This is to certify that the

thesis entitled

A Path Analysis Of Personality
And Its Influence On Brand Choice

presented by

R. Eric Reidenbach

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Marketing

Major professor

Date November 3, 1979

A PATH ANALYSIS OF PERSONALITY AND ITS INFLUENCE ON BRAND CHOICE

By

R. Eric Reidenbach

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Graduate School of Business Administration

1979

ABSTRACT

A PATH ANALYSIS OF PERSONALITY AND
ITS INFLUENCE ON BRAND CHOICE

by

R. Eric Reidenbach

Marketing research efforts in the area of personality have typically focused on the direct relationship between individual personality traits and their impact on either choice of product classes or brands within product classes. The bulk of these research findings have proven disappointing and have been criticized for either their oversimplified approach or lack of substantive justification.

Given the weak empirical relationships that have been generated by this plethora of research, this research effort was undertaken to address the question of how personality impacts brand choice behavior and why the influence of personality is as weak as it is. In order to effect this examination, a path analysis of a proposed theoretical structure relating personality and various other accepted psychographic measures to brand choice was undertaken. The theoretical structure utilized in the research was a portion of the Engel, Kollat, and Blackwell model including the constructs of personality, normative compliance, evaluative criteria, beliefs, attitudes, intentions, and brand choice.

The major conclusions of this research are:

1. Personality exerts its greatest influence on brand choice when indicated by normative compliance and intention. One other indirect path links personality to brand choice through the intervening variables of evaluative criteria, beliefs, attitudes, and intentions. This indirect effect is not as strong as the effect generated via the shorter path. The effect of personality is mitigated by the intervening variables linking it to brand choice making it more readily understandable why personality is not a powerful explanatory variable in the brand choice decision.

2. Personality traits have shown certain promise when used as moderator variables. This research examined specific traits in light of a moderating influence on both the desirability of individual evaluative criterion and an individual's normative compliance. In this situation personality did not exert a moderating influence on either of the theoretically proximate variables. Thus, it appears that the moderating influence of personality is trait specific.

3. That the effect of personality is trait specific points out several problems left unanswered by this research. Specifically, questions remain as to which traits should be used in studies of brand choice, how many individual traits comprise the personality construct, and in what weights should these traits be combined.

4. Ancillary, but none the less significant findings

show an alternative specification of the relationship between beliefs and intentions and attitudes and brand choice. Tests of the model indicate that a direct link between belief and intentions may exist. A similar finding was forthcoming regarding the linkage between attitudes and brand choice.

5. Finally, the EKB model is primarily a teaching model designed to explicate relationships between and among variables rather than to predict behavior. This is substantiated by the rather high residual errors that result from tests of the linkages. Portions of the model are more adept at the predictive function, probably resulting from the great amounts of empirical research buttressing their evolution. To expect an explanatory model, however, to serve the dual purpose of explanation and prediction, is to expect too much.

ACKNOWLEDGEMENTS

Many individuals contributed to the completion of this effort in varying degrees and merit recognition for their involvement.

To my parents, Maryon and Richard Reidenbach, whose timely and always constant support spurred me onward to the completion of this task, an inadequate thanks if offered. Your guidance by example was powerful indeed.

To Leo Erickson, boss, friend, co-worker, and truly a man for all seasons--my great appreciation is tendered. You may never know the extent of your support.

My good friend Bixby Cooper merits mention for the type of support that only close friends can provide in a situation like this. For his good advice I am extremely thankful.

To my friends at CMU who shared many an interesting doctoral anecdote and occasionally some sound advice, I thank you. It's been a pleasure to know and work with you.

Finally, I would like to acknowledge the assistance offered me by my committee, Dr. Gill Harrell, Dr. Donald Taylor, and Dr. Jeff Towle. It is to Dr. Towle whose concern for quality and duty I am most appreciative.

TABLE OF CONTENTS

TABLE OF CONTENTS--Continued

LIST OF TABLES

LIST OF TABLES--Continued

LIST OF TABLES--Continued

LIST OF TABLES--Continued

LIST OF TABLES--Continued

LIST OF TABLES--Continued

LIST OF FIGURES

LIST OF FIGURES--Continued

CHAPTER I

INTRODUCTION

One area of consumer behavior which, prior to the proliferation of statistical research, received heavy qualitative emphasis was the area of personality. The conventional wisdom of this era, now two decades hence, was that personality constituted one of the primary determinants of consumer behavior. This notion was abundantly, if not empirically corroborated by that school of applied behaviorists that have chosen for themselves the label Motivation Researchers. Their work not only suggested but pivoted on the basic proposition that personality characteristics and differences to a large extent were responsible for explaining differences in buying patterns among the diverse market segments.

One such champion of this notion was Pierre Martineau whose work in personality caused a major marketing reorientation in the auto industry.

> For example, on the basis of Martineau's ideas, the automobile companies ceased selling cars and instead sold personalities. Martineau had suggested that there were three basic personality types underlying the demand characteristics of car buyers: (1) conservatives, (2) moderates or sociables, and (3) attention getters. Martineau not only offered personality as the main variable in auto buying but suggested further that personality was an important factor in most product and brand choice as well as store choice. Personality, according to Martineau, was a critical, if not the central variable, in marketing planning and

> strategy. Personality attributes to match those to the buyer were, thus, literally programmed into the entire product development and merchandising activity of the automobile companies.[1]

Since this time much has been added to the marketing and consumer behavior literature concerning personality in an attempt to specify and isolate the relationship between an individual's personality and his subsequent purchasing behavior. Unfortunately, little of an unequivocal nature has been forthcoming with respect to the role personality plays as a determinant of behavior. However, prior to discussing the potential pitfalls of personality research, it would perhaps prove efficacious to first define the construct, secondly, understand the theoretical evolution of the construct with an eye towards modern personality measurement, and finally examine some of the more frequently used measurement instruments.

Personality Defined

As in the case with other abstract constructs of this nature, there is no universally agreed upon definition of personality. In a less rigorous definition of the term, personality is used as a synonym for charisma or charm and individuals are subsequently designated as having or not having personality. In a strict theoretical sense this usage is of little value.

Since 1937 changes in the definition of personality

---

[1]Rom J. Markin Jr., Consumer Behavior: A Cognitive Orientation, Macmillan Publishing Co. Inc., New York, 1974, p. 351

have occurred reflecting a changing emphasis in the field of psychology and social psychology. At present there appears to be numerous definitions which have achieved at least a modicum of acceptance as evidenced by the frequency of their reference. Personality, according to Hilgard is "the configuration of individual characteristics and ways of behavior which determine an individual's unique adjustment to his environment."[2] A similar orientation is offered by Hebb who defines personality as "the characteristics that determine the general pattern of behavior in a higher animal, especially as it makes the individual distinctive in relation with others."[3] In addition, Bonner argues personality is "the organized needs and abilities of an individual, or the characteristic manner in which he satisfies his needs and actualizes his potential."[4]

Markin provides some relief from this semantic problem by noting three basic components common to the previously cited definitions:

> First . . . each tends to define personality largely from the standpoint of personal behavioral characteristics. Second, these personal behavioral characteristics are viewed as being organized, related and patterned. Third, these patterned characteristics are said to be self-serving; that is, they

---

[2]Ibid., p. 334.

[3]Loc. cit.

[4]Loc. cit.

> facilitate the attainment of the needs and goals of the individual.[5]

One such definition that appears to correspond to the above dimensions, and the one which will become the working definition for the remainder of this research effort is that offered by Engel, Blackwell, and Kollat, who define personality as "a pattern of enduring traits, activities, interests, and opinions that determine general behavior and truly make one individual distinctive in comparison with another."[6]

It should be noted that this definition defines personality on a relatively operational level of abstraction, and in so doing provides certain guidelines for the measurement of an otherwise general instruct. Also, as defined, personality is a determinant of general behavior and perhaps not deterministic of specific behaviors, such as brand choice.

Modern Personality Measurement

One further consideration is noteworthy prior to an investigation into the role this construct plays in behavior determination. Specifically, from what functional basis is personality derived? The modern study of personality has evolved from and been enlarged through the incipient work of Freud and his more orthodox followers, Alfred Adler and Carl Jung. In addition, a school of psychoanalytic researchers,

---

[5]Loc. cit.

[6]James F. Engel, Roger D. Blackwell, David T. Kollat, Consumer Behavior 3rd ed., Holt, Rinehart and Winston, Inc., New York, 1978, pp. 27-32.

subsumed under the rhuberic neo Freudians, (Erich Fromme, Karen Horney, Harry Stach Sullivan and Abram Kardiner) have enlarged the scope of Freud's original propositions by including the effects of cultural impact on the formation of an individual's personality. Other schools of thought, including Gestalt psychology and stimulus-response theorists, have added to the burgeoning literature of personality. Present in each of these approaches was a confounding problem of not being able to quantitatively measure personality. This problem has been lessened but not entirely relieved by the advent of the trait and factor theories.

> The core of these theories is that personality is composed of a set of traits or factors, some general and others specific to a particular situation or test. In constructing a personality instrument, the theorist typically begins with a wide array of behavioral measures, mostly responses to test items, and with statistical techniques distills factors which are then defined as personality variables.[7]

This distilling process is of two kinds. The first makes use of larger samples of subjects predetermined to possess specific traits. This predetermination is made by teachers or employers, for example. The sample is then given an instrument designed to measure the trait or traits under consideration. Each item is statistically examined to see whether it does in fact differentiate, say aggressive types from nonaggressive types. Through an iterative process of

---

[7]Harold H. Kassarjian, "Personality and Consumer Behavior: A Review." Journal of Marketing Research, Vol. VIII (November 1971), p. 409.

this nature and subsequent validation and reliability studies, a measuring instrument emerges which is specifically designed to measure traits which the researcher originally attempted to gauge.

A second type of personality instrument is the product of a factor analytic distillation process. Subjects are queried on a diverse variety of topics and test items are grouped on the basis of how well they measure the same statistical factor. Thus, the factor is empirically determined and subjectively labeled. This labeling process is done in such a fashion so that hopefully the label best describes the particular subset of items under consideration. Additional validation and reliability studies are conducted leading to the creation of a measuring instrument with several variables allegedly accounting for various nuances of behavior.

Examples of Frequently Used Instruments

One major difference between trait and factor theories and the work of the early theorists resides in their respective approaches. Trait and fact theories have as their locus the measurement of a developed personality while the earlier theorists devoted their attention to how a personality develops.

The two procedures for test development described by Kassarjian have yielded a large number of both standardized and nonstandardized personality instruments. Some of

the more frequently used inventories (those forms which are scored for more than one trait) by marketing researchers and consumer behaviorists include the Minnesota Multiphasic Personality Inventory (MMPI), the California Personality Inventory (CPI), the Thurston Temperament Schedule (TTS), the Sicteen Personality Factor Questionnaire (SPFQ), the Strong Vocational Interest Blank (SVIB), the Gordon Personal Profile (GPI), and the Edwards Personal Preference Schedule. All of the inventories mentioned are of the paper-and-pencil variety as opposed to their projective counterparts.

However, certain differences in the inventories such as the number and types of traits research and the criterion groups from which the traits were generated merit a brief examination of selected representative tests.

The Minnesota Multiphasic Personality Instrument

Various forms of this inventory exist, but one is used more often than the others. This is the 550 item test developed by:

> . . . comparing the responses of the numbers of a certain group with those of a control group and them selecting those items which differentiated between the two groups. In general the criterion groups consisted of neuropsychiatric patients who could, in turn, be classified into one of several diagnostic categories.[8]

The item pool was developed by choosing certain statements which most aptly described symptoms, complaints and other

---

[8]Allen L. Edwards, The Measurement of Personality Traits by Scales and Inventories, Holt, Rinehart, and Winston, Inc., New York, 1970, p. 53.

aspects of personality disorders found in textbooks on psychiatry and clinical psychology. In addition to the more aberrant portion of the item pool, certain items are included which purport to measure personal and social attitudes and personality traits.

The California Personality Instrument

This inventory is an attempt to reconcile some of the more offensive items of the MMPI and in so doing preserves approximately 200 of the original items while adding an additional 280 items. The scales were empirically generated but unlike its predecessor, the ratings were not predicated on psychiatric diagnosis. "For example, individuals might be asked to select, nominate or rate other individuals known to them in terms of leadership potential, or responsibility or some other trait."[9] Again, comparisons between control and criterion groups are needed in order to find those items which most powerfully discriminate between the two groups. The specific traits measured by the CPI include: Dominance, Capacity for Status, Sociability, Social Presence, Self-Acceptance, Sense of Well-Being, Responsibility, Socialization, Self-Control, Tolerance, Good Impression, Communality, Achievement via Conformance, Achievement via Independence, Intellectual Efficacy,

---

[9]Ibid., p. 57

Psychological Mindedness, Flexibility and Feminity.

The Sixteen Personality Factor Questionnaire

As the name implies, this inventory measures sixteen traits in several different forms. Form A, for example, is composed of 187 items, each made up of from ten to thirteen items. The sixteen traits were produced by an oblique factor-analysis technique resulting in oblique or correlated factors as opposed to orthogonal or uncorrelated factors.

The traits purportedly measured include: Reserved vs. Outgoing, Less Intelligent vs. More Intelligent, Affected by Feelings vs. Emotionally Stable, Humble vs. Assertive, Sober vs. Happy-Go-Lucky, Expedient vs. Conscientious, Shy vs. Venturesome, Tough-Minded vs. Tender-Minded, Trusting vs. Suspicious, Practical vs. Imaginative, Forthright vs. Shrewd, Placid vs. Apprehensive, Conservative vs. Experimenting, Group-Dependent vs. Self-Sufficient, Undisciplined vs. Controlled, and Relaxed vs. Tense.

The Edward's Personal Preference Schedule

This is a forced-choice inventory in which items are paired and the individual is instructed to select that item of each pair which he or she believes to be more descriptive of his or her personality. The inventory is composed of 210 different pairs of statements which are used to generate measurements on the following traits:

Achievement, Deference, Order, Exhibition, Autonomy, Affiliation, Intraception, Succorance, Dominance, Abasement, Nuturance, Change Endurance, Heterosexuality and Aggression.

The Edward's Personality Inventory

One inventory worthy of note is the Edward's Personality Inventory which is "designed to measure a large number of personality traits in which normal individuals vary."[10] Five booklets comprise this inventory, each of which contains 300 items all of a true-false format. This inventory purports to measure 53 personality traits, some similar to those traits measured by other inventories but also some of a less clinical nature. For example, the EPI contains such scales as Neat in Dress, Plans Work Efficiently, Has Cultural Interests and Worries About Making a Good Impression on Others, to name but a few. In addition, the inventory is characterized by a lack of typically offensive items nor are there any items that attempt to uncover an individual's religious or political beliefs. The point of view differs also. The EPI asks the individual to respond to the items in a manner he believes those individuals who know him best would respond. Like other inventories, these scales were generated by means of a factor-analysis technique resulting in correlated scale scores.

---

[10]Ibid, p. 59.

The Jackson Personality Research Form

The Jackson Personality Research Form utilizes a true-false format designed much like the EPI, to measure the variability of personality traits in normal individuals. It is composed of 440 items measuring 22 different traits. Among the traits measured in the JPRF are: Achievement, Affiliation, Aggression, Autonomy, Change, Dominance, Sentence, and Social Recognition. One major advantage of such an inventory is its nonclinical nature, which permits the measurement of less aberrant personality traits, a criticism leveled against much of the personality research to date.[11]

These six inventories, while admittedly not an exhaustive review of all inventories, are such that they represent a reasonable sample of the inventories used by marketing researchers and consumer behaviorists. The use of these inventories has been met with varying degrees of success, mostly disappointing.

The Problem Statement

As mentioned earlier, little of an unequivocal nature has been forthcoming from the plethora of research on personality. The abundance of disappointing findings has occassioned several pronouncements reflective of

---

[11]Joseph N. Fry, "Personality Variables and Cigarette Brand Choice," Journal of Marketing Research, (August 1970), pp. 298-304.

personality as a determinant of consumer behavior. Markin has opined ". . . we have not shown with a high degree of statistical significance or accuracy the value of using personality as a major or critical variable in consumer behavior."[12] In a similar vein Engel, Blackwell, and Kollat point out: "It would appear that students would rapidly become discouraged with the effectiveness of personality traits as indicators of various types of buyer behavior."[13] Finally, Harold Kassarjian makes the following statement concerning personality as an indicant and determinant of buyer behavior:

> A review of the degree of studies and papers can be summarized in the single word, equivocal. A few studies indicate a strong relationship between personality and aspects of consumer behavior, a few indicate no relationship, and the great majority indicate that if correlations do exist they are so weak as to be questionable or perhaps meaningless.[14]

The question now arises as to why the relationships are in fact so equivocal and weak. No one answer appears to explain this finding, rather several possible explanations have been advanced. The first explanation focuses on the validity of the measuring instruments used in the different studies. Kassarjian points out:

> Tests validated for specific uses in specific populations, such as college students, or as part of mental hospital intake batteries are applied to

---

[12] Markin, op. cit., p. 353.

