKinney, F. The psychology of personal adjustment. New York: John Wiley and Sons, 1941.

Mead, G. H. Mind, self and society. Chicago: The University of Chicago Press, 1934.

Moothart, P. F. A study of the change in the self-concept after a negative evaluation of clothing appearance and the relationship to the individual's interest in clothing. Unpublished master's thesis, Cornell University, 1966.

Murphy, G. Personality. New York: Harper and Co., 1947.

O'Connor, A. R. Clothing behaviors as related to selected general values for a group of male students. Unpublished master's thesis, The Pennsylvania State University, 1967.

Oppenheim, A. N. Questionnaire design and attitude measurement. New York: Basic Books, 1966.

Pankowski, E. A. Perception of clothing and selected areas of tolerance for a group of college males. Unpublished doctoral dissertation, The Pennsylvania State University, 1969.

Pasnak, M. F. Fashion innovators compared with non-innovators on clothing attitudes, self-actualization, and tolerance of ambiguity. Unpublished doctoral dissertation, The Pennsylvania State University, 1968.

Pearson, K. On lines and planes of closest fit to systems of points in space. Philosophical Magazine, 1901, 6, 559-572.

Peters, K. S. Beliefs expressed by selected college men concerning the social importance of clothing. Unpublished master's thesis, Kansas State University, 1963.

Reich, C. The greening of America. New York: Random House, 1970.

Risley, L. The relationship of certain clothing behaviors, clothing interest, and the personality trait of masculinity-femininity of a select group of college men. Unpublished master's thesis, University of Tennessee, 1969.

Roach, M. E., & Eicher, J. B. The visible self: Perspectives on dress. Englewood Cliffs, New Jersey: Prentice-Hall, 1973.

Rokeach, M.  *The open and closed mind.*  New York:  Basic Books, 1960.

Roland, R. H.  Development of an instrument for determining women's attitudes toward dresses of a specified type.  Unpublished master's thesis, Ohio State University, 1958.

Rosencranz, M. L. L.  A study of interest in clothing among selected groups of married and unmarried young women.  Unpublished master's thesis, Michigan State University, 1948.

Ruch, F. L.  Research notes.  *The Industrial Psychologist: Newsletter of Division 14*, American Psychological Association, 1970, 7(2), 13-25.

Russell, S. S.  Masculine fashion indices as related to external motivations of yesterday and today.  Unpublished doctoral dissertation, Texas Woman's University, 1971.

Russell, S. M.  The relationship between general values and clothing attitudes.  Unpublished master's thesis, University of Tennessee, 1969.

Ryan, M. S.  *Clothing:  A study in human behavior.*  New York:  Holt, Rinehart and Winston, 1966.

Ryan, M. S.  *Psychological effects of clothing, part II.*  Cornell University Agricultural Experiment Station, Bulletin 898, July, 1953.

Ryan, M. S.  *Psychological effects of clothing, part III.*  Cornell University Agricultural Experiment Station, Bulletin 898, August, 1953.

Scheerer, M.  Cognitive theory.  In G. Lindsey, (Ed), *Handbook of social psychology.*  Cambridge:  Addison-Wesley Publishing Co., 1954.

Sharpe, E. S.  Development of a clothing interest and importance scale.  Unpublished master's thesis, Ohio State University, 1963.

Simmel, G.  Fashion.  *International Quarterly*, 1904, 10, 130-155.

Snow, J. B.  Clothing interest in relation to specified socioeconomic factors of men in four selected occupations.  Unpublished master's thesis, Texas Woman's University, 1969.

Spearman, C.  General intelligence, objectively determined and measured.  *American Journal of Psychology*, 1904, 15, 201-293.

Stilley, S. Y. Clothing interest of teenage boys in relation to academic status and social adjustment. Unpublished master's thesis. Texas Woman's University, 1970.

Taylor, P. M. A comparison of private and public grade nine high school girls on interest in clothing, psychological security and social class. Unpublished master's thesis, Utah State University, 1969.

Vener, A. M. Adolescent orientations to clothing: A social-psychological interpretation. Unpublished doctoral dissertation, Michigan State University, 1957.

Vener, A. M., & Hoffer, C. R. Adolescent orientations to clothing. Agricultural Experiment Station Technical Bulletin 270, Michigan State University, 1959.

Warner, W. L. Social class in America: The evaluation of status. New York: Harper and Row, 1960.

Wass, B. M. Clothing as related to role behavior of ninth grade girls. Unpublished master's thesis, Michigan State University, 1962.

Webster's New World Dictionary. (College edition) Cleveland: The World Publishing Co., 1964.