[13] James F. Engel, David T. Kollat, and Roger D. Blackwell, Consumer Behavior, Holt, Rinehart and Winston, Inc., New York 1968, p. 155.

[14] Kassarjian, op. cit., p. 415.

> available subjects in the general population . . . The variables that lead to the assassination of a president, confinement in a mental hospital or suicide may not be identical to those that lead to the purchase of a washing machine, a pair of shoes, or chewing gum.[15]

To remedy this particular pitfall, Kassarjian suggests:

> Clearly if unequivocal results are to emerge consumer behavior researchers must develop their own definitions and design their own instruments to measure the personality variables that go into the purchase decision rather than using tools designed as part of a medical model to measure schizophrenia or mental stability.[16]

Another issue of validity which may explain the lack-luster results concerns the concept of response bias inherent in most behavioral research. Response bias occurs when, in the collection of information from a respondent, the reported value does not coincide with the actual value. Several reasons exist for this behavior. One that is extremely prevalent is the maintenance of the self concept or the enhancing of the self image. This is not a deliberate attempt to sabotage the research but rather a purely defensive response. William Wells clearly points out this problem:

> The measurements we take may come from some housewife sitting in a bathrobe at her kitchen table, trying to figure out what it is she is supposed to say in answering a questionnaire. Too often, she is not telling us about herself as she really is, but instead is telling us about herself as she thinks she is or wants us to think she is.[17]

---

[15] Ibid.

[16] Ibid.

[17] Ibid.

There is yet another question of reliability. Does a personality instrument designed to be administered in a clinical setting produce reliable results when administered in a completely different setting? More specifically, what happens to the reliability of a psychological instrument when administered in a market-fact-finding environment by means of telephone interview, personal interview or mail questionnaire?

While these potential explanations concerned themselves with the validity and reliability of the instruments used, another explanation exists whose locus is the theoretical basis or rather lack of, on which personality research has typically been conducted. Markin maintains personality research has suffered from too stringent an attempt to simplify the behavioral equation:

> The slavish attempts to attribute too mush significance to personality are yet another example of the tendency to overwork and overdramatize the reductive-functional approach to consumer behavior. Consumer behavior is not the product of a single determinant. Consumer characteristics and/or response tendencies cannot be reduced to a single common denominator--personality. Nor is personality the single derivative of the human behavior equation.[18]

Kassarjian corroborates this point by stating that one reason:

> . . . for the less-than-spectacular results in personality research is that many studies have been conducted by a shotgun approach with no specific hypotehsis or theoretical justification.

---

[18]Markin, op. cit., p. 354.

> To expect the influence of personality variables to account for a large portion of the variance is most certainly asking too much."[19]

Echoing this line of thought is Jacoby who points out:

> Careful examination reveals that, in most cases, no a priori thought is directed to how, or especially why, personality should or should not be related to that aspect of consumer behavior being studied.[20]

Thus, any effort to more clearly define and understand personality's role in the determination of buyer behavior appears to involve two alternative approaches. The first concerns the development of valid and reliable consumer-specific personality inventories.[21] The second focuses on the need for a theoretical structure in which the effects of personality will both influence and be influenced by other variables. This subsequent interdependency may then be traced to determine its ultimate impact on behavior. This proposal for research focuses on the latter approach for two reasons. First, it like the former, presents an opportunity to clarify the degree of personality's effect on behavior, degree of effect typically measured in terms of the

---

[19] Kassarjian, op. cit., p. 416

[20] Ibid.

[21] See for example: K.E.A. Villani and Yoram Wind, "On The Usage of 'Modified' Personality Trait Measures in Consumer Research," Journal of Consumer Research, Vol. 2, (December) 1975, pp. 223-228.

amount of variance in the dependent variable explained by the various personality traits used in the study. Second, and perhaps more important from a conceptual point of view, by focusing on a hypothesized functional structure it facilitates an understanding of the relationship between personality, selected variables and behavior. Consequently, it may prove prudent to incorporate more widely acceptable psychographic measures into the model since each of these have been examined in light of buying behavior. This points out a clearly identifiable research problem:

> To causally examine the effect of personality on brand choice, when incorporated within a hypothesized theoretical model.

A review of the relevant personality literature shows that over time an increasing sophistication in the discipline of consumer behavior and quantitative techniques has made possible various sources of investigation. Many of the studies reviewed have not enjoyed the wide empirical base that now prevails nor the availability of statistical techniques that exists. This lack of an empirical base and necessary methodology may contribute to the disappointing results achieved thus far.

Thesis Outline

This thesis proceeds along the following lines. Chapter Two examines the related relevant personality research and does so by breaking the studies down into three typologies according to the implicit or explicit models used in

the study. Chapter Three focuses on the methodology and hypotheses utilized in this investigation. Included in this chapter is a discussion of the theoretical framework, path analysis and the means by which the model used in the study is operationalized. The scope and limitations of the study are the locus of Chapter Four. Chapter Five details the results of the research according to the following format. First, the question of linearity is examined focusing on the potential moderating influence of the personality variable. Second, path coefficients are generated and examined. This permits an analysis of the role of personality and the other constructs on brand choice. This examination is made in two ways. First, individual traits are scrutinized and relationships detailed. Secondly, personality is looked at in terms of a composite variable synthesized from various traits. Finally, in this chapter, a test of the linkages is made and model specification addressed. Conclusions and recommendations form the locus of the final chapter where considerations for future research are offered.

CHAPTER II

LITERATURE REVIEW

Introduction

Limiting the scope of research efforts to a causal analysis of a theoretical structure relating personality to brand choice permits a more efficient and circumspect review of the relevant marketing and consumer behavior literature. In addition, by categorizing the previous efforts of researchers in terms of the explicit or implicit theoretical structures used provides even greater insight into the problems and the opportunities of personality research. Consequently, the literature review uses the following classificatory scheme to examine the personality research. The first typology consists of those studies which utilized a bivariate analysis of personality traits and some sort of behavior. The theoretical structure used in this sort of examination is typically $B=f(t)$. This is perhaps the simplest model and as such represents a basic building block on which to explicate more sophisticated efforts. The second typology concerns itself with a multivariate analysis of traits and behavior. Studies utilizing models such as $B=f(t_1, t_2, t_3,...t_n)$ and $B_1, B_2, B_3=f(t_1, t_2, t_3,...t_n)$ are discussed in this section. The final typology focuses on those studies which have made use of multivariate analysis

of traits and other variables in addition to personality traits that might affect behavior. These are typically of the form $B=f(t_1, t_2, t_3, \ldots t_n, o_1, o_2, o_3, o_n)$ where o_i indicates the inclusion of some other factor, be it demographic, psychographic or some psychological construct. Examining the literature in this manner should provide added insight into the problem of utilizing a theoretical structure for the basis of personality research.

Bivariate Models

The natural starting point for reviewing the various studies relating personality traits to purchase behavior would be those studies which viewed personality as the sole determinant of behavior. The model, implicit in this type of study, takes the form $B=f(t)$ and represents the ultimate in reductionism.

One of the first studies falling in this category was that done by Koponen.[22] Koponen found personality traits differed not only between purchasers and nonpurchasers of products but also found personality differences between types of products. Smokers of filtered cigarettes scored higher on dominance, change and achievement but lower on aggression, self-depreciation and autonomy than did smokers of non-filtered cigarettes. A similar analysis was made of three

---

[22]Koponen, "Personality Characteristics of Purchasers," Journal of Advertising Research, 1, (September, 1960), pp. 6-12.

unidentified magazines pointing out personality differences of readers. It is interesting to note, however, no levels of significance are reported on these findings and when subjected to a more vigorous examination by multiple regression, personality variables accounted for only about 6.5 percent of the variance in one product category and only 2 percent in another.

Tucker and Painter utilized the Gordon Personality Profile, specifically relating the traits of ascendency, responsibility, emotional stability, and sociability to the use or preference for nine different products.[23] Of the thirty-six correlations generated, only 13 were reported significant at $p < .05$, and R^2 ranged from a high of 32 percent (sociability and the acceptance of new fashions) to 0.8 percent (emotional stability and the use of vitamins).

Ralph Westfall hypothesized personality differences between owners of convertibles, compacts, and standard sized cars.[24] Using the Thurstone Temperament Schedule, Westfall found significant differences between owners of convertibles and standard/compact cars. Of the traits investigated, the traits of active, impulsive, stable, and sociable proved to be of greatest value as predictors of the

---

[23]W. T. Tucker and John J. Painter, "Personality and Product Use," Journal of Applied Psychology, 45 (1961), pp. 325-329.

[24]Ralph Westfall, "Psychological Factors Predicting Product Choice," Journal of Marketing, 26 (April, 1962), pp. 34-40.

type of car owned. In an extension of this same study, Westfall failed to identify any significant differences between Ford and Chevrolet owners using the TTS.

Jacobson and Kossoff identified three personality types using their own 16 item inventory.[25] They identified cautious conservatives, middle-of-the-roaders and confident explorers and uncovered significant differences in attitudes toward small cars ($p < .01$).

In an application of Riesman's inner and other directed typology, Kassarjian examined an allied behavior, preference for advertising appeals.[26] He found that social character accounted for only 9 percent of the variance of advertising preference scores. In attempting to explain this insignificant relationship Kassarjian pointed to his sample of college students who were found to be atypical with respect to media exposure and nonrepresentative of the general population.

Bell, used a questionnaire developed by Day and Hamblin to measure generalized self-confidence.[27] In a multi-phased study, Bell reported no association between specific self-

---

[25]Eugene Jacobson and Jerome Kossoff, "Self-Percept and Consumer Attitudes Toward Small Cars," Journal of Applied Psychology, 47, (August, 1963), pp. 242-245.

[26]Harold H. Kassarjian, "Social Character and Differential Preference for Mass Communication," Journal of Marketing Research, 2, (May, 1965), pp. 146-153.

[27]Gerald D. Bell, "Self-Confidence and Persuasion in Car Buying," Journal of Marketing Research, 4, (February, 1967), pp. 46-52.

confidence and persuasibility. Specific self-confidence was then found to be significantly related to general self-confidence in both men and women. When these two traits were analyzed with respect to the use of purchase pals three significant findings were forthcoming. Significant differences were found between those who were: a) high in general self-confidence and low in specific self-confidence; b) low in general, low in specific self-confidence; c) low in general and high in specific self-confidence and the frequency of the use of purchase pals. Similar analyses were made of the types of purchase pals with several significant differences being reported.

A 1967 study by Cohen made use of the Horney typology of confident, aggressive and detached traits.[28] Respondents were classified as being either compliant, aggressive or detached and selected product and brand preferences compared. Those respondents reported as scoring high on compliance were significantly heavier users of mouthwash and Dial soap, but significantly lower consumers of wine. Aggressive respondents were heavier users of Old Spice, mens' cologne and aftershave products in general, and manual razors, while detached respondents consumed more tea than their compliant and aggressive counterparts. These relationships were all significant at $p < .05$ while no significant relationships

---

[28]Joel B. Cohen, "An Interpersonal Orientation to the Study of Consumer Behavior," Journal of Marketing Research, 4, (August, 1967), pp. 270-278.

between personality typology and cigarettes, dress shirts, men's hair dressing, toothpaste, beer, dish products, gasoline, and headache remedies were found.

Kernan utilized both the Gordon Personality Profile and the Gordon Personal Inventory in a study of choice criteria, decision behavior and personality.[29] Using personality as the independent variable and each of four different decision criteria (Laplace, Wald, Hurwiez, and Savage) as the dependent variables, no significant or noteworthy zero-order correlations were found. Even when placed within a multiple regression format, similar insignificant and non-significant relationships were found.

A somewhat different approach to the study of product choice and personality was executed by Pennington and Peterson.[30] Utilizing 84 of the 399 items of the Strong Vocational Interest Blank, the researchers hypothesized a relationship between selected product preferences and interest patterns. Preferences for savings accounts or common stock and trips to either Las Vegas and Yellowstone Park were examined in light of SVIB scores. Numerous significant differences emerged

---

[29]Jerome B. Kernan, "Choice Criteria, Decision Behavior, and Personality," Journal of Marketing Research, 5, (May, 1968), pp. 155-164.

[30]Alan L. Pennington and Robert A. Peterson, "Interest Patterns and Product Preferences: An Exploratory Analysis," Journal of Marketing Research, 6, (August, 1969), pp. 284-290.

which evoked the following conclusions:

1. There are interest differences between people preferring different products in a forced choice situation.

2. These differentiating interest patterns can be characterized as having either people or nonpeople orientation.

3. These interest patterns were used to accurately predict certain product preferences.[31]

Hamm and Cundiff examined the relationship between levels of self-actualization and product perception.[32] Respondents in both the low self-actualization classification and the high self-actualization groups were analyzed to determine how they ranked the various products used in the study to describe their Self and Ideal-self. A rank correlation of .606 was generated for the two levels of self-actualization within the Self categories and .212 for their Ideal-self counterparts. This lead to the rejection of the null hypothesis that no difference existed in product perception between the HSA and LSA groups in the way they perceive their self-actualizing.

A 1970 study by Boone, using eighteen scales of the California Psychological Inventory, identified numerous differences between consumer innovators and late adopters

---

[31]Ibid., p. 289.

[32]B. Curtis Hamm and Edward W. Cundiff, "Self-Actualization and Product Perception," Journal of Marketing Research, 6, (November, 1969), pp. 470-472.

of cable television.[33] Consumer innovators scored significantly higher on the traits of achievement via independence, capacity for status, dominance, intellectual efficiency, self-acceptance, sense of well-being, social presence and tolerance than did late adopters.

In the same year, King and Summers using a self-designating questionnaire developed by Rogers examined the concept of a generalized opinion leader.[34] Among those respondents registering high in opinion leadership, it was found that varying degrees of overlap across product category existed. The highest correlation of .66 was found between large appliances and small appliances. The lowest correlation, .19 emerged between cosmetics and personal grooming aids and large appliances. This permitted the following conclusions:

1. Opinion leadership overlap across product categories is a common phenomenon.

2. Opinion leadership overlap is highest between product categories which involve similar interests.

3. The high opinion leadership overlap across all combinations suggests the existence of the generalized opinion leaders in consumer product contexts.[35]

---

[33]L. E. Boone, "The Search for the Consumer Innovator," Journal of Business, 43 (April, 1970), pp. 135-140.

[34]Charles W. King and John O. Summers, "Overlap of Opinion Leadership Across Consumer Product Categories," Journal of Marketing Research, 7 (February, 1970), pp. 43-50.

[35]Ibid., p. 49.

Another study utilizing Riesman's "tradition-directed," "inner-directed," and "other-directed" designation was conducted by Donnelly.[36] A chi square test of the relationship between social character (as designated by scores of the I. O. Social Preference Scale) and housewives' acceptance of new grocery products yielded five significant differences. Differences in the use of a pre-soak rinse, (p .01), canned pudding (p .01), canned cake frosting (p .001), and freeze-dried fruit cereals (p .10) were found to exist between inner-directed and other-directed respondents. Donnelly thus concluded, ". . . a relationship exists between housewives' acceptance of innovations and their social character as measured by the I. O. Social Preference Scale."[37]

Finally, the last study to be reviewed in this category is that of Arnon Perry who examined the relationship between heredity, personality traits, product attitude, and product consumption.[38] Based on this exploratory study using alcohol, cigarettes and coffee, Perry concluded ". . . no genetic component was found for the two personality

---

[36]James H. Connelly, "Socail Character and Acceptance of New Products," Journal of Marketing Research, 7 (February 1970), pp. 111-113.

[37]Ibid., p. 112.

[38]Arnon Perry, "Heredity, Personality Traits, Product Attitude, and Product Consumption--An Exploratory Study," Journal of Marketing Research, 10 (November 1973), pp. 376-379.

traits (anxiety and extroversion-introversion)." A secondary finding of this study

> . . . reveals that the consumption of cigarettes has a significant genetic component both by itself and in relation to our personality trait (anxiety) and the consumption of two other products (coffee and alcohol) ($p < .05$).[39]

These studies represent some of the more reductionistic attempts on the part of consumer behaviorists to identify relationships between individual traits and buying behavior. Some approached the subject on a "shotgun" basis appearing to have no established a priori theoretical rational for examining the relationships they did. However, their incipient efforts have demonstrated relationships do exist, no matter how weak, and consequently point out the need for further conceptualization of the research approach.

Multiple Trait Structures

The second classification of studies examined in this review is that which posits behavior to be a function of several personality traits. The rational for this approach appears to be two-fold. First, it suggests that some interdependency between or among traits may take place thus discriminating behavior. The second rational pivots on the techniques utilized. Powerful regression techniques permit the addition of independent variables on a step-by-step

---

[39]Ibid., p. 378.

basis according to specified statistical criteria. This allows the researcher to filter an entire personality battery through this regression procedure which in turn will select and retain these traits according to the largest portion of explained variance-behavior.

The potential problem with this approach is the lack of a theoretical basis for choosing traits. The researcher may have no apriori reason for including a specific trait, consequently, when it is chosen by the regression technique he is left trying to explain inclusion on some after-the-fact basis. In some cases no attempt at explanation is made.

The first study that corresponds to this approach is the Evans' study.[40] Evans made use of the Edwards Personal Preferences Schedule in attempting to identify differences between Ford and Chevrolet owners. Using a discriminant model composed of ten personality traits Evans was able to generate an R^2 of .1124, (barely significant at $p < .10$). Using this function to reclassify individuals, he found a classification rate of 62.9 percent, or about 13 percent greater than chance. When comparing these results to a discriminant function utilizing demographic variables only, Evans found the latter to have an R^2 of .1958 ($p < .10$) and

---

[40]Frank B. Evans, "Psychological and Objective Factors in the Prediction of Brand Choice," Journal of Business, 32, (October, 1959), pp. 340-369.

a classification rate of 69.9 percent. This comparison enabled Evans to attribute more value to demographic characteristics than to personality traits when attempting to identify buying behavior differences.

Several replications of and rejoinders to the Evans' study were made but without the addition of any significant substance.[41] Keuhn made what he considered to be a breakthrough when he focused on two traits, dominance and affiliation.[42] Using Evans' data, and by subtracting affiliation scores from dominance scores, Keuhn was able to increase the multiple R's within a range of .27 to .67. This study has, however, been critized for the rather abstract psychological meaning of dominance scores-affiliation scores.[43]

A 1967 study by Myers focused on the determinants of private brand attitude, one group of determinants being comprised of personality traits as identified by Cattell's

---

[41]See: Gary A. Steiner, "Notes on Franklin B. Evans' 'Psychological and Objective Factors in the Prediction of Brand Choice,'" The Journal of Business, Vol. 34. (January, 1961), pp. 57-60; Charles Winech "The Relationship Among Personality Needs, Objective Factors and Brand Choice: A Re-Examination," same as above pp. 61-66; Franklin B. Evans "You Still Can't Tell a Ford Owner From a Chevrolet Owner," same reference, pp. 67-73.

[42]Alfred A. Keuhn, "Demonstration of a Relationship Between Psychological Factors and Brand Choice," Journal of Business, 36, (April, 1963), pp. 237-241.

[43]Kassarjian, op. cit., p. 411.

Sixteen Personality Factor Inventory.[44] Using private brand attitude as the criterion variable and eight traits from the Cattell inventory as the independent variables Myers generated an R^2 of .047, ($p < .05$). His conclusion then, that even using the "best" personality predictors, only accounts for a small portion of the variance in private brand attitude.

A series of analyses were made on the J. Walter Thompson panel data concerning coffee purchases by Brody and Cunningham.[45] Using the EPPS, the researchers first ran a multiple regression designating brand loyalty as the dependent variation and ten personality and demographic variables as the independent variable. An R^2 of .031 was found, however, over half of this was attributable to the demographic variables. Having established a benchmark against which to compare subsequent analyses, Brody and Cunningham chose Chase and Sanborn and Folgers groups as the dependent variables. Loyalty was held constant at 50 percent (families who concentrated at least 50 percent of their purchases on one brand). Dependent variables included thirteen EPPS personality variables. The resulting regression equation yielded an R^2 of .15 ($p < .001$). When loyalty was varied

---

[44]John G. Myers, "Determinants of Private Brand Attitude," Journal of Marketing Research, 4, (February, 1967), pp. 73-81.

[45]Robert P. Brody and Scott M. Cunningham, "Personality Variables and the Consumer Decision Process," Journal of Marketing Research, 5, (February, 1968), pp. 50-7.

(40 percent - 100 percent in increments of 10) and regression equations recomputed using sixteen of the personality variables, the R^2 reached .48 for the 100 percent loyal groups. The reasoning behind this large jump in explained variance is that "personality variables should only differ for brand choice among people who see high-performance risk in the true product."[46] Consequently, personality should take on greater discriminating importance as the level of the purchaser's loyalty increases. This is a notable study for one major reason. The researchers approached the question of personality as a determinant of buying behavior with an a priori theoretical framework. This framework was tested and subsequently corroborated the researcher's hypothesis. This in turn allowed them to conclude that "personality-purchase behavior relationships may be caused by an inadequate theoretical framework."[47]

An attempt was made by Robertson and Myers to define the relationship between personality and two other variables, opinion leadership and innovative buying behavior.[48] In this study 18 traits from the California Psychological Inventory were used as independent variables. Dependent

---

[46]Ibid., p. 50.

[47]Ibid.

[48]Thomas S. Roberston and James H. Myers, "Personality Correlates of Opinion Leadership and Innovative Buying Behavior," Journal of Marketing Research, 6 (May, 1969), pp. 164-168.

variables were developed from measures across three product categories - appliances, clothing and food, and measures of influence (peer report) in purchases across product categories. The first measure corresponds to and operationalizes innovative behavior while the latter describes opinion leadership. With respect to innovative behavior the regression technique produced a range in R^2 from .04 for clothing to .23 for appliances. No significant R^2 values were reported for opinion leadership. These results, according to the researchers, "cast doubts on postulated relationships of basic personality variables with both innovative behavior and opinion leadership in several consumption areas." [49]

Alpert made use of cannonical correlation in an analysis of personality traits and product attribute determinance scores.[50] Bivariate correlations among the different variables were expectedly weak (maximum r^2 was .11) and few in number at the .05 significance level. Using cannonical analysis, Alpert related profiles of personality and the relative determinance of attributes. The four profiles or cannonical roots that emerged had R's of .6831, .6440, .6264, and .5941, all significant at the .05 level. While a certain amount of interpretational lattitude may

---

[49] Ibid., p. 167.

[50] Mark I. Alpert, "Personality and The Determinants of Product Choice," Journal of Marketing Research, 9, (February, 1972), pp. 89-92.

exist when cannonical analysis is applied, the results are highly suggestive of a relationship between personality and product choice when products are viewed as composites of attributes.

There are a couple of observations that merit mentioning concerning the studies that fall within this classification. The first observation concerns their number. There are significantly fewer, perhaps attesting to the belief that combinations of personality traits are insufficient in and of themselves as determinants of buying behavior. A number of the studies reported in this section will also be discussed in the following section because in the multi-stepped procedure they used, other independent variables were included.

A second observation, and one equally applicable to the first group of studies reviewed is that only one study (Brody and Cunningham, 1968) attempted to attack the question with some consideration as to how and why personality should convary with behavior the way it does. The Brody and Cunningham study not only concerned itself with the question of the magnitude of the relationship that exists but also why that relationship exists. That is, they employed some sort of a priori theoretical structure to their investigation. This approach is more specific and as such becomes much less of a hit-or-miss proposition.

Multivariate Structures

Perhaps disappointed by the erratic and generally unimpressive relationships manifested between traits and behavior, researchers looked for other explanatory variables capable of explaining more variance. Consequently, they turned to two major sets of variables, demographics and socioeconomic variables.

Surprisingly, the first to take this approach was Evans whose work was previously cited.[51] By combining the two classes of variables Evans hoped for greater explanatory and classificatory power. While the R^2 increased to .3991 ($p < .05$) little increase in the discriminating power of the variables was achieved.

In 1964, the Advertising Research Foundation published a study relating personality traits (EPPS) to J. Walter Thompson panel data on the purchase of paper products.[52] In only one equation was it able to raise the R^2 above 7 percent. The major finding focused on the revelation that large families use more toilet paper (R^2 = 12 percent). Even in those equations which explained 7 percent of the variance, squared and cubed powers of personality and demographic variables were required.

---

[51] Evan,s op. cit.

[52] Advertising Research Foundation, Are There Consumer Types, 1964.

In an exploratory vein Claycamp attempted to explain the difference between owners of commercial bank accounts and owners of savings and loan accounts.[53] In so doing, he made use of personality traits (EPPS), socioeconomic variables (age, education, total discretionary assets held at the date of the interview, etc.), asset balances, and reported motives for saving. Using those variables which had the most discriminating power, Claycamp utilized a multiple discriminant function and generated an R^2 of .36. Of the eight variables used, four were personality traits: need for autonomy, affiliation, achievement, and heterosexuality. Together with the other socioeconomic variables, personality traits were able to correctly classify 79 percent of the cases.

In the previously cited Myer's study, an attempt was made to increase the explanatory power of personality (using Cattell's) by including socioeconomic variables.[54] The degree of association found for the combined predictors and private brand attitude (R^2 = .154) was higher than for either the personality case (R^2 = .047) or the socioeconomic variables (R^2 not reported) by about 10 percent, (p .01).

Once again, referring to a study in an earlier section Brody and Cunningham expanded their analyses to include

---

[53]Henry J. Claycamp, "Characteristics of Owners of Thrift Deposits in Commercial Banks and Savings and Loan Associations," Journal of Marketing Research, 2 (May, 1965), pp. 163-170.

[54]Myers, op. cit.

demographic variables in addition to personality variables measured by the EPPS.[55] As in the first case they found a direct relation between explanatory power and brand loyalty. In the case of 100 percent brand loyalty, explained variance reached 36 percent, down from 43 percent achieved in the model using only personality variables and 100 percent loyalty. In addition, a two-brand and four-brand discriminant analysis using the same variables were conducted. The two-brand model correctly classified 80 percent of the respondents while the four-brand model was correct only in 58 percent of the cases. As far as the importance of personality in these models, 84 and 79 percent of the total vector scale values respectively were accounted for by personality.

Robertson and Kennedy examined the relationship between consumer innovators, socioeconomic variables and certain personality traits.[56] The traits included venturesomeness, cosmopolitanism and status concern, as measured on a questionnaire developed specifically for this study. A discriminant analysis was effected using the innovator, noninnovator designation as the dependent variable. The analysis generated an R^2 of .1739 with venturesomeness given a relative importance weight of 35 percent and status

---

[55]Brody and Cunningham, op. cit.

[56]Thomas S. Robertson and James N. Kennedy, "Prediction of Consumer Innovators: Application of Multiple Discriminant Analysis," Journal of Marketing Research, (February, 1968), pp. 64-69.

concern and cosmopolitanism 3 percent and 9 percent respectively.

Frank, Massey and Lodahl, in a 1969 study, concluded personality variables added little to demographics in predicting a household's purchase of beverages.[57] Dependent variables included purchases of beer, coffee and tea while independent variables included socioeconomic variables (sex, age, income, etc.) and personality characteristics based on the EPPS. A total of 15 dependent variables were used. These included activity measures, brand loyalty measures and store loyalty measures. Consequently 15 multiple regression equations were generated. Personality and socioeconomic variables were most powerful for explaining the number of beer brands purchased, $R^2 = .104$ and of least consequence in explaining the consistency of purchases for second and third most popular brands of tea, $R^2 = .028$. A further analysis showed that personality scores add a significant increment to the prediction from socioeconomic data in only 26 percent of the cases. This is contrasted with the socioeconomic data which had 78 percent of the predictions considered significant, ($p < .05$.) The overall conclusion by the researchers was that personality made a marginal contribution to socioeconomic and demographic variables in predicting household purchasing behavior.

---

[57]Ronald E. Frank, William F. Marsy, and Thomas M. Lodahl, "Purchasing Behavior and Personal Attributes, " Journal of Advertising Research, Vol. 9, No. 4, pp. 15-24.

Carman approached the subject from a unique perspective.[58] The predictors used in this study were divided into 4 categories.

1. Economic, Demographic and Cultural Variables
2. Personality, Perceived Role and Mobility Variables
3. Personal Sources of Information, Media Exposure, Geographic Location and Food Shopping Awareness
4. Food Shopping Variables.

These predictions were analyzed using A.I.D. analysis to determine which predictors were most important. These were then regressed against measures of chain loyalty and product loyalty. In both cases, one general conclusion is forthcoming. The personality variables included exhibited little importance in explaining either chain or product loyalty.

A 1971 study by Fry, however, had somewhat more success.[59] Fry examined the relationship between cigarette brands and specific socioeconomic and personality measures (Jackson Personality Research Form.) Brands were categorized into two groups based upon the criteria of mildness, femininity and elegance, with group 1 brands being rated higher on all three attributes than group 2 brands. An R^2 of .068 was found to exist for socioeconomic variables only.

---

[58]James M. Carman, "Correlates of Brand Loyalty: Some Positive Results," Journal of Marketing Research, 7 (February, 1970), pp. 67-76.

[59]Joseph N. Fry, "Personality Variables and Cigarette Brand Choice, "Journal of Marketing Research, 8 (August, 1970), pp. 298-304.

This increased to an R^2 of .211 with the incorporation of the personality variables. During the course of this analysis Fry concluded that:

> Personality variables as measured by standard tests appear to have considerable potential for improving understanding of the psychological basis for brand choice . . . The findings point to needed refinements in theoretical and empirical work on consumer brand choice. Howard and Sheth, for example, link personality with brand evaluation and choice via motive and choice criteria constructs. The linkage is not well defined, and Howard and Sheth wonder, in fact, whether such a linkage can be formed for general personality measures.[60]

Greeno, Sommers and Kernan effected a cluster analysis of housewives according to the emphasis given various product categories as descriptive of the self.[61] These clusters were then analyzed in terms of personality (Gordon Personal Profile), socioeconomic variables, and demographic variables. Qualitative analyses are made along the following order:

> The cinderellas (IV) were described as being torn between homemaking and glamour which accounts for their low ascendency, responsibility, emotional stability and sociability. This is a very white cluster, with comparatively low income. That they are older suggests a convergence on their unhappy lot and likely a prognosis of further frustration.[62]

In addition, the researchers conducted several Tukey tests on the mean ascendancy score differences between clusters. Mean differences between clusters I and II, V and VI, and

---

[60] Ibid., p. 303.

[61] Daniel W. Greeno, Montrose S. Sommers, and Jerome B. Kernan, "Personality and Implicit Behavior Patterns," Journal of Marketing Research, 10 (February, 1973) pp.63-69.

[62] Ibid., p. 68.

between clusters IV and II and V, and VI were all found to be significant at the .05 level. Several other intercluster differences were found to exist, again supporting the conclusion that personality does discriminate between behavior patterns.

In a study conducted by Villani, a nonstandardized personality questionnaire was used to identify thirteen traits.[63] In addition 51 lifestyle factors were derived and added to four demographic measures. A comparison of R^2's for demographic predictors, personality variables, life style variables and combined variables indicates that the latter group provides the greatest explanatory power. One note, however, is that personality variables do not appear to add much explanatory power to program selection. Rather, that appears to be forthcoming from the addition of life style variables. When viewers were clustered according to viewing habits and cross-classified with the independent variables autonomy and self-confidence emerged as significant. Moreover, when a discriminant analysis was conducted autonomy, external control and self-confidence were found to be significant discriminators.

---

[63]Kathryn E. Villani, "Personality/Life Style and Television Viewing Behavior," Journal of Marketing Research, 12 (November, 1975), pp. 432-439.

In a more recent study conducted by Raymond Horton, personality was hypothesized to affect brand choice strategy behavior.[64] In addition, Horton examined an interactive relationship between selected personality traits and the perceived risk that is associated with each of the product classes used in the study. In so doing, self-confidence and anxiety were shown to be significantly related to brand choice behavior but the hypothesis concerning the interactive relationships did not hold up even at the .10 level of significance.

The studies reviewed in this section typically made use of personality variables and either demographic or socio-economic variables or both. This was an attempt to increase the explanatory power of personality. This approach indicates an overriding concern with the quantitative aspects of the problem at the expense of the qualitative side of the question. It is apparent from the review of the literature that little attention has been given to a formal theoretical structure for the analyses of this problem. It is further apparent that personality, in and of itself, is insufficient to explain, to any acceptable degree, nuances of behavior. What appears to be lacking is a theoretical structure which explains behavior. This involves expanding the basis of the investigation to encompass other variables which have been shown to be important in the determination of behavior. None

---

[64]Raymond L. Horton, "Some Relationships Between Personality and Consumer Decision Making, "Journal of Marketing Research, 16 (May 1979), pp. 233-246.

of the reviewed studies recognized the importance of such constructs as intentions, attitudes, beliefs or any of the other cognitive process which have proven important in the study of behavior. Instead, addition was focused solely or almost exclusively on the personality variable, a methodology which has been pointed out represents the ultimate in reductionism. What happens to the personality variable when these other constructs are included in the analysis? Section III details a research methodology whereby this question is answered.