Wildes, D. V. Clothing in relation to adolescent behavioral problems. Unpublished master's thesis, Auburn University, 1968.

Williams, M. C. Opinions on clothing appearance and social acceptance as factors in group cohesion of ninth grade girls. Unpublished master's thesis, Michigan State University, 1963.

Young, M. J. The relationship of clothing to peer acceptance and to personal appearance of adolescents. Unpublished master's thesis, Michigan State University, 1967.

Zalaznick, S. The youthquake in pop culture. Fortune. January 1969, 85-87.

APPENDIX A

**A Model of Clothing Interest**
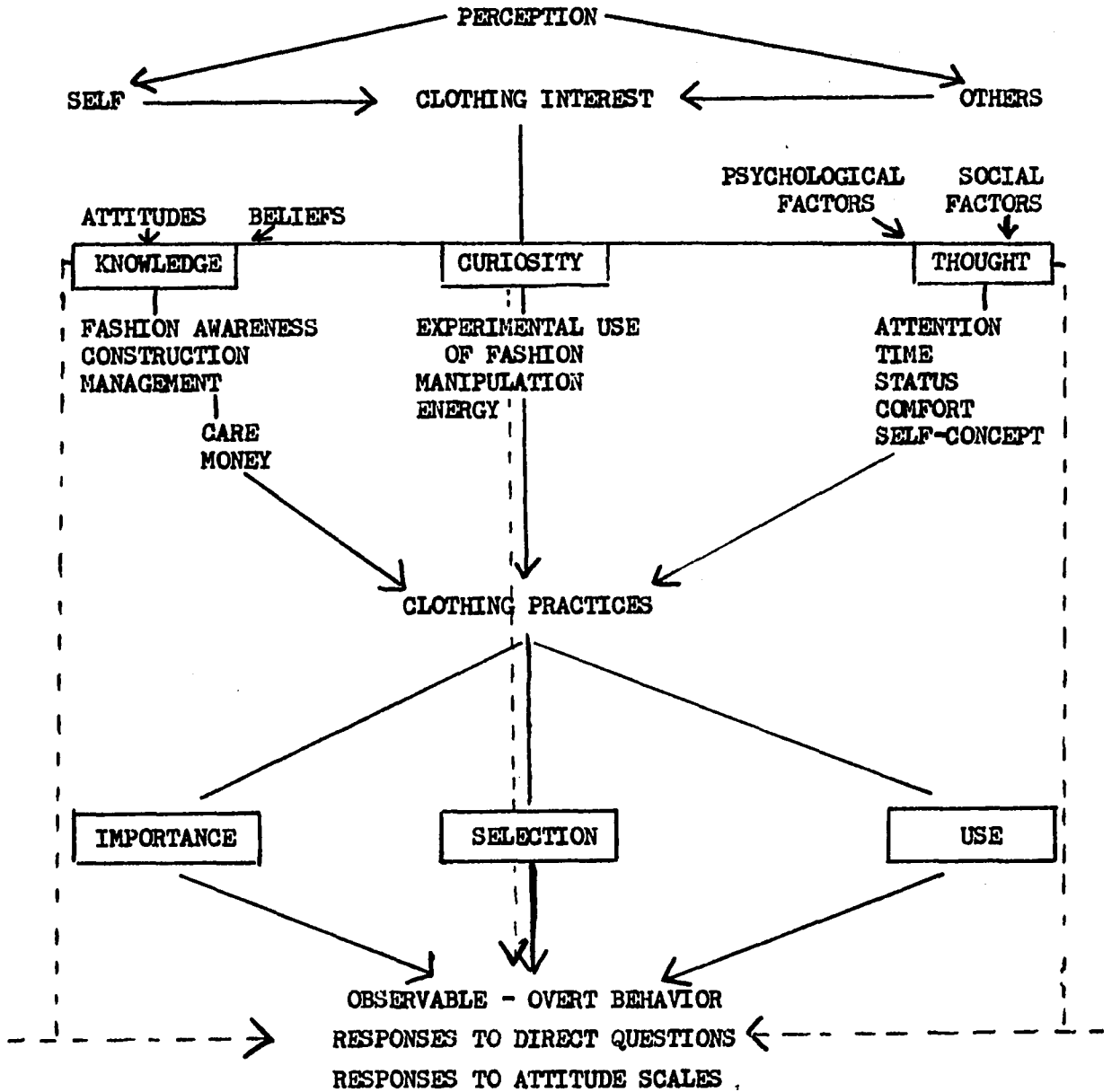
APPENDIX B

Clothing Interest Instruments

Rosencranz (1948)  You and Your Clothing

    Wass (1962)          Clothing Opinionnaire
    Freedle (1968)       Clothing Selection and Buying Processes
                        Questionnaire
    Harrison (1968)      Clothing Selection and Buying Processes
                        Questionnaire
    Kim (1970)          Clothing Interest and Clothing Practices
                        Questionnaire

Vener (1952)          You and Your Clothing, An Opinionnaire

    Wass (1962)          Clothing Opinionnaire
    Wildes (1968)       You and Your Clothing

Aiken (1963)          Clothing Opinionnaire

    Taylor (1969)       Aiken's Revised Clothing Opinionnaire
    Bissell (1969)      Clothing Questionnaire

Sharpe (1963)         Clothing Scale

    Moothart (1966)     Sharpe's Clothing Scale
    Bissell (1969)      Clothing Questionnaire

Creekmore (1963)     Clothing Interest Inventory

    Brady (1963)        Clothing Interest Inventory
    Griesman (1965)     Clothing Interest Inventory
    O'Connor (1967)     Clothing Behavior Measure
    Dickey (1967)       Clothing Concern Inventory
    Klaasen (1967)      Importance of Clothing Questionnaire
    Hundley (1967)      Importance of Clothing Questionnaire
    Frost (1968)        Clothing Attitude Opinionnaire for Men
    Fetterman (1968)    Importance of Clothing Questionnaire
    Goodman (1969)     Clothing Questionnaire
    Bissell (1969)      Clothing Questionnaire
    Risley (1969)       Men's Clothing Styles Questionnaire
    Harrison (1969)     Clothing Interest Inventory
    Kim (1970)          Clothing Questionnaire
    Hao (1971)          Clothing Interest Inventory

APPENDIX B (continued)

Miscellaneous

| | |
|---|---|
| Consillii (1955) | Source and Selection of Clothing |
| Carpenter (1963) | Clothing Opinion Scales |
| Peters (1963) | Opinionnaire |
| Beeson (1965) | Clothing Thematic Apperception Test |
| Griesman (1965) | Attitude Scale |
| Moothart (1966) | The Individual and Her Choice of Consumer Goods |
| Wellan (1966) | Importance of Clothing to Men |
| Pasnak (1968) | Clothing Activities |
| Snow (1969) | Clothing Interest |
| Pankowski (1969) | Clothing Interest Measure |
| Ames (1969) | Clothing Conformity and Awareness |
| Douce (1969) | Awareness of and Interest in Clothing |
| Stilley (1970) | Clothing Interest Inventory |
| Russell (1971) | Fashion Interest Questionnaire |

APPENDIX C

Importance of Clothing

Read the following statements and rate each according to the scale given below. Mark the letter corresponding to your choice on the IBM answer sheet.

> Scale: A. Almost Always - very few exceptions
> B. Usually - majority of the time
> C. Sometimes
> D. Seldom - not very often
> E. Almost Never - very few exceptions

1.  The way I look in my clothes is important to me.

2.  When I am shopping I choose clothes that I like even if they do not look the best on me.

3.  It bothers me when my shirt tail keeps coming out.

4.  I consider the fabric texture with the line of the garment when choosing my clothes.

5.  I use clothing as a means of disguising physical problems and imperfections through skillful use of color, line and texture.

6.  I wear clothes which have buttons or snaps missing.

7.  I pay a lot of attention to pleasing color combinations.

8.  I keep my shoes clean and neat.

9.  I carefully coordinate the accessories that I wear with each outfit.

10. I wear the clothing fads that are popular in our school even though they may not be as becoming to me.

11. I spend more time than others coordinating the colors in my clothes.

12. I try to figure out why some people's clothes look better on them than others.

Scale:
A. Almost Always
B. Usually
C. Sometimes
D. Seldom
E. Almost Never

13. Unlined sheer dresses, blouses, or shirts reveal too much of the body.

14. I select clothes that are conservative in style.

15. I feel uncomfortable when someone has forgotten to close his or her zipper.

16. The first time in the season that I go to a public beach or pool I feel exposed in my bathing suit.

17. I choose clothing with small prints, even though a larger design looks equally good on me.

18. I feel embarrassed when I see someone in too low cut a dress.

19. I select clothes which do not call attention to myself in any way.

20. I feel embarrassed when I see someone in clothes that are too tight.

21. I like dark or muted colors rather than bright ones for my clothes.

22. I hesitate to associate with those whose clothes seem to reveal too much of their body.

23. I wonder why some people wear clothes that are immodest.

24. My friends and I try each others clothes to see how we look in them.

25. I enjoy trying on shoes of different styles or colors.

26. I study collections of accessories in the stores to see what I might combine attractively.

27. I try on some of the newest clothes each season to see how I look in the styles.

28. I read magazines and newspapers to find out what is new in clothing.

29. It's fun to try on different garments and accessories to see how they look together.

30. I experiment with new or different "hair do's" to see how I will look.

Scale: A. Almost Always
       B. Usually
       C. Sometimes
       D. Seldom
       E. Almost Never

31. I like to know what is new in clothing even if none of my friends care and I probably would not want to wear it anyway.