CHAPTER III

Methodology

Introduction

The first order of necessity in attempting to examine the effect of an individual's personality on that individual's brand choice behavior is to develop a new or borrow an already hypothesized structure for analysis. A second necessary step entails the fitting of an analytical technique to the particular problem under scrutiny. Finally a question of how to operationalize and collect the data on the various constructs remains to be answered. These three concerns form the locus of the discussion in this section.

A Theoretical Framework

There are fortunately available, several theoretical structures relating personality to behavior all capable of being analyzed in a causal manner. One such model, and the one chosen as the vehicle for this research, is the Engel, Blackwell, and Kollat model.[65] Figure 1 depicts the relevant portion of the model excerpted from the more comprehensive model developed throughout their book. It is important to understand that only a portion of the model is being

---

[65]See: James F. Engel, Roger D. Blackwell and David T. Kollat, Consumer Behavior, Third ed., Holt, Rinehart, and Winston Inc., New York, 1978.

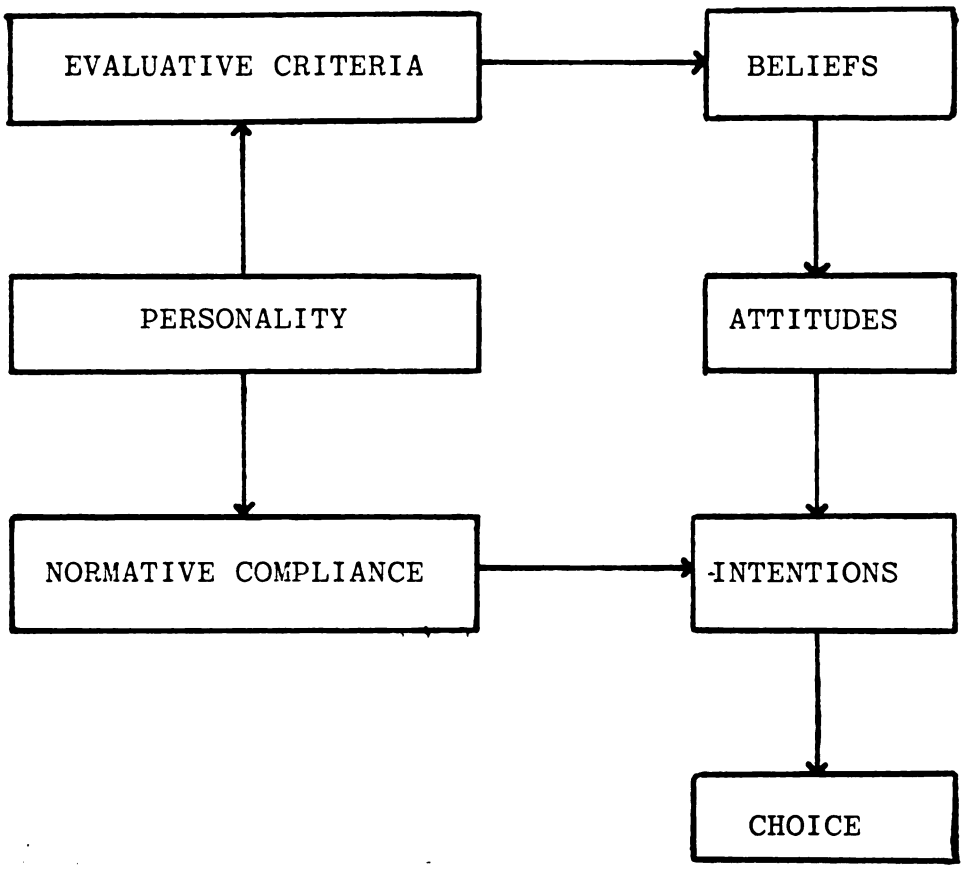

Figure 1 Relevant Portion of the EKB Model[67]

---

[67]Ibid., p. 32.

used in the present research and that other factors impinge upon the choice decision. However, it is the purpose and intention of this research to focus only on these variables incorporated in Figure 1.

The key variable in this research design is the personality variable and is consequently chosen as the starting point in explicating the model's linkages. Engel, Blackwell, and Kollat use the term personality and lifestyle inter-changeably and define them as a . . .

> pattern of enduring traits, activities, interests and opinions that determine general behavior and thereby make one individual distinctive in comparison with another.[66]

It in turn is derived from an individual's genetic makeup and conditioned by cultural norms and experience.

Two aspects of this definition merit further mention. The first concerns the use of factors in determining and measuring a person's personality. As discussed earlier, the central idea of trait and factor theories is a distillation process by which several related variables are synthesized into common factors and subjectively labeled according to what the researcher feels they measure. It is this approach which has accounted for the abundance of empirical work attempting to relate personality to some type of

---

[66]Ibid., p. 29.

more-or-less specific behavior. The second aspect of this definition focuses on what the authors of the model refer to general behavior. Implicit in their definition is the idea that personality should not necessarily account for a predominance of predictive or explanatory variation when correlated with any type of specific behavior. Rather, personality may demonstrate a more moderating influence on behavior than a direct one.

The original model contains an intervening variable between personality and evaluative criteria. This variable is motives. Motives were so placed because the authors argue that motives are impacted by an individual's personality. As previously stated, one's basic personality is a function of a lifetime of learning and experience. This learning and experience serves to reinforce certain patterns of behavior which become lodged in the basic personality as motives -- "enduring predispositions that direct behavior toward attaining certain generic goals."[68] In the present configuration (Figure 1) the motive variable has been dropped. Several reasons account for this decision and are explained in the section on scope and limitations.

Evaluative criteria form a hypothesized linkage between personality and attitude by virtue of "their specific

---

[68]Ibid., p. 220.

representation in the form of those physical product attributes as well as strictly subjective factors the consumer considers to be important in the purchase decision."[69] They are shaped by motives which operate in a specific manner to mold the particular criteria into product and brand benefits that will contribute to motive satisfaction. One other influence is hypothesized to contribute to the emergence and preeminence of evaluative criteria, that being information and experience.

Two important aspects of evaluative criteria have been identified through a number of research efforts. The first concerns the number of evaluative criteria called into play by most consumers. Usually six or fewer criteria are evoked in most buying decisions, but as Fishbein has indicated, the number may be as great as nine.[70] The second aspect of note concerns the saliency of the criteria. Hansen has reported, "frequently one or two criteria will stand out above all others as being critical in that they must be satisfied before a purchase will be made."[71]

The remaining components in the model are extremely closely related and may perhaps be best explained by examining the work of Martin Fishbein upon which the model heavily

---

[69]Ibid., p. 366.

[70]Ibid., P. 369.

[71]Ibid.

relies. The basic representation of the Fishbein Expectancy Value model takes the following form:

$$A_o = \sum_{i=1}^{n} B_i \cdot a_i$$

The B_i component represents the belief portion of the attitude configuration and was originally defined as "the probability that A_o is related to some other object x_i."[72] In a consumer behavior setting this definition has been extended to represent the probability that a brand does or does not possess a certain attribute. The a_i component represents the evaluative aspect of B_i, that is, the respondent's attitude toward x_i. This is the affective term of the model typically measured in terms of good or bad. While both the belief and attitude components are juxtaposed within the confines of Fishbein's model, beliefs are not viewed as part of attitude. Rather, Fishbein chooses to define them (beliefs and another variable, behavioral intent) independently and to view them as phenomena that are related to attitudes.[73]

What then is the relationship between an individual's beliefs, attitudes, and brand evaluation? Using the expectancy-value model, an individual evaluates an alternative

---

[72]Martin Fishbein, "Attitude and the Prediction of Behavior," Readings in Attitude Theory and Measurement, John Wiley and Sons, Inc., New York, 1967, pp. 477-492.

[73]Ibid.

on more than evaluative criteria. The forthcoming judgments are based on "beliefs that assess whether or not the object actually possesses the attribute in question plus an evaluation of the goodness or badness of that belief."[74] The "best brand" then is that for which the highest score is computed using the aforementioned configuration.

This basic Fishbein configuration has been extended to encompass three major considerations felt to be important in the brand-choice decision. First, attitude toward the act was substituted for attitude toward the object. This has the effect of taking into account social influences heretofore not considered. Fishbein argues that an individual's "attitude toward an object may be related to his behavior with respect to that object."[75] This is especially true when for instance the result of performing a specific behavior is done so with respect to someone he either likes or dislikes. In the case where the behavior is performed in the presence of someone liked, the attitude toward that act should vary significantly from the attitude toward performing an act with respect to someone disliked.

A second change incorporates a variable Fishbein labeled normative beliefs. These beliefs reflect the

---

[74]Engel, Blackwell, and Kollat, op. cit., p. 400.

[75]Fishbein, op. cit., p. 470.

existence of social norms, or "internalized, socially sanctioned forms of behavior."[76] However, the mere existence of these situated norms of behavior does not insure compliance with them. Consequently, Fishbein added a third change, that being a variable labeled motivation to comply. This represents a measurement of how much the individual wants to do what he is expected to do. In the system under investigation, the normative belief and motivation to comply variables are synthesized into what Engel, Blackwell and Kollat call normative compliance. This is done by multiplying the individual measurements of NB and MC for each statement and summing them across all pertinent statements.

In its entirety the extended Fisbein model takes the form:

$$B \cong BI = (A_{ACT})\ W_o + (NB) \cdot (MC)\ W_1$$

It is important to note that the summated components of the model do not predict behavior perfectly. Rather, their exists an intervening variable, behavioral intent, which approximates behavior. In the system adapted for the present analysis, this intention variable is defined as "the subjective probability that a specified action will be undertaken"[77] and, as such, represents an intervening

---

[76]Engel, Blackwell, and Kollat, op. cit., p. 400.

[77]Ibid., p. 29.

variable between attitude and choice.

The belief variable is operationally defined as "information that links a given alternative to a specified evaluative criteria, specifying the extent to which the alternative possesses the desired attribute."[78] Attitude, as used within this system, is considered to be "a learned predisposition to respond consistently in a favorable or unfavorable manner with respect to a given alternative."[79] The implied causal relationship among beliefs, attitudes and intentions is such that a change in belief "leads to a change in attitude which, all things being equal, will result in the establishment of a purchase intention or change in existing intentions."[80] Note, too, a change in intention can be effected by a change in normative compliance. This has two ramifications. A change in the normative compliance variable may come about by either a change in norms or a change in the individual's motivation to comply with a particular norm. Within the present system, normative compliance is treated as an internalized environmental influence and considered as a store of information and experience. However, as the authors point out:

> . . . normative compliance requires more than just the existence of influence on choice from friends, relatives, and others. The individual

---

[78] Ibid., p. 27.

[79] Ibid.

[80] Ibid., p. 29.

> also must be motivated to comply, and this sensitivity to influence is a factor in one's personality make-up.[81]

This explains the link to personality.

The final variable in the model is the choice variable. Choice is simply regarded as the selection and purchase of an alternative. However, as defined the alternative could be at either the product class level or the brand level. In this case, the dependent variable choice, is defined at the brand level.

As mentioned previously, other variables impact the decision process but are not being dealt with directly. These variables, by necessity, are considered exogenous to this particular study. However, considering them as such is by no means tantamount to considering them unimportant or inconsequential. The other portions of the model are left for other research efforts.

Path Analysis: A Causal Methodology

Since the thrust of this research is that of causally examining the role of personality in brand choice in conjunction with other variables (normative compliance, evaluative criteria, beliefs, attitudes, and intentions) it is necessary to choose a technique which is amenable to this objective. Path analysis is just such a technique.

---

[81] Ibid.

Identification of Structural Equations

Accordingly, path analysis permits the decomposition of estimated linear relationships among a set of variables to examine them for any extant causality. This notion of causality is pivotal to the use of path analysis.

> Causal modeling techniques do not allow one to determine the direction of causality between two variables nor do they allow one to conclude that a causal relationship exists except under a restrictive set of conditions.[82]

The first condition requires a concommitant variation or covariation between the two variables under study. This is not a very stringent condition to verify since measurement of variation or covariation is easily undertaken. A secondary condition requires a temporal ordering between the variables. (This condition is implied in the EKB model.) It is the third condition which proves to be the most difficult. Causal modeling requires "The elimination of other possible causal factors that may be producing the observed relationship between X and Y."[83] There is no statistical test to simplify and assess the correctness of a decision as to which variables to include and which to exclude. Accordingly, the decision is reduced to one of "substantive and theoretical insights into the problem under investigation."[84] With respect to a causal

---

[82]Herbert B. Asher, Causal Modeling, Sage Publications, Beverly Hills, 1976, p. 11.

[83]Ibid., p. 12.

[84]Ibid.

analysis of the Engel, Blackwell and Kollat model, the assumptions or conditions are well met. First, condition one and two are made explicit in the explication of the model in the previous section. Secondly, and perhaps more problematic than the first two conditions, is the question of closure. Only a relevant portion of the model has been extracted for study in this instance. It can, with great certainty, be argued that other factors are important. However, their exclusion is dictated by a necessity for simplification. Consequently, the research proceeds on an "as if" basis--as if any exogenous variables presented no problem. The veracity of this assumption, to a certain extent will be born out in the subsequent analysis.

Figure 2 reproduces Figure 1 in a manner more conducive to this analysis, including the hypothesized linkage between the different variables indicated by the respective path coefficients. This figure can be represented mathematically by the following set of equations.

By examing the direct influences only in Figure 2, the following structural equations may be generated:

(A) $X_2 = P_{21} X_1 + e_2$

(B) $X_3 = P_{32} X_2 + e_3$

(C) $X_4 = P_{43} X_3 + e_4$

(D) $X_5 = P_{51} X_1 + e_5$

(E) $X_6 = P_{65} X_5 + P_{64} X_4 + e_6$

(F) $X_7 = P_{76} X_6 + e_7$

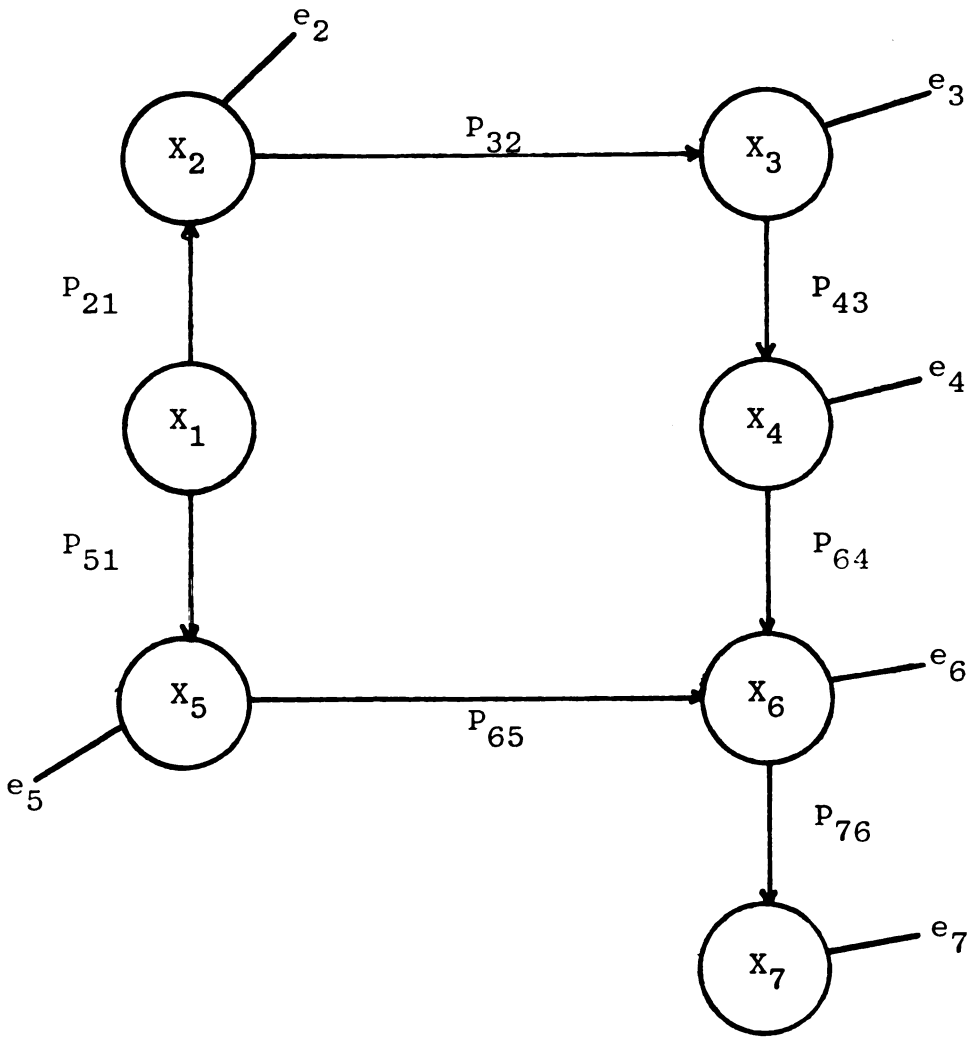

Figure 2

General Path Diagram of EKB Model

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

Identification in Recursive Models

At this juncture it becomes necessary to examine the system of structural equations in light of a concept called identification. The concept of identification refers to the relationship between the number of unknowns contained within the system and the number of linearly independent equations. Three situations may arise in a path analytic examination of a model.