32. I try on clothes in shops just to see how I will look in them without really planning to buy.

33. When I buy a new garment I try many different accessories before I wear it.

34. I am curious about why people wear the clothes they do.

35. The way my clothes feel to my body is important to me.

36. There are certain textures in fabrics that I like and especially try to buy, for example, soft, fuzzy, sturdy, smooth.

37. I am more sensitive to temperature changes than others and I have difficulty being comfortable in my clothes as a result.

38. I wear my pants or slacks with an easy fit even when tight ones are fashionable.

39. I get rid of garments I like because they are not comfortable.

40. I find it difficult to buy clothes suitable to the temperature.

41. I would buy a very comfortable bathing suit even if it were not the current style.

42. I avoid garments that bind the upper arm.

43. I am irritable if my clothes are uncomfortable.

44. I am extremely sensitive to the texture of the fabrics in my clothing.

45. I wonder what makes some clothes more comfortable than others.

46. When new fashions appear on the market, I am one of the first to own them.

47. I have clothes that I don't wear because everyone else has them.

48. I like to be considered an outstanding dresser by my friends.

Scale:  A.  Almost Always
        B.  Usually
        C.  Sometimes
        D.  Seldom
        E.  Almost never

49.  I try to keep my wardrobe in line with the latest styles.

50.  I go to nearby cities to shop for better fashions.

51.  I try to buy clothes which are very unusual.

52.  I avoid wearing certain clothes because they do not make me feel distinctive.

53.  I enjoy wearing very different clothing even though I attract attention.

54.  I try to buy clothes with the best labels.

55.  I wear different clothes to impress people.

56.  I am interested in why some people choose to wear such unusual clothes.

57.  I plan for and prepare clothes to wear several days in advance.

58.  I see that my out-of-season clothing is cleaned and stored.

59.  I look over the clothing in my wardrobe before each season so that I know what I have.

60.  I am enticed into buying garments I like without having anything to go with them.

61.  I enjoy trying to get the most for my money in clothing purchases.

62.  I wear a raincoat or carry an umbrella to protect my clothes in rainy weather.

63.  I have something to wear for any occasion that occurs.

64.  I have a long-term idea for purchasing more expensive items of clothing such as coats or suits.

65.  I carefully plan every purchase so that I know what I need when I get to a store.

66.  I am more concerned about the care of my clothing than my friends are about theirs.

Scale:  A.  Almost always
        B.  Usually
        C.  Sometimes
        D.  Seldom
        E.  Almost never

67.  I try to find out how I can save as much time, energy and money as possible with my clothes.

68.  I check with my friends about what they are wearing to a gathering before I decide what to wear.

69.  I would rather miss something than wear clothes which are not really appropriate.

70.  I feel more a part of the group if I am dressed like my friends.

71.  I wear clothes that everyone is wearing even though they may not look as good on me.

72.  I am uncomfortable when my clothes are different from all others at a party.

73.  I try to dress like others in my group so that people will know we are friends.

74.  I get new clothes for a special occasion if the clothes I have are not the type my friends will be wearing.

75.  I have gone places and then wished after I got there that I had not gone because my clothes were not suitable.

76.  I wear what I like even though some of my friends do not approve.

77.  When I buy a new article of clothing I try to buy something similar to what my friends are wearing.

78.  When someone comes to school dressed unsuitably, I try to figure out why he is dressed as he is.

79.  Certain clothes make me feel more sure of myself.

80.  I decide on the clothes to wear according to the mood I'm in that day.

81.  Days when I feel low I wear my gayest clothes.

82.  I "dress-up" to make an ordinary occasion seem more exciting.

83.  I am aware of being more friendly and out going when I wear particular clothes.

Scale: A. Almost always
       B. Usually
       C. Sometimes
       D. Seldom
       E. Almost never