The first situation is one in which there are more equations than unknowns called overidentification. This produces a finite set of solutions for the determination of path coefficients with the property that the solutions generated will vary according to the equations used in their solution. Consequently, very dissimilar results may be forthcoming leaving the researcher uncertain as to which solutions are the true solutions. A second situation results when there are more unknowns than linearly independent equations. This is referred to as underidentification and may produce an infinite set of solutions, obviously more confounding to stable inferences than the problems posed by an overidentified system of equations. Finally, the ideal condition is an exactly identified system where the number of unknowns exactly equals the number of equations involved in their solution. This produces a unique solution set.

The present system of equations is recursive in nature, that is, having no feedback loops. This may be

determined by a visual examination of the model itself or through a more formal test of the system. This test involves rewriting the structural equations in terms of their corresponding error components. In so doing, the equation for the exogenous variable X_1 is also included.[85] Equations A-F are rewritten below this time including the exogenous variable X_1.

$$e_1 = X_1$$
$$e_2 = -P_{21}X_1 + X_2$$
$$e_3 = -P_{32}X_2 + X_3$$
$$e_4 = -P_{43}X_3 + X_4$$
$$e_5 = -P_{51}X_1 + X_5$$
$$e_6 = -P_{64}X_4 - P_{65}X_5 + X_6$$
$$e_7 = -P_{76}X_6 + X_7$$

By arraying the above equations down the side with the variables included in the system across the top, a matrix of coefficients may be produced. This is shown below:

TABLE 1

Coefficient Matrix

X_1	X_2	X_3	X_4	X_5	X_6	X_7
1	0	0	0	0	0	0
$-P_{21}$	1	0	0	0	0	0
0	$-P_{32}$	1	0	0	0	0
0	0	$-P_{43}$	1	0	0	0
$-P_{51}$	0	0	0	1	0	0
0	0	0	$-P_{64}$	$-P_{65}$	1	0
0	0	0	0	0	$-P_{76}$	1

[85] Ibid., p. 69.

By definition, a recursive system will contain all zero entries in either the upper or lower half of the matrix depending on the subscript notation used.[86] As can be seen by examining the matrix, this condition prevails, hence the system is recursive. This becomes important in the resolution of the identification problem since the remedy depends on whether the researcher is dealing with a recursive or nonrecursive system. Since the system is recursive, the question of identification becomes less problematic with the invocation of two basic assumptions common to recursive model analysis. The first assumption requires the imposition of limitations on the coefficients forming the linkages between the variables. The second assumption assumes that the pairwise correlation between the error terms is zero.[87]

With respect to the first assumption, a recursive model always invokes a limitation on the number of coefficients since there are no feedback loops. Consequently, at least half of the coefficients have been set equal to zero. In this case, the model as specified, has in addition, set several other path coefficients equal to zero based on substantive considerations. Moreover, since all the error terms are assumed to be pairwise uncorrelated seven more unknowns are eliminated. What is left is a system of seven

---

[86] Ibid.

[87] Ibid., pp. 50-51.

equations with seven unknowns exactly identified, and solvable.

Instrumental Variables

Once the structural equations have been generated and examined for identification the task becomes one of developing estimates for the various path coefficients. This is done by operating on the structural equations with variables called instruments. The salient property of these instruments is that they are "uncorrelated with the residual terms in the equations in which they are used."[88] The instrumental variable approach poses no operational problems in solving for path coefficients using a regression mode in those cases where every possible linkage in a recursive system has been specified. However, in those recursive systems in which certain paths have been deleted based on substantive and theoretical grounds, the instrumental variable approach produces more equations than unknowns, a condition of overidentification. The problem now becomes one of choosing a subset of equations for solving for the unknowns. What justification exists for using those instruments which will yield solutions equivalent to regression coefficients? Several researchers have dealt with this question.

Bouden developed a procedure which minimizes the sum of squares utilizing information obtained from all the

---

[88] Ibid., p. 31

equations.[89] Goldberger provided a critique of Bouden's work emphasizing the need to identify the desirable properties of estimates.[90] In so doing he showed that estimates of path coefficients obtained by ordinary least squares methods were preferable since the ordinary least squares method produces estimates with smaller sampling variability.[91]

The major justification in using these instrumental variables which lead to solutions equivalent to regression coefficients is based on the need to identify the desirable properties of estimators. To this end, Wonnacott and Wonnacott have enumerated three characteristics.[92] The first property is that of unbiasedness. Unbiasedness refers to the ability of the estimator to provide, on the average, an estimate of the true population parameter. Thus, if μ is an unknown population parameter $\bar{X}$ is an estimate of μ, $\bar{X}$ is said to be an unbiased estimate of μ if $E(\bar{X}) = \mu$, where $E(\bar{X})$ is the expected value of the estimator $\bar{X}$. An efficient estimator is one which has a small sampling variability. This is, if iterative estimates are obtained from different samples the variance of the calculated estimates should be small. The third desirable property of estimator is that of consistency. This says that $\bar{X}$ is consistent if

---

[89] Ibid., p. 46.

[90] Ibid., p. 47.

[91] Ibid., p. 46.

[92] Ibid., p. 46.

$\bar{X} \rightarrow \mu$ as $n \rightarrow \infty$. In other words, the estimate should approach the true population parameter as the sample size gets larger and larger.

Lease squares estimates are often referred to as BLUE estimates-best (minimum variance), linear, unbiased estimates. "This fact then provides some justification for using only those estimates equivalent to regression coefficients."[93] Consequently, in the present system, estimates for the path coefficients may be generated by using the instrumental variable approach. This involves multiplying each standardized structural equation by the variable(s) which are contained within them. Invoking two properties of standardized variables simplifies the use of the instrumental variable approach. First, the expectation of terms expressed as X_i^2 is equal to unity. Secondly, the expectation of X_iX_j equals the coefficient r_{ij}. In addition, by assuming that the error term is uncorrelated with the independent variable allows one to write $r_{iu} = 0$, a basic assumption in the correlation model. This permits the deletion of the error term from the structural equation thus simplifying the process.

Operating on structural equation $A(X_2 = P_{21}X_1)$ with corresponding instrumental variables produces the following:

$X_2X_1' = P_{21}X_1X_1'$ (where X_1' = the standardized instrument)

$r_{12} = P_{21}$.

---

[93] Ibid., p. 46.

This process produces similar results for equations B, C and D. Consequently the estimates for these path coefficients are:

$$r_{12} = P_{21}$$

$$r_{23} = P_{32}$$

$$r_{34} = P_{43}$$

$$r_{15} = P_{51}$$

Equations E and F are slightly more complex:

$$(E)\ X_6 = P_{65}X_5 + P_{64}X_4$$

Multiplying through by both X_5' and X_4' yields:

$$r_{56} = P_{65} + P_{64}r_{45}$$

and.

$$r_{64} = P_{65}r_{45} + P_{64}$$

This produces two nonhomogeneous equations with two unknowns, P_{65} and P_{64} which are solvable. In a similar fashion, equation (F) may be decomposed into two solvable nonhomogeneous equations with two unknowns:

$$r_{17} = P_{71} + P_{76}r_{16}$$

and,

$$r_{76} = P_{71}r_{16} + P_{76}$$

All that remains is to substitute into the equations the corresponding correlation coefficients from the correlation matrix. This yields estimates of the various path coefficients.

A question remains concerning the interpretation of the estimated path coefficients. Land has stated that the path coefficient P_{ij} "measures the fraction of the standard

deviation of the endogenous variable . . . for which the designated variable is directly responsible."[94] Accordingly, squaring P_{ij} would imply that P_{ij}^2 equals the proportion of variance in the dependent variable directly accounted for by the independent variable under consideration. This interpretation has been proven erroneous due to the existence of indirect effects which can not be uniquely partioned among the variables under scrutiny. Therefore:

> . . . the most useful statements to be made in interpreting path coefficients involve a comparison of the relative magnitudes of the coefficients within the same model and an assertion that a certain change in one variable produces a specified change in another.[95]

Finally, yet of rather significant importance, is that path analysis enables the testing of the model as specified on an a priori basis. The intervariable linkages can be examined to determine whether the specified relationships exist as articulated in the model.

Tests of the Linkages

It is now possible to make tests of the linkages once path coefficients have been generated. Using Blalock's model testing technique it may be determined whether a linkage should be included in the model or not.[96] This technique pivots on the use of partial regression coefficients and pairs of variables. The actual value of the

---

[94] Ibid., p. 41.

[95] Ibid., p. 45.

[96] Ibid., p. 22.

partial regression coefficient is compared to the predicted value which is set at zero. According to this technique, the investigator:

> . . . looks for pairs of variables between which linkages have been omitted and generates predictions that the correlations between these pairs of variables controlling for appropriate other variables should be zero.[97]

In so doing all those variables prior to or intervening between the two variables in question are controlled. In the present system the following prediction equations may be generated:

$r_{13.2} = 0$

$r_{14.23} = 0$

$r_{16.2345} = 0$

$r_{17.23456} = 0$

$r_{24.13} = 0$

$r_{25.134} = 0$

$r_{26.1345} = 0$

$r_{27.13456} = 0$

$r_{35.124} = 0$

$r_{36.1245} = 0$

$r_{37.12456} = 0$

$r_{45.123} = 0$

$r_{47.12356} = 0$

$r_{57.12346} = 0$

The actual partial correlation coefficients are compared to the predicted values to determine whether or not

---

[97] Ibid.

they are significantly different. If not, the model holds as specified. If significant differences do exist, this alone does not provide a rational for inclusion of the specified linkage. Model revision involves not only considerations based on the data but also substantive issues of underlying theoretical considerations. According to Asher, ". . . where confidence in one's theory is high, theoretical considerations should probably be given greater weight in the model testing."[98]

One major issue arises as to the size of the differences between actual and predicted partial r's necessary to merit a revision of the model. Asher points the not uncommon practice of arbitrarily specifying decision rules such as differences greater than .05 or .1 suggest revision while differences less than .05 or .1 substantiate the model as specified.[99]

A second area of interest focuses on the relative contribution made by each of the variables to brand choice. This can be done by comparing the path coefficients. While intuitively it is felt that the closer (in path distances) the construct comes to brand choice the greater will be its importance. Hence, intention, attitudes, and beliefs may exert more influence on brand choice than personality. However, of additional interest is the relationship between

---

[98]Ibid., p. 24.

[99]Ibid.

personality and those constructs to which it is juxtaposed.

There are several advantages forthcoming from an analysis of this nature. First, and perhaps one of the analytically most important advantages of path analysis, is its ability to measure the direct and indirect effects that one variable exerts on another. This is of paramount importance since the objective of this research effort is to examine both the direct and indirect effects of personality on the other variables impacting the brand choice decision. This decomposition aspect is not possible in ordinary regression. Consequently:

> Path analysis allows one to examine the causal processes underlying the observed relationships and to estimate the relative importance of alternative paths of influence.[100]

Another advantage derived from the use of this methodology is that it permits the decomposition of the correlation between any two variables into a sum of the simple and compound paths. The simple path is analogous to the direct effect of one variable on another while the compound path is equal to the indirect effect. Thus the total covariation between two variables is equal to the sum of the simple and compound paths. These relationships are detailed in Table 2 on the following pages. The simple (direct) effect is self-explanatory. It is the compound (indirect) path that merits further explanation.

---

[100]Ibid., p. 32.

TABLE 2

VARIABLE DECOMPOSITION

Bivariate Relationship	Direct	Indirect	Total
X_1 on X_2	P_{21}	None	r_{12}
X_1 on X_3	None	$P_{21}P_{32}$	$P_{21}P_{32}$
X_1 on X_4	None	$P_{43}P_{32}P_{21}$	$P_{43}P_{32}P_{21}$
X_1 on X_5	P_{51}	None	P_{51}
X_1 on X_6	None	$(P_{51}P_{65})+(P_{64}P_{43}P_{32}P_{21})$	$(P_{51}P_{65})+(P_{64}P_{43}P_{32}P_{21})$
X_1 on X_7	None	$P_{76}P_{64}P_{43}P_{32}P_{21}+P_{76}P_{65}P_{51}$	$P_{76}P_{64}P_{43}P_{32}P_{21}+P_{76}P_{65}P_{51}$
X_2 on X_3	P_{32}	None	P_{32}
X_2 on X_4	None	$P_{43}P_{32}$	$P_{43}P_{32}$
X_2 on X_5	None	None	None
X_2 on X_6	None	$P_{64}P_{43}P_{32}$	$P_{64}P_{43}P_{32}$
X_2 on X_7	None	$P_{76}P_{64}P_{43}P_{32}$	$P_{76}P_{64}P_{43}P_{32}$
X_3 on X_4	P_{43}	None	P_{43}
X_3 on X_5	None	None	None
X_3 on X_6	None	$P_{64}P_{43}$	$P_{64}P_{43}$

TABLE 2--Continued

Bivariate Relationship	Direct	Indirect	Total
X_3 on X_7	None	$P_{76}P_{64}P_{43}$	$P_{76}P_{64}P_{43}$
X_4 on X_5	None	None	None
X_4 on X_6	P_{64}	None	P_{64}
X_4 on X_7	None	$P_{76}P_{64}$	$P_{76}P_{64}$
X_5 on X_6	P_{65}	None	P_{65}
X_5 on X_7	None	$P_{76}P_{65}$	$P_{76}P_{65}$
X_6 on X_7	P_{76}	None	P_{76}

In the Engel, Blackwell and Kollat model it is hypothesized that personality has no direct effect on intention. However, the manner in which it indirectly effects intention is of considerable interest. The total covariation between personality and intention is represented by the correlation coefficient r_{16}. Since no direct effects are manifest this covariation is the result of two indirect paths; that from personality mediated by normative compliance (X_5) and from personality mediated by evaluative criteria (X_2), belief (X_3) and attitude (X_4). Sewall Wright defined the compound paths to be the product of the simple paths which comprise it.[101] Therefore, the indirect effect of personality on intention is given by the following measurement:

$$(P_{51}P_{65})+(P_{64}P_{43}P_{32}P_{21})$$

In this instance, the total causal effect is in indirect.

Operationalizing the Model

In order to examine the proposed theoretical structure and the role personality plays within this structure, the various constructs must be operationalized so that data can be collected. This also involves an object of study.

There are several criteria that a product class must exhibit if it is to be chosen for study. First it must be a frequently purchased product so that respondents are very familiar with it. Secondly, the product class should reflect only a single purchaser or decision-maker. This caveat has

---

[101] Ibid., p. 33.

been introduced to eliminate those products purchased as a result of a joint decision, since joint decisions would reflect an interaction of input which would obfuscate the role of the variables under examination. This criterion greatly reduces the range of products for consideration since most, if not all durables, are probably purchased on a joint basis. One other condition, while not necessary, is useful. That is a benchmark or point of comparison is needed. Since one purpose of this study is to show that the degree of relationship increases with the incorporation of the previously enumerated variables, a replication of a previously reviewed study using a different theoretical structure would be valuable.

The study chosen (and consequently the product class) is the one done by Joseph N. Fry, "Personality Variables and Cigarette Brand Choice."[102] Modification in the methodology used by Fry must be made to reflect the divergence in purpose of this study. However, certain findings from and aspects of the Fry study can and should be incorporated into this study.

One such borrowing concerns the personality class that Fry used. These include achievement, affiliation, aggression, autonomy, dominance, change, sentience, and social recognition. The source of these scales is the Jackson Personality Research Form.

---

[102]Fry, op. cit.

While the product class will stay the same, brands within that product class will change to reflect the more specific market conditions. Consequently, two wholesale distributors of cigarettes in the Mount Pleasant area were interviewed to determine the most frequently purchased brands of cigarettes. Accordingly, the following list of brands was compiled:

1. Marlboro
2. Marlboro Lights
3. Winston
4. Winston Lights
5. Salem
6. Salem Lights
7. Kool
8. Newport

These brands become the alternatives for the dependent variable, brand choice.

Finally, 200 respondents screened as smokers will be chosen from men's and women's softball leagues in the Mount Pleasant area. This will be done on a quota basis congruent with the Statistical Abstract's demographic profile of smokers so that an element of population representativeness may be preserved.

Hypotheses

Figure 1 provides a viable framework for understanding and enumerating the hypothesized relationship between and among:

1. Personality and normative compliance
2. Personality and brand choice
3. Evaluative criteria and beliefs
4. Beliefs and attitudes
5. Attitudes and intentions
6. Normative compliance and intention
7. Intention and brand choice

In addition, several linkages of a more indirect, yet complex nature are of concern. These include:

8. Brand choice as a function of personality, evaluative criteria, beliefs, attitudes and intention.
9. Brand choice as a function of personality, normative compliance, and intentions.

CHAPTER IV

SCOPE AND LIMITATIONS

The research methodology outlined in Chapter III is designed to provide a vehicle for the testing of the previously enumerated hypotheses. There are, however, certain limitations which may act to constrain the scope and results of this study. These limitations are identified and explicated below.

1. Causal modeling requires a linear, additive model such as the one outlined in this proposal. Previous research efforts regarding the constructs under scrutiny have indicated interactive relationships may prevail. If such relationships were to exist, attenuation of the extant correlations would be expected thus underestimating the magnitude of the actual relationships. While the effect of attenuation may not be corrected in this instance it can be identified and accounted for. This will be done prior to the path analytic phase of the research to examine the data for interactive relationships.

2. Extant correlations between and among certain constructs within the system may be initially small. This potential condition is indicated by the numerous studies examined in the literature review section of this thesis. If this condition prevails, intervening correlations would also be expected to be small and perhaps nonsignificant. However, within the system

being studied, statements about the relative relationships between and among the constructs may be made.

3. The model has been truncated to include only those internalized variables and has considered as exogenous other variables which may in fact contribute to the overall predictive and explanatory power. This has been done out of the necessity to limit the scope of the present research effort. It does not in any way indicate a lack of concern or recognition of the importance of those excluded variables.

4. Personality is a construct, and as such accurate measurement becomes an issue of great importance. Consequently, paper and pencil tests used a surrogate measures raises the question of whether or not the construct personality is accurately reflected in the results of the tests. A question as to whether the idea of trait and factor configurations of personality in themselves accurately represent the true construct of personality exists. This issue of validity impinges upon the research methodology and may operate to lessen the magnitude of extant relationships. For the purpose of this research however, it will be assumed that the tests are valid with respect to the aforementioned issue.

5. One condition of this research effort which may tend to lessen the applicability of the results concerns the use of only one product class as the object of inquiry. In addition, this one product class is cigarettes, typically low in price, frequently purchased and exhibiting strong brand preference potential. It is questionable as to whether the results generated by this research effort would

be applicable to other product types exhibiting marked differences in purchase characteristics.

6. The final limitation focuses on one of the paths in the Engel, Blackwell and Kollatt model which has been excerpted for study in this research effort. Specifically, it has been decided to delete from the model the path involving the construct motive. There are two reasons for doing this:

a. The first reason involves a measurement issue. The reliability and validity of the measuring devises are often of questionable degree.[103] In addition, not only is the presence or absence of the motive important but so too is the intensity of variation of the motive. As Engel, Blackwell and Kollat point out, this can be exceptionally difficult to measure.

b. A second issue concerns the need to operationalize the construct in such a way so that it can be measured. While a portion of this problem is reflected in the question of reliability and validity there still exists a semantic question as to how to operationalize and differentiate motives from personality. As Engel, Blackwell and Kollatt use the term there appears to be

---

[103]Engel, Blackwell and Kollatt, op.cit., p. 229.

> little difference between the constructs of personality and motive as evidenced by the following definitions:
>
> Motive - "Enduring predispositions that direct behavior toward attaining certain generic goals."[104]
>
> Personality - "A pattern of enduring traits, activities, interests and opinions that determine general behavior and thereby make one individual distinctive in comparison with another."[105]

It is further interesting to note that the above authors recommend using an AIO battery for the determination of the relative motives operant in a given situation and then use the same activities, interests and opinions in the definition of this construct personality. Because of this similarity and the complex measurement issues involved it has been decided to eliminate the construct motive from the model and that doing so will not seriously affect the results of the research.

---

[104] Engel, Blackwell and Kollatt, op.cit., p. 220.

[105] Engel, Blackwell and Kollatt, op.cit., p. 29.

CHAPTER V

RESEARCH RESULTS

Introduction

This chapter proceeds with an analysis of the results of the survey conducted according to the methodology presented in Chapter 3 and subject to the limitations enumerated in Chapter 4. Since the analysis is procedural in nature, a step-by-step format is employed. First, personality is examined in light of its potential as a moderator variable. Because the trait-factor approach is employed, this analysis focuses on the relationship between the different traits that comprise the personality variable and the two adjacent variables, evaluative criteria and normative compliance; second, path coefficients are generated by means of the structural equations and instrumental variables detailed in Chapter 3. Again, because of the compound nature of the personality variable, these coefficients are presented on an iterative basis producing different sets of path coefficients, each corresponding to one of the traits under scrutiny. The third step involves a test of each of the aforementioned sets of linkages that comprise the different iterations of the model. These tests are made in light of the hypothesized partial coefficients developed in Chapter 3. This offers a validation of

each iterative representation of the model subject to the caveats presented in Chapter 4.

Personality as a Moderator Variable

The model depicted in Figure 1 is a linear model. As such, it posits that relationships among variables are additive in nature. However, previous research cited in Chapter 2 indicates that personality may exert a moderating influence on other variables and ultimately on behavior. Specifically, if the personality variable is interactive in nature, then the adjacent variables of evaluative criteria and normative compliance should vary according to the level of a particular trait manifested by respondents. Even though depicting the model of brand choice behavior in a linear fashion, the authors of the model acknowledge the potential interactive relationships between and among personality and other variables. Thus, the present situation offers an excellent opportunity for analyzing and measuring the potential moderating influence of personality.

In order to detect the presence of a moderating influence for a given trait, different levels of that trait must be segmented. The previously cited studies by Brody and Cunningham and Fry dichotomized subject's responses on a given trait into its constituent high and low sub-samples.[106] This same methodology is applicable in the present study.

---

[106]See footnotes 45 and 59.

The scoring format for the Jackson Personality Research Form provides both male and female norms for each of the traits in the inventory. These norms differ by sex of the respondent and are trait specific. Consequently, the dichotomization into high and low sub-samples is effected by comparing each trait score to the norm for the respondent's sex. High sub-sample respondents then, correspond to those subjects who scored above the norm for that trait while the low sub-sample respondents scored below the norm. High and low sub-samples have been identified for each trait and their scores for that trait correlated with their respective scores for evaluative criteria and the normative compliance variable. If a moderating influence is operant, correlations between high and low sub-samples for a given trait and the evaluative criteria variable should differ. This same relationship should also prevail between the personality trait and the normative compliance variable.

Tables 3 through 10 on the following pages present the conditional correlations for each of the eight traits and the six evaluative criteria. These tables are broken down by sex to account for the differing norms. The evaluative criteria (A_1 to A_6) are listed in the far left column. The conditional correlations are arrayed under the low and high columns. The fourth column, labeled "Difference," indicates whether a difference exists between the two subgroups. This difference was examined by using Fisher's

Z-transformation of r.[107] The hypothesis in each case is:

$$H_0: P_1 = P_2$$

and the test statistic is:

$$Z = \frac{Z_{r1} - Z_{r2}}{\sqrt{1/n_{1-3} + 1/n_{2-3}}}$$

An alpha of .05 was the criterion in each of the cases.

Examination of Tables 3 to 10 reveal that only five significant differences exist between high and low subgroups. Male respondents manifesting a high score on the trait of achievement differed significantly from their low counterparts with respect to the second criterion, low tar and nicotine content. No female differences were detected. In Table 4 a single difference was detected, again among the male respondents. The conditional correlations between the trait of affiliation and the evaluative criterion, distinctive flavor differed significantly. Analysis of the female group was not possible since all respondents scored below the norm on the trait of affiliation. Tables 5, 6, and 7 showing the differences between the evaluative criteria and the traits of aggression, autonomy, and change respectively, indicate no significant differences exist. Table 8 contains two significant differences within the male group. Men exhibiting high and low scores for the trait of dominance evaluated the criterion of a full rich taste and strong smoke differently. With respect to the trait of sentience,

---

[107] Gene V. Glass and Julian C. Stanley, Statistical Methods in Education and Psychology, Prentice Hall, Inc., New Jersey, 1970, p. 311.

TABLE 3

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF ACHIEVEMENT (LOW AND HIGH SUBGROUPS) AND EVALUATIVE CRITERIA

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
A_1	-.0712[b]	.1053[b]	No	.1848[b]	.2635	No
A_2	-.4898	-.0367[b]	Yes	.0521[b]	.0729[b]	No
A_3	.0683[b]	.2083	No	-.1844[b]	.1449[b]	No
A_4	.1120[b]	.2258	No	.1601[b]	-.0163[b]	No
A_5	.2759[b]	.0035[b]	No	-.0159[b]	-.0705[b]	No
A_6	-.1461[b]	-.0272[b]	No	.0975[b]	-.1082[b]	No
d_f	29	66		41	50	

a indicates a significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

A_1 = Distinctive Flavor

A_2 = Low Tar and Nicotine Content

A_3 = Full Rich Taste

A_4 = Strong Smoke

A_5 = Draws Easily

A_6 = Projects a Mature Image

TABLE 4

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF AFFILIATION (LOW AND HIGH SUBGROUPS) AND EVALUATIVE CRITERIA

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
A_1	.1568	-.7500	Yes	.0143[b]	---	---
A_2	.0610[b]	-.0278[b]	No	-.1686	---	---
A_3	.2785	-.2402[b]	No	.1576[b]	---	---
A_4	-.0184[b]	.0248[b]	No	.0633[b]	---	---
A_5	.1355[b]	.0940[b]	No	-.1002[b]	---	---
A_6	.2637	-.2764[b]	No	.0651[b]	---	---
d_f	91	4		91		

a indicates a significant difference ($p < .05$)

b analysis was not possible because of lack of respondents.

A_1 = Distinctive Flavor

A_2 = Low Tar and Nicotine Content

A_3 = Full Rich Taste

A_4 = Strong Smoke

A_5 = Draws Easily

A_6 = Projects a Mature Image

TABLE 5

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF AGGRESSION (LOW AND HIGH SUBGROUPS) AND EVALUATIVE CRITERIA

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
A_1	-.0080[b]	-.0485[b]	No	-.0619[b]	-.3090	No
A_2	-.1759[b]	.1008[b]	No	.2184[b]	-.1478[b]	No
A_3	-.0293[b]	-.2203	No	.1425[b]	-.1674[b]	No
A_4	.0319[b]	-.1108[b]	No	-.0931[b]	.0379[b]	No
A_5	-.1301[b]	.1193[b]	No	.0432[b]	.0172[b]	No
A_6	.1661[b]	.4015	No	.1725[b]	-.1408[b]	No
d_f	44	51		42	49	

a indicates a significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

A_1 = Distinctive Flavor

A_2 = Low Tar and Nicotine Content

A_3 = Full Rich Taste

A_4 = Strong Smoke

A_5 = Draws Easily

A_6 = Projects a Mature Image

TABLE 6

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF AUTONOMY (LOW AND HIGH SUBGOUPS) AND EVALUATIVE CRITERIA

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
A_1	.1291[b]	-.1204[b]	No	.1252[b]	.2584	No
A_2	.3166[b]	.0652[b]	No	.4690	.1292[b]	No
A_3	.3750[b]	-.0255[b]	No	-.2478[b]	.1491[b]	No
A_4	.1562[b]	-.2071	No	-.1497[b]	-.0807[b]	No
A_5	.2722[b]	-.1476[b]	No	-.2199[b]	.0318[b]	No
A_6	.3522[b]	.0075[b]	No	.0579[b]	.0544[b]	No
d_f	7	88		14	77	

a indicates a significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

A_1 = Distinctive Flavor

A_2 = Low Tar and Nicotine Content

A_3 = Full Rich Taste

A_4 = Strong Smoke

A_5 = Draws Easily

A_6 = Projects a Mature Image

TABLE 7

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF CHANGE (LOW AND HIGH SUBGROUPS) AND EVALUATIVE CRITERIA

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
A_1	-.1950[b]	-.1753[b]	No	.2029[b]	.0812[b]	No
A_2	-.2735	.0617[b]	No	.0804[b]	-.0145[b]	No
A_3	-.0999[b]	-.0413[b]	No	.0305[b]	.0282[b]	No
A_4	.1094[b]	-.0594[b]	No	-.0933[b]	-.2589	No
A_5	-.2759	.0978[b]	No	-.1044[b]	.0455[b]	No
A_6	-.0121[b]	.0514[b]	No	.0523[b]	.0802[b]	No
d_f	43	52		49	42	

a indicates a significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

A_1 = Distinctive Flavor

A_2 = Low Tar and Nicotine Content

A_3 = Full Rich Taste

A_4 = Strong Smoke

A_5 = Draws Easily

A_6 = Projects a Mature Image

TABLE 8

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF DOMINANCE (LOW AND HIGH SUBGROUPS) AND EVALUATIVE CRITERIA

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
A_1	-.2240[b]	.0942[b]	No	.2593	.1196[b]	No
A_2	.3521	.1799[b]	No	-.1045[b]	.0036[b]	No
A_3	-.4588	.1105[b]	Yes	.1258[b]	.3228	No
A_4	-.2024[b]	.2411	Yes	.0818[b]	.0097[b]	No
A_5	.0144[b]	.0362[b]	No	.0925[b]	.0980[b]	No
A_6	-.0070[b]	-.1871[b]	No	.1161[b]	.0559[b]	No
d_f	36	59		41	50	

a indicates a significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

A_1 = Distinctive Flavor

A_2 = Low Tar and Nicotine Content

A_3 = Full Rich Taste

A_4 = Strong Smoke

A_5 = Draws Easily

A_6 = Projects a Mature Image

TABLE 9

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF SENTIENCE (LOW AND HIGH SUBGROUPS) AND EVALUATIVE CRITERIA

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
A_1	-.0594[b]	-.1817[b]	No	.2809	-.0866[b]	No
A_2	-.2885	-.0743[b]	No	-.0237[b]	.2608	No
A_3	.0954[b]	.0561[b]	No	.0896[b]	-.0696[b]	No
A_4	.2463	.0487[b]	No	.0037[b]	-.1297[b]	No
A_5	-.2822	-.0495[b]	No	-.2092[b]	.0412[b]	No
A_6	-.2488	-.1250[b]	No	-.2553	.1598[b]	Yes
d_f	46	49		52	39	

a indicates a significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

A_1 = Distinctive Flavor

A_2 = Low Tar and Nicotine Content

A_3 = Full Rich Taste

A_4 = Strong Smoke

A_5 = Draws Easily

A_6 = Projects a Mature Image

TABLE 10

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF SOCIAL RECOGNITION (LOW AND HIGH SUBGROUPS) AND EVALUATIVE CRITERIA

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
A_1	-.1908	.2705[b]	No	-.1529[b]	-.1873[b]	No
A_2	.2350	.0147[b]	No	.1120[b]	.0205[b]	No
A_3	-.1523[b]	-.1608[b]	No	.0059[b]	.1102[b]	No
A_4	.1740[b]	.2851[b]	No	.0586[b]	-.1897[b]	No
A_5	-.0778	.2169[b]	No	-.1238[b]	-.0914[b]	No
A_6	.0722	-.2390[b]	No	.2848	.0430[b]	No
d_f	72	23		62	29	

a indicates a significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

A_1 = Distinctive Flavor

A_2 = Low Tar and Nicotine Content

A_3 = Full Rich Taste

A_4 = Strong Smoke

A_5 = Draws Easily

A_6 = Projects a Mature Image

a difference within the female group was detected. This occured on criterion six, projects a mature image. Finally, Table 10 reveals no difference between high and low group scores on the trait of social recognition and the six evaluative criteria.

While differences between levels of traits and evaluative criteria do exist, they are few in number and isolated. Of the five differences that do exist, only one was found in the female group with the remaining four in the male group. In total, ninety-six comparisons were made at the .05 level of significance. The number of differences found are within the elected level of risk and are to be expected to result by chance alone. Consequently, it is safe to conclude that no moderating effect of personality has been detected in this instance.

The same conclusion is forthcoming with respect to the relationship between the individual personality traits and the normative compliance variable. Tables 11 to 18 on the following pages present the results of this analysis conducted in a similar fashion to the preceeding one. The only difference appears in the male group between respondents manifesting high and low scores on the trait of social recognition and their responses to the normative compliance variable (Table 18). Again, this is within the tolerable limit of error elected for this analysis and is expected to occur by chance.