84. I feel and act differently according to whether I am wearing my best school clothes or not.

85. I buy clothing to boost my morale.

86. I get bored with wearing the same kind of clothes all the time.

87. I have more self confidence when I wear my best school clothes.

88. When things are not going well I like to wear brighter colors.

89. I wonder why some clothes make me feel better than others.

APPENDIX D

## Index of Social Status

Student number _____

1. What is the one major source of your family's income?

    1. inherited savings and investments (inherited money)
    2. earned wealth—savings and investments
    3. profits, fees from business or profession
    4. salary and/or commissions, and/or monthly check
    5. weekly checks and hourly wages
    6. odd jobs, seasonal work
    7. public relief or assistance

    _____ X 4 = _____
                     place this number on line 1 below

2. What is the highest grade your father completed in school?

    1. advanced college degree
    2. graduate of a 4 year college
    3. less than 2 years of college or junior college graduate
    4. high school graduate, and/or post-high school training or trade school
    5. attended high school but did not graduate
    6. finished 8th. grade
    7. less than 8th. grade

    _____ X 3 = _____
                     place this number on line 2 below

3. What is the primary occupation of your father? Please be specific. If your father is deceased, what was his occupation when he was living?

    _____ X 5 = _____
    (Please find this number    place this number on line 3 below
    on the chart of occupations
    that you have been given.)

## APPENDIX D (continued)

Line 1 _____

Line 2 _____

Line 3 _____

Total _____    (Please add lines 1, 2, and 3.)
This is your Index of Social Status.
Use this number to answer question 98
on the preceding questionnaire.

APPENDIX E

Biographical Data Sheet

Answer the following questions by marking the right letter on the
IBM answer sheet.

90. How old were you on your last birthday?

    A. under 18
    B. 18
    C. 19
    D. 20
    E. 21 or over

91. What is your sex?

    A. male
    B. female

92. What is your marital status?

    A. single
    B. married
    C. divorced
    D. separated
    E. widow or widower

93. Do you have any children?

    A. yes
    B. no

94. What class are you presently in?

    A. freshman
    B. sophomore
    C. junior
    D. senior
    E. graduate

APPENDIX E (continued)

95. In what college are you enrolled?

    A. College of Home Economics
    B. other

96. If you are in the College of Home Economics, what is your major (or what do you think it will be if yet undeclared)?

    A. CTRA
    B. HNF
    C. MHFD
    D. HNF education or extension
    E. MHFD education or extension

97. If you indicated that your major was CTRA (in question 96), what is your option (or what do you think it will be if yet undeclared)?

    A. Apparel Design and Fashion Merchandising
    B. Textiles
    C. Interior Design
    D. Extension (CTRA)
    E. Education (CTRA)

98. What is your Index of Social Status?

    A. 12-22
    B. 23-37
    C. 38-51
    D. 52-66
    E. 67-84

# APPENDIX F

## Directions to Class About Research Assignment

The CTRA Department is working on a clothing research project using a questionnaire called "Importance of Clothing" developed by Dr. Anna M. Creekmore and a group of graduate students at Michigan State University. You will hear more about this in one of the TV lectures next week.

You are being asked to participate in this research. By doing this you will see how at least one type of social science research is conducted. In order to enlist your cooperation (as a captive audience) we are going to give you the 25 points that was scheduled for a second unit assignment. If anyone does not want to take part in this research, of course they do not have to. I will be glad to give you an alternate assignment.

The questionnaire consists of 89 questions. Questions 90-98 are demographic questions--that is questions that attempt to describe the population taking part in the study. The questionnaire will take you about 40 minutes to fill out.

This present research is being conducted for the following purposes:

1. to try to improve the present questionnaire through statistical analysis,

APPENDIX F (continued)

2. to gather information about the importance of clothing to college age men and women, and

3. to determine whether there are relationships between demographic variables and clothing importance.

That is all that I would like to say about the questionnaire now so that I won't give you information that may bias your answers. The material should be self explanatory and you should not have any trouble with it. If you have questions about the research or any parts of the questionnaire I will be glad to try to answer them on Wednesday.

1. Complete the questionnaire as honestly and accurately as you can using the IBM answer sheet that you have been given.

2. Remember: answer every question! If you don't complete the items in the questionnaire we will not be able to use it and you won't get the 25 points credit for the assignment. So please check over your work and make sure it is complete before handing it in.

3. Work alone. Don't discuss this questionnaire with other class members until after you have handed the questionnaire in.

4. Use the pencil provided.

5. Please put your student number on the IBM answer sheets and the mimeographed papers. These questionnaires will be kept completely anonymous and confidential. We need your student numbers only so that we can give you credit for completing the assignment. No attempt will be made to identify you in any way.

6. There are no right or wrong answers. These forms cannot be graded

APPENDIX F (continued)

in any manner. They will affect your grade in the course only in that
you will get the 25 points if you complete the questionnaire.

7. Please hand in, at the end of the period, the questionnaire, the
mimeographed sheets, the IBM answer sheet, and the pencil.

Thank you very much for your cooperation.

Mrs. Gurel

APPENDIX G

Chi Square Contingency Tables

Nine significant chi square values were obtained with a chi square test of independence between subscale and factor assignment. The contingency tables are reproduced below using the following formula:

$$\chi^2 = \frac{N \left( AD - BC - \frac{N}{2} \right)^2}{(A + B) \quad (C + D) \quad (A + C) \quad (B + D)}$$

Subscale One

| | | Yes | No | |
|---|---|---|---|---|
| | Yes | 7 | 4 | 11 |
| Factor One | | | | |
| | No | 9 | 69 | 78 |
| | | 16 | 73 | 89 |

**Table 1**    Factor One

$\chi^2$ = 14.338 with 1 degree of freedom, significant at $p < .0002$

APPENDIX G (continued)

Table 2

|  |  | Subscale Two | |  |
|---|---|---|---|---|
|  |  | Yes | No |  |
|  | Yes | 9 | 2 | 11 |
| Factor Four |  |  |  |  |
|  | No | 1 | 77 | 78 |
|  |  | 10 | 79 | 89 |

$$X^2 = 54.879 \text{ with 1 degree of freedom,}$$
significant at $p < .0000$

Table 3

|  |  | Subscale Three | |  |
|---|---|---|---|---|
|  |  | Yes | No |  |
|  | Yes | 10 | 1 | 11 |
| Factor Two |  |  |  |  |
|  | No | 2 | 76 | 78 |
|  |  | 12 | 77 | 89 |

$$X^2 = 57.1503 \text{ with 1 degree of freedom,}$$
significant at $p < .0000$

Table 4

|  |  | Subscale Four | |  |
|---|---|---|---|---|
|  |  | Yes | No |  |
|  | Yes | 9 | 2 | 11 |
| Factor Eight |  |  |  |  |
|  | No | 0 | 78 | 78 |
|  |  | 9 | 80 | 89 |

$$X^2 = 62.281 \text{ with 1 degree of freedom,}$$
significant at $p < .0000$

APPENDIX G (continued)

Table 5                                          Subscale Five

|  |  | Yes | No |  |
|---|---|---|---|---|
|  | Yes | 9 | 2 | 11 |
| Factor Seven |  |  |  |  |
|  | No | 2 | 76 | 78 |
|  |  | 11 | 78 | 89 |

$X^2$ = 48.825 with 1 degree of freedom,
significant at p < .0000

Table 6                                          Subscale Six

|  |  | Yes | No |  |
|---|---|---|---|---|
|  | Yes | 8 | 3 | 11 |
| Factor One |  |  |  |  |
|  | No | 8 | 70 | 78 |
|  |  | 16 | 73 | 89 |

$X^2$ = 21.453 with 1 degree of freedom,
significant at p < .0000

Table 7                                          Subscale Seven

|  |  | Yes | No |  |
|---|---|---|---|---|
|  | Yes | 9 | 2 | 11 |
| Factor Three |  |  |  |  |
|  | No | 4 | 74 | 78 |
|  |  | 13 | 76 | 89 |

$X^2$ = 39.516 with 1 degree of freedom,
significant at p < .0000

APPENDIX G (continued)

Table 8                                    Subscale Eight

|              |     | Yes | No |    |
|--------------|-----|-----|-----|----|
| Factor Six   | Yes | 6   | 5   | 11 |
|              | No  | 3   | 75  | 78 |
|              |     | 9   | 80  | 89 |

$X^2$ = 21.969  with 1 degree of freedom, significant at $p < .0000$

Table 9                                    Subscale Nine

|              |     | Yes | No |    |
|--------------|-----|-----|-----|----|
| Factor Five  | Yes | 7   | 1   | 8  |
|              | No  | 2   | 79  | 81 |
|              |     | 9   | 80  | 89 |

$X^2$ = 48.937  with 1 degree of freedom, significant at $p < .0000$

## APPENDIX H

### Factor Lists and Panel Instructions

Instructions:

Following are 8 lists of statements. These statements are supposed to measure 8 distinct aspects of that behavior which may be called "interest in" or "importance of" clothing to the individual. These clusters of statements are called factors, items which "go together" statistically.

My problem is to assign names to these factors. The names may be in the form of a single word or a short phrase. Since I need several opinions before I name the factors, will you please give me yours?