TABLE 11

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF ACHIEVEMENT (LOW AND HIGH SUBGROUPS) AND NORMATIVE COMPLIANCE

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
NC	.2932	.0038[b]	No	.0196[b]	.0102[b]	No
d_f	29	66		39	52	

a indicates significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

TABLE 12

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF AFFILIATION (LOW AND HIGH SUBGROUPS) AND NORMATIVE COMPLIANCE

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
NC	-.1594	.1612[b]	No	.0788[b]	--	--
d_f	91	4		91		

a indicates a significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

TABLE 13

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF AGGRESSION (LOW AND HIGH SUBGROUPS) AND NORMATIVE COMPLIANCE

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
NC	-.0577[b]	-.4072	No	.1650[b]	-.0869[b]	No
d_f	44	51		42	49	

a indicates a significant difference ($p < .05$)

b indicates a nonsignificant correlation($p < .05$)

TABLE 14

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF AUTONOMY (LOW AND HIGH SUBGROUPS) AND NORMATIVE COMPLIANCE

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
NC	-.2264[b]	-.0878[b]	No	-.0068[b]	-.2360	No
d_f	7	88		14	77	

a indicates significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

TABLE 15

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF CHANGE (LOW AND HIGH SUBGROUPS) AND NORMATIVE COMPLIANCE

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
NC	-.2561	-.0658[b]	No	-.2067	-.1911	No
d_f	43	52		49	42	

a indicates significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

TABLE 16

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF DOMINANCE (LOW AND HIGH SUBGROUPS) AND NORMATIVE COMPLIANCE

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
NC	-.0266[b]	-.1797	No	.0301[b]	-.3531	No
d_f	36	59		41	50	

a indicates a significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

TABLE 17

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF SENTIENCE (LOW AND HIGH SUBGROUPS) AND NORMATIVE COMPLIANCE

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
NC	.1714[b]	.1529[b]	No	-.1160[b]	-.0387[b]	No
d_f	46	49		52	39	

a indicates a significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

TABLE 18

CONDITIONAL CORRELATIONS BETWEEN THE TRAIT OF SOCIAL RECOGNITION (LOW AND HIGH SUBGROUPS) AND NORMATIVE COMPLIANCE

	MALE			FEMALE		
	Low	High	Difference[a]	Low	High	Difference[a]
NC	-.3043	.1990[b]	Yes	-.0909[b]	.2750	No
d_f	72	23		62	29	

a indicates a significant difference ($p < .05$)

b indicates a nonsignificant correlation ($p < .05$)

As was stated, in this particular instance personality does not exert any significant moderating influence on either the evaluative criteria variable or the normative compliance variable. This may be a function of the specific traits used in this study. It is conceivable that other traits could moderate reactions to these variables. However, in this case, the model as linearly specified does hold and the analysis continues accordingly with an examination of the path coefficients forming the linkages between the various variables.

Generation of Path Coefficients

The portion of the Engel, Blackwell and Kollat model used in this analysis contains variables of a multidimensional nature. For example, personality, as specified in the model, is a single variable. However, in order to quantify this variable it is necessary to utilize a trait-factor approach which yields, in this case, eight separate variables. In a similar fashion, the evaluative criteria variable is comprised of six different criterion. The belief component has the most constituent parts. For every evaluative criterion eight brand-specific belief statements exist. Similarly, the attitude and intention variables are also brand specific, thus accounting for eight more variables respectively.

This large number of variables results from the necessity of operationalizing the relatively global and multidimensional constructs and produces an extremely large

number of separate path analyses that may be generated.

For the sake of parsimony and comprehension, the following format is adopted in reporting the results of the analysis. Since the personality variable is the locus of concern in this study and since it forms the initial linkages in the model, only those combinations producing significant relationships between personality and evaluative criteria and personality and normative compliance are reported. The basic screening mechanism is the correlation matrix arraying these variables shown in Table 19 on the following page. It will be recalled from Chapter III that the structural equations depicting the linkages between personality and evaluative criteria and personality and normative compliance were $r_{12} = P_{21}$ and $r_{15} = P_{51}$ respectively. In these two cases, the simple bivariate correlation equals the path coefficient. Therefore, if these initial path coefficients are not significant, the model as specified and subject to the constraints of this study, does not hold. Only those iterations of the model with significant initial linkages are reported. All remaining correlation matrices are appended to this study and appear in Appendix C.

By examing Table 19 it can be seen that only three traits significantly correlate with the individual evaluative criteria and the normative compliance variable ($p < .01$). Aggression is significantly correlated with A_6 (projects a mature image), change with A_1, A_2, and A_5 (distinctive flavor, low tar and nicotine content, and draws easily) and

TABLE 19

CORRELATION MATRIX FOR PERSONALITY TRAITS, EVALUATIVE CRITERIA, AND NORMATIVE COMPLIANCE[a]

	AC	AF	AG	AU	CH	DO	SE	SR
A_1	.1083	-.0314	-.0813	.0809	.1064	.0601	.0843	-.0199
	S=.064	S=.330	S=.128	S=.129	S=.068	S=.200	S=.119	S=.391
A_2	-.1456	.2052	-.0743	-.1158	-.1165	.0184	-.0772	.0631
	S=.020	S=.002	S=.149	S=.052	S=.051	S=.398	S=.140	S=.189
A_3	.1229	-.1164	-.0363	.2420	.0150	.1128	.0982	-.0760
	S=.042	S=.051	S=.306	S=.001	S=.417	S=.057	S=.084	S=.144
A_4	.1351	-.1463	.0625	.0551	-.0153	.1799	.0039	.0714
	S=.029	S=.020	S=.191	S=.220	S=.415	S=.006	S=.478	S=.159
A_5	-.0517	-.1042	.0735	.0043	-.1466	.0221	-.1285	-.1194
	S=.235	S=.072	S=.152	S=.476	S=.020	S=.378	S=.036	S=.049
A_6	-.1520	-.1065	-.1274	.1020	.0783	.0067	-.1119	-.0068
	S=.016	S=.068	S=.037	S=.076	S=.136	S=.463	S=.058	S=.462
NC	.0010	-.0696	-.3009	-.0587	-.1800	-.1363	-.0067	-.0302
	S=.494	S=.165	S=.001	S=.206	S=.006	S=.028	S=.463	S=.336

[a]n=198 in all correlations.

dominance with A_3 and A_4 (full rich taste and strong smoke). All other combination of traits, evaluative criteria and normative compliance are nonsignificant at $p < .01$ and as such are eliminated from further analysis.

This points out a recurring problem in personality research. While many nonsignificant and insignificant relationships have been reported between individual traits and behavior, it was hypothesized that when incorporated into a model linking personality with more theoretically proximate variables, these relationships would be stronger. That is not the case. That only three of the eight traits prove to be significant at this initial point indicates several shortcomings of utilizing personality as a variable in explaining behavior.

First, there is a problem accentuated by the necessity of quantifying this variable. Since the trait-factor method focuses on individual traits, which traits should be included? This appears to be a process which is heuristic in nature. In the present case, of the eight traits chosen, only three were found to be significant.

Second, and a related problem, how many traits compose an individual's personality? As was pointed out, some inventories measure up to fifty traits. It is safe to assume that not all traits will come into play in all decisions. Then a question of situation-specific weighting occurs. Under what circumstances will the trait of dominance be evoked? Again, this most likely varies from individual to individual.

Third, as has been pointed out by many critics of personality research, questions of measurement arise. Are researchers really measuring personality? The external validity of personality instruments is a problem of great proportion.

The analysis now switches from a focus of which traits are influential to one of the manner and degree of influence exerted by these significant personality traits. This can best be answered by generating path coefficients for those iterations of the model which are significant.

Again, because of the multidimensional nature of the various constructs in the model, no single representation of the choice decision is possible. Consequently, each iteration is diagrammed and shown in path analytic form. Figures 3 to 17 represent these 15 individual path analyses.

The variables contained within the circles with the solid arrows connecting the circles represent the direction of the theoretical causal linkages. Path coefficients appear adjacent to these linkages. In addition, residual path coefficients are shown, which if squared, indicate the amount of variance left unexplained by the variables which impact them. The dotted arrowed line represents a linkage between personality and brand choice. While not a part of the formal theoretical structure of the model, it is included as a basis of comparison. This enables a comparison of personality as a sole indicant of brand choice and personality as an indirect influence. For the sake of comparison and convenience,

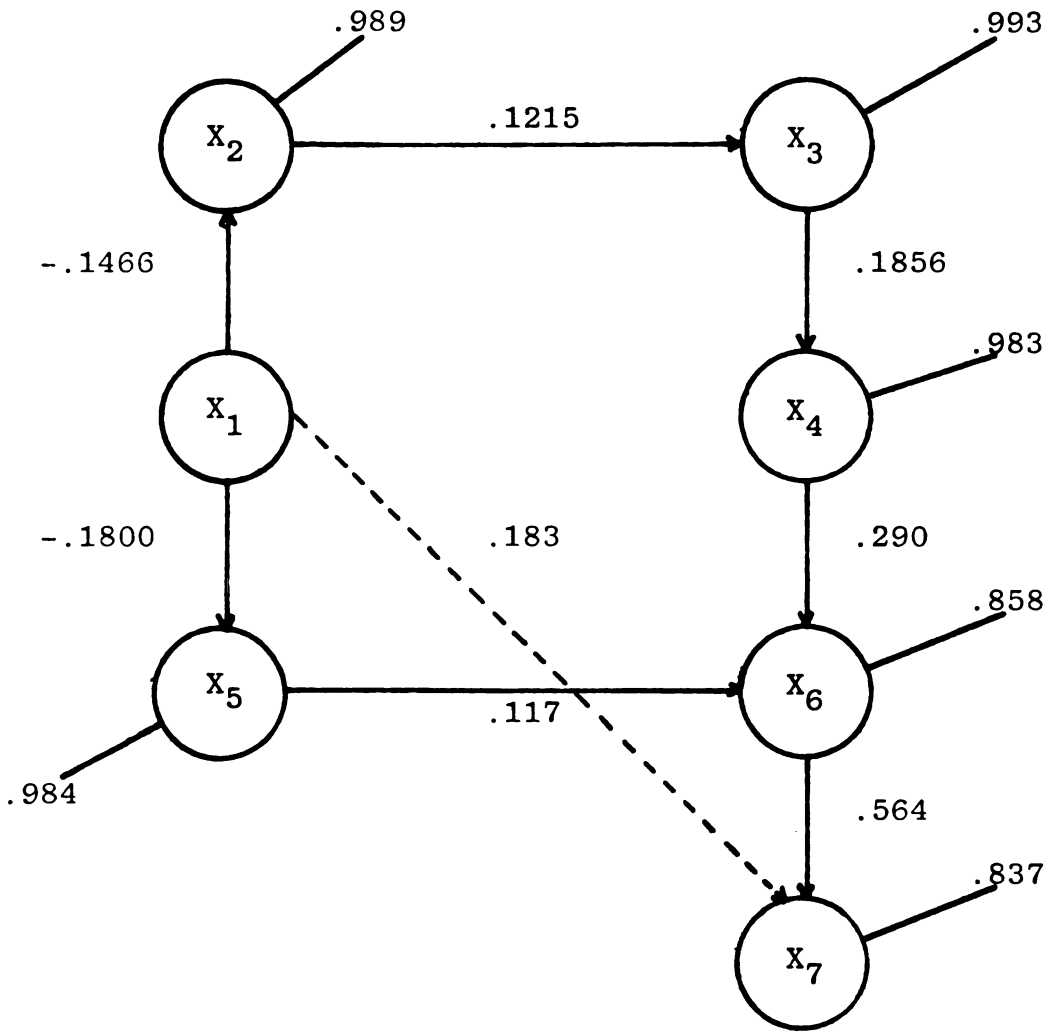

Figure 3-Path Diagram

(Change, Draws Easily, Marlboro)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

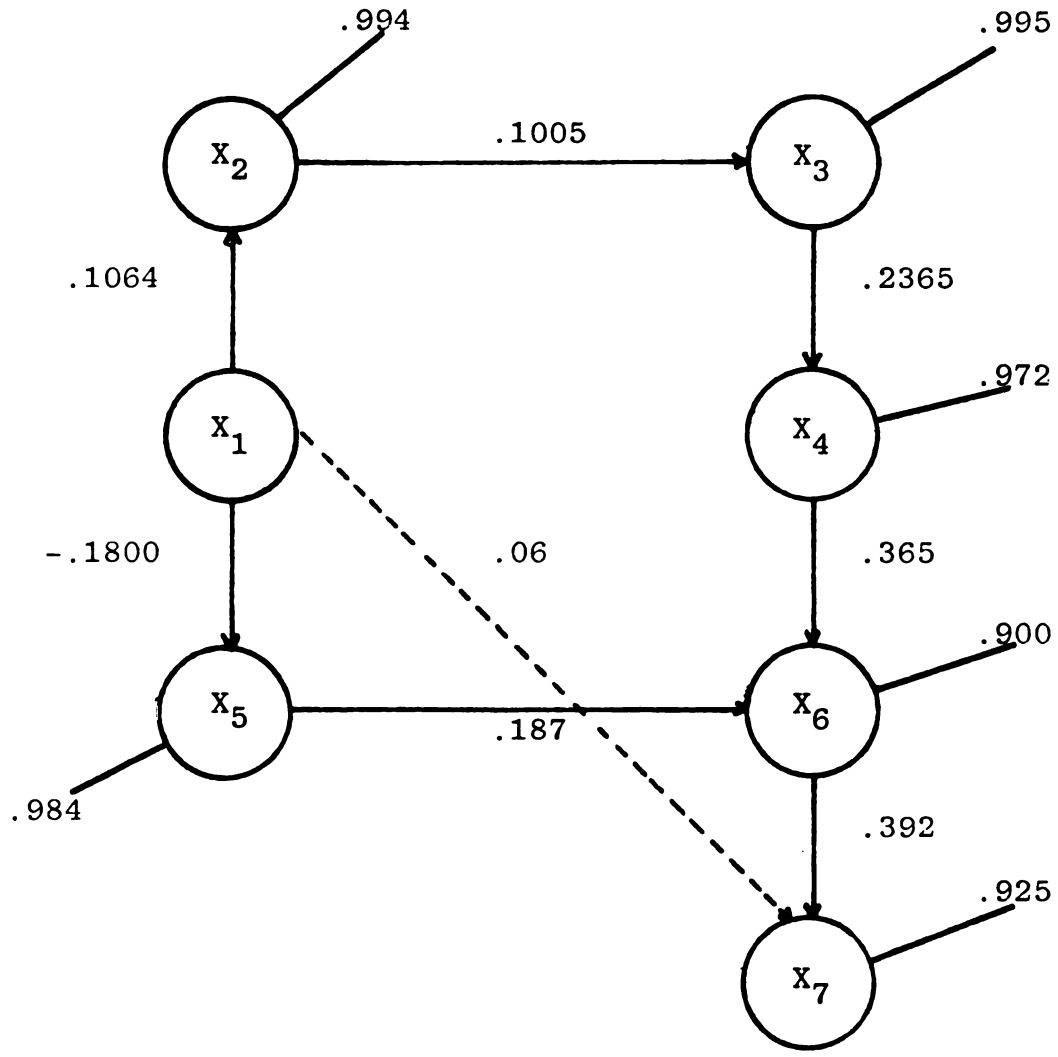

Figure 4 Path Diagram

(Change, Distinctive Flavor, Marlboro Lights)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