On the separate enclosed paper will you please write a suggested name which in your opinion best describes the aspect of clothing behavior measured by the group of statements.

You may disagree with the inclusion of certain items in the list. However, that is not the problem here. These lists have been derived statistically and not empirically. If you find it impossible to assign a name to some factors because you personally disagree with the listing them leave that factor name blank.

Please put all the material back in the folder and return to my desk (Room 101A) or mail box as soon as you can.

Thank you,
Lois Gurel

APPENDIX H (continued)

## Answer Sheet

Check one:     _____ faculty

                       _____ graduate student

                       _____ undergraduate student

### Factor Names

Factor 1. _____

Factor 2. _____

Factor 3. _____

Factor 4. _____

Factor 5. _____

Factor 6. _____

Factor 7. _____

Factor 8. _____

APPENDIX H (continued)

## Factor 1

| Factor Loading | Item No. | |
|---|---|---|
| .650 | 9 | I carefully coordinate the accessories that I wear with each outfit. |
| .607 | 7 | I pay a lot of attention to pleasing color combinations. |
| .602 | 8 | I keep my shoes clean and neat. |
| .551 | 11 | I spend more time than others coordinating the colors in my clothes. |
| .547 | 58 | I see that my out-of-season clothing is cleaned and stored. |
| .545 | 66 | I am more concerned about the care of my clothing than my friends are about theirs. |
| .532 | 1 | The way I look in my clothes is important to me. |
| .497 | 59 | I look over the clothing in my wardrobe before each season so that I know what I have. |
| .481 | 63 | I have something to wear for any occasion that occurs. |
| .439 | 65 | I carefully plan every purchase so that I know what I need when I get to a store. |
| .437 | 6 | I wear clothes which have buttons or snaps missing. (reverse scored) |
| .428 | 12 | I wear a raincoat or carry an umbrella to protect my clothes in rainy weather. |
| .414 | 57 | I plan for and prepare clothes to wear several days in advance. |
| .411 | 4 | I consider the fabric texture with the line of the garment when choosing my clothes. |
| .393 | 64 | I have a long-term idea for purchasing more expensive items of clothing such as coats or suits. |
| .322 | 3 | It bothers me when my shirt tail keeps coming out. |

APPENDIX H (continued)

Factor 2

| Factor Loading | Item No. | |
|---|---|---|
| .682 | 27 | I try on some of the newest clothes each season to see how I look in the styles. |
| .678 | 29 | It's fun to try on different garments and accessories to see how they look together. |
| .673 | 32 | I try on clothes in shops just to see how I will look in them without really planning to buy. |
| .637 | 25 | I enjoy trying on shoes of different styles or colors. |
| .579 | 24 | My friends and I try each others clothes to see how we look in them. |
| .568 | 28 | I read magazines and newspapers to find out what is new in clothing. |
| .535 | 30 | I experiment with new or different "hair do's" to see how I will look. |
| .511 | 31 | I like to know what is new in clothing even if none of my friends care and I probably would not want to wear it anyway. |
| .495 | 26 | I study collections of accessories in the stores to see what I might combine attractively. |
| .453 | 33 | When I buy a new garment I try many different accessories before I wear it. |
| .414 | 80 | I decide on the clothes to wear according to the mood I'm in that day. |
| .311 | 5 | I use clothing as a means of disguising physical problems and imperfections through skillful use of color, line and texture. |

APPENDIX H (continued)

Factor 3

| Factor Loading | Item No. | |
|---|---|---|
| .710 | 71 | I wear clothes that everyone is wearing even though they may not look as good on me. |
| .700 | 77 | When I buy a new article of clothing I try to buy something similar to what my friends are wearing. |
| .593 | 70 | I feel more a part of the group if I am dressed like my friends. |
| .599 | 72 | I am uncomfortable when my clothes are different from all others at a party. |
| -.574 | 10 | I wear the clothing fads that are popular in our school even though they may not be as becoming to me. (reverse scored) |
| .504 | 74 | I get new clothes for a special occasion if the clothes I have are not the type my friends will be wearing. |
| .500 | 73 | I try to dress like others in my group so that people will know we are friends. |
| .444 | 75 | I have gone places and then wished after I got there that I had not gone because my clothes were not suitable. |
| .363 | 69 | I would rather miss something than wear clothes which are not really appropriate. |
| .346 | 68 | I check with my friends about what they are wearing to a gathering before I decide what to wear. |
| -.337 | 41 | I would buy a very comfortable bathing suit even if it were not the current style. |
| -.329 | 2 | When I am shopping I choose clothes that I like even if they do not look the best on me. (reverse scored) |
| -.305 | 60 | I am enticed into buying garments I like without having anything to go with them. (reverse scored) |

APPENDIX H (continued)

Factor 4

| Factor Loading | Item No. | |
|---|---|---|
| .705 | 20 | I feel embarrassed when I see someone in clothes that are too tight. |
| .703 | 18 | I feel embarrassed when I see someone in too low cut a dress. |
| .595 | 22 | I hesitate to associate with those whose clothes seem to reveal too much of their body. |
| .543 | 13 | Unlined sheer dresses, blouses, or shirts reveal too much of the body. |
| .529 | 23 | I wonder why some people wear clothes that are immodest. |
| .482 | 15 | I feel uncomfortable when someone has forgotten to close his or her zipper. |
| .437 | 16 | The first time in the season that I go to a public beach or pool I feel exposed in my bathing suit. |
| .431 | 14 | I select clothes that are conservative in style. |
| .370 | 76 | I wear what I like even though some of my friends do not approve. |
| .290 | 17 | I choose clothing with small prints, even though a larger design looks equally good on me. |

APPENDIX H (continued)

## Factor 5

| Factor Loading | Item No. | |
|---|---|---|
| .645 | 34 | I am curious about why people wear the clothes they do. |
| .619 | 89 | I wonder why some clothes make me feel better than others. |
| .600 | 78 | When someone comes to school dressed unsuitably, I try to figure out why he is dressed as he is. |
| .583 | 45 | I wonder what makes some clothes more comfortable than others. |
| .575. | 56 | I am interested in why some people choose to wear such unusual clothes. |
| .439 | 88 | When things are not going well I like to wear brighter colors. |
| .417 | 12 | I try to figure out why some people's clothes look better on them than others. |
| .397 | 81 | Days when I feel low I wear my gayest clothes. |
| .327 | 67 | I try to find out how I can save as much time, energy, and money as possible with my clothes. |

APPENDIX H (continued)

Factor 6

| Factor Loading | Item No. | |
|---|---|---|
| .655 | 79 | Certain clothes make me feel more sure of myself. |
| .654 | 87 | I have more self confidence when I wear my best school clothes. |
| .580 | 83 | I am aware of being more friendly and out going when I wear particular clothes. |
| .546 | 84 | I feel and act differently according to whether I am wearing my best school clothes or not. |
| .486 | 85 | I buy clothing to boost my morale. |
| .415 | 86 | I get bored with wearing the same kind of clothes all the time. |
| .384 | 55 | I wear different clothes to impress people. |
| -.361 | 19 | I select clothes which do not call attention to myself in any way. |
| -.302 | 21 | I like dark or muted colors rather than bright ones for my clothes. |

APPENDIX H (continued)

Factor 7

| Factor Loading | Item No. | |
|---|---|---|
| .633 | 51 | I try to buy clothes which are very unusual. |
| .620 | 46 | When new fashions appear on the market, I am one of the first to own them. |
| .549 | 53 | I enjoy wearing very different clothing even though I attract attention. |
| .542 | 52 | I avoid wearing certain clothes because they do not make me feel distinctive. |
| .501 | 47 | I have clothes that I don't wear because everyone else has them. |
| .475 | 50 | I go to nearby cities to shop for better fashions. |
| .444 | 54 | I try to buy clothes with the best labels. |
| .406 | 49 | I try to keep my wardrobe in line with the latest styles. |
| -.382 | 61 | I enjoy trying to get the most for my money in clothing purchases. |
| .339 | 48 | I like to be considered an outstanding dresser by my friends. |
| .295 | 82 | I "dress-up" to make an ordinary occasion seem more exciting. |

APPENDIX H (continued)

## Factor 8

| Factor Loading | Item No. | |
|---|---|---|
| .617 | 44 | I am extremely sensitive to the texture of the fabrics in my clothing. |
| .583 | 36 | There are certain textures in fabrics that I like and especially try to buy, for example, soft, fuzzy, sturdy, smooth. |
| .488 | 37 | I am more sensitive to temperature changes than others and I have difficulty being comfortable in my clothes as a result. |
| .426 | 43 | I am irritable if my clothes are uncomfortable. |
| .424 | 35 | The way my clothes feel to my body is important to me. |
| .410 | 40 | I find it difficult to buy clothes suitable to the temperature. |
| .352 | 42 | I avoid garments that bind the upper arm. |
| .317 | 39 | I get rid of garments I like because they are not comfortable. |
| .252 | 38 | I wear my pants or slacks with an easy fit even when tight ones are fashionable. |