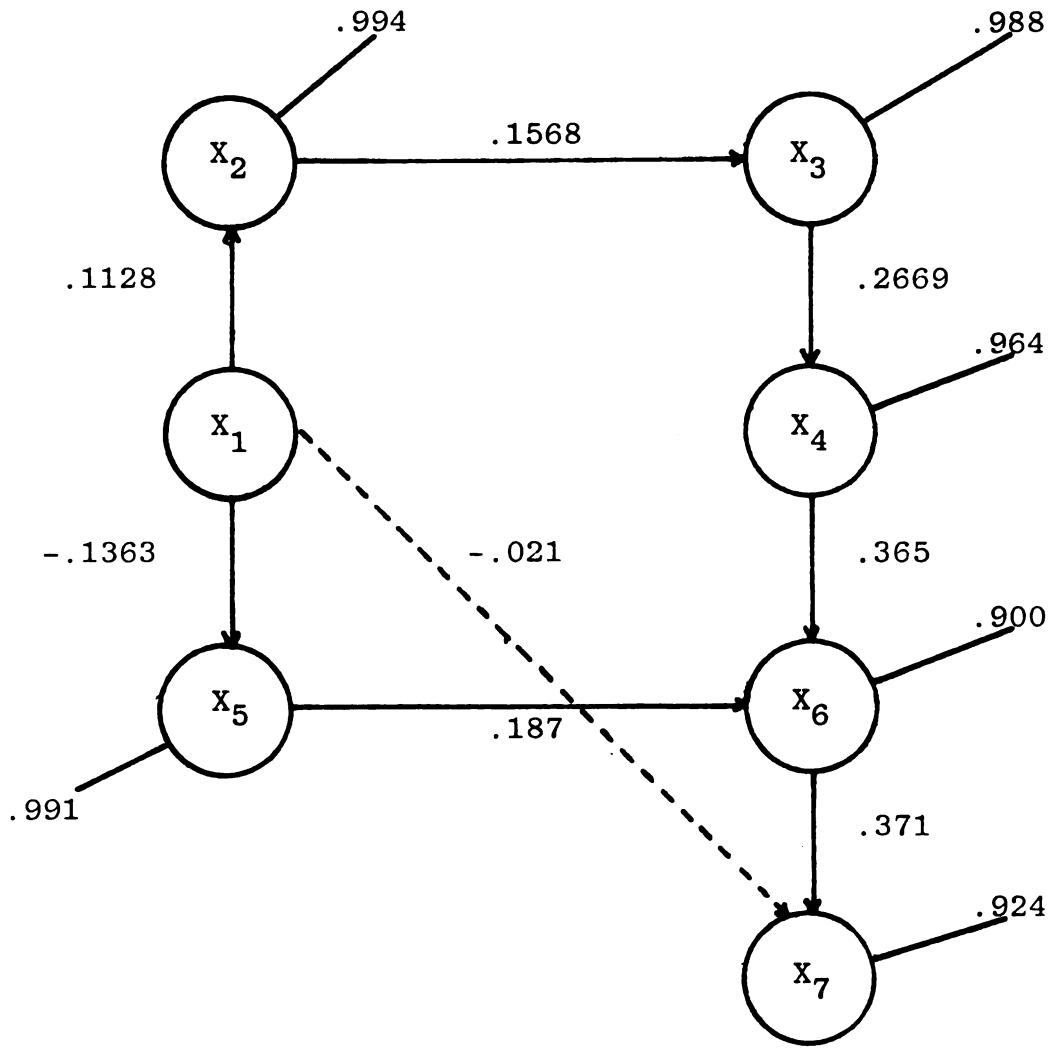

Figure 5 Path Diagram

(Dominance, Full Rich Taste, Marlboro Lights)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

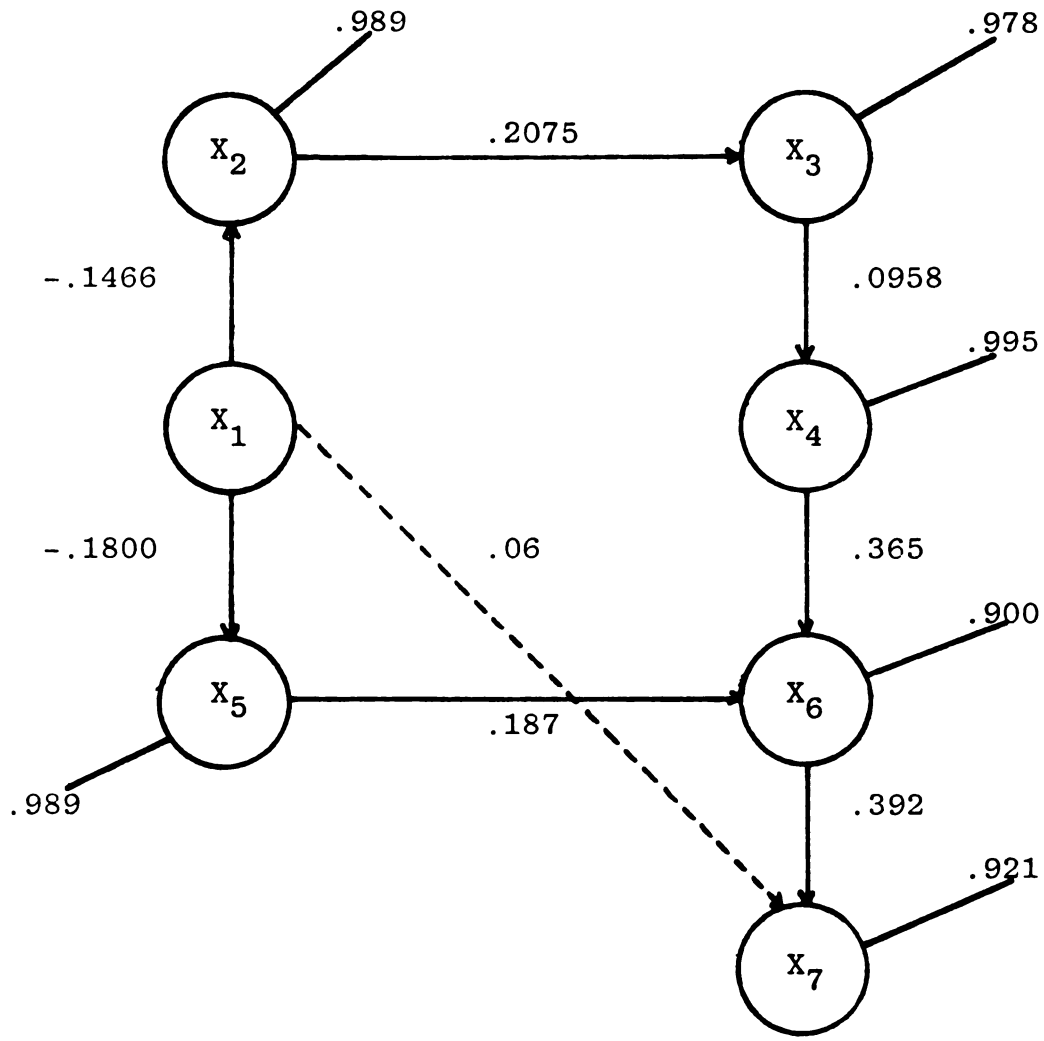

Figure 6 Path Diagram

(Change, Draws Easily, Marlboro Lights)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

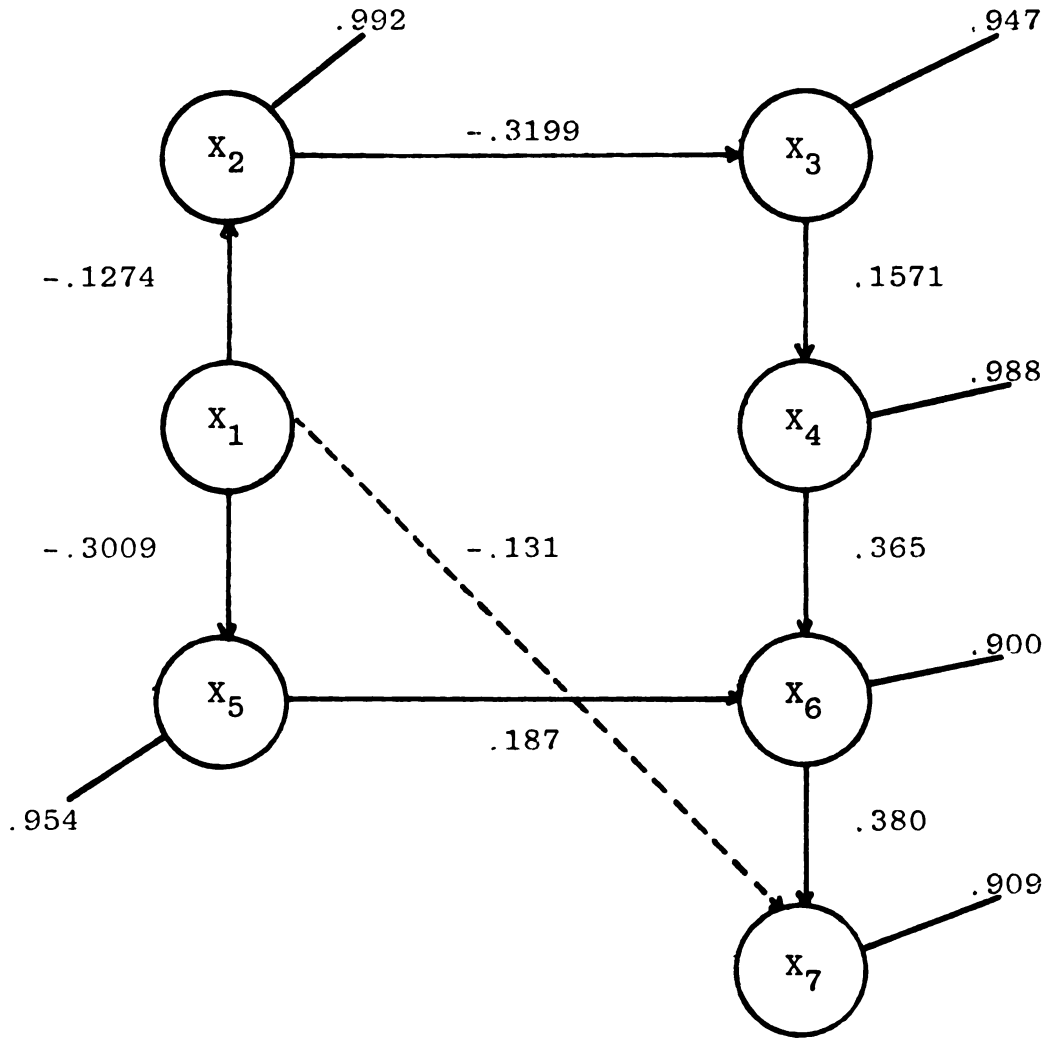

Figure 7 Path Diagram

(Agression, Projects a Mature Image, Marlboro Lights)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

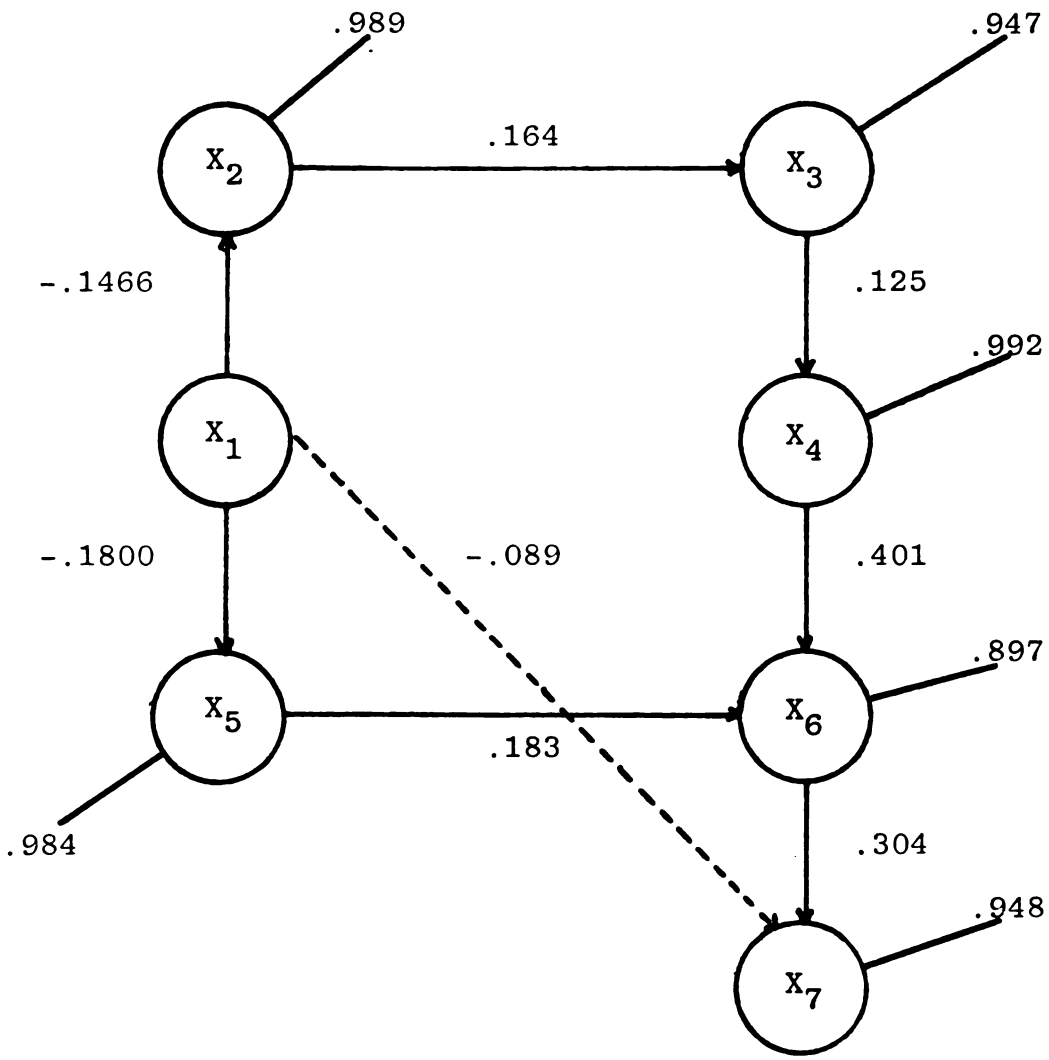

Figure 8 Path Diagram

(Change, Draws Easily, Winston)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

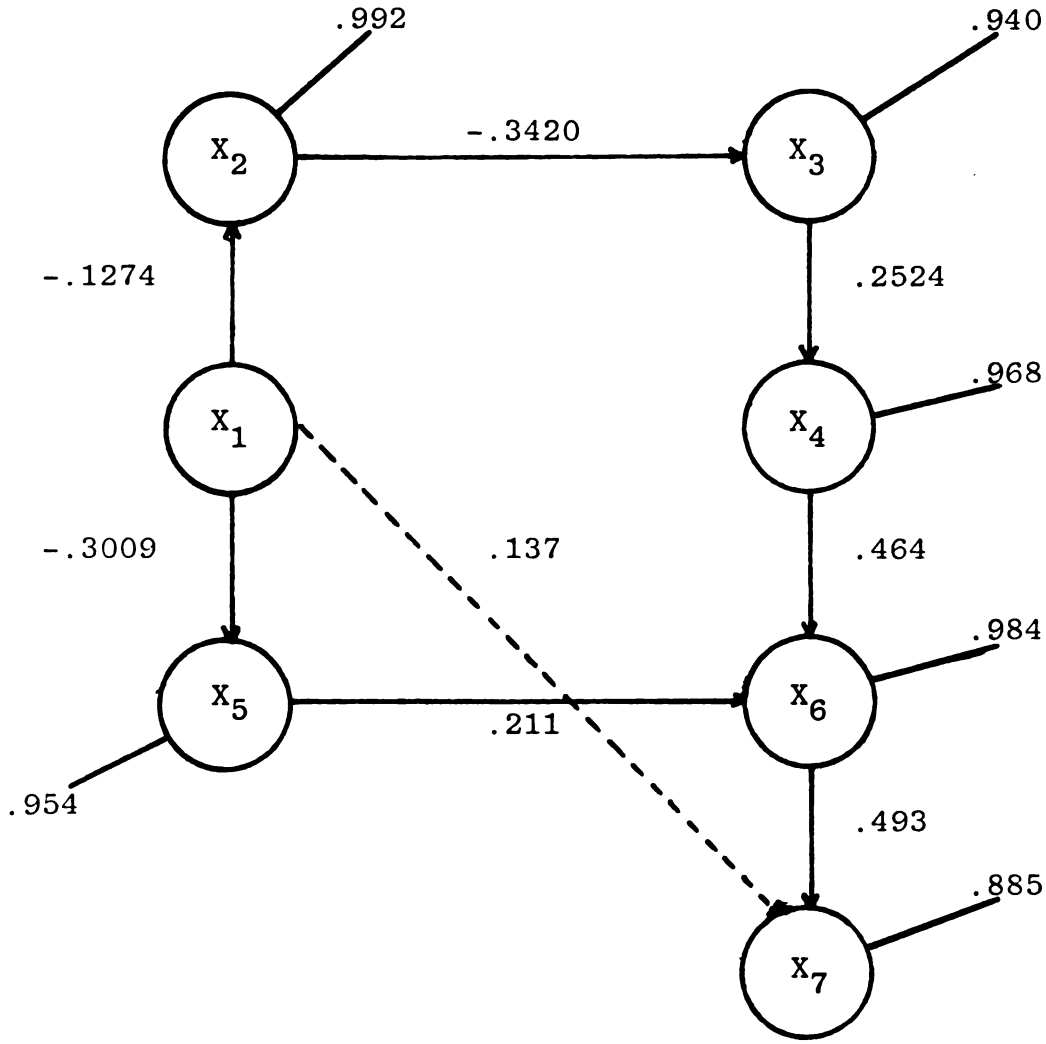

Figure 9 Path Diagram

(Agression, Projects a Mature Image, Winston Lights)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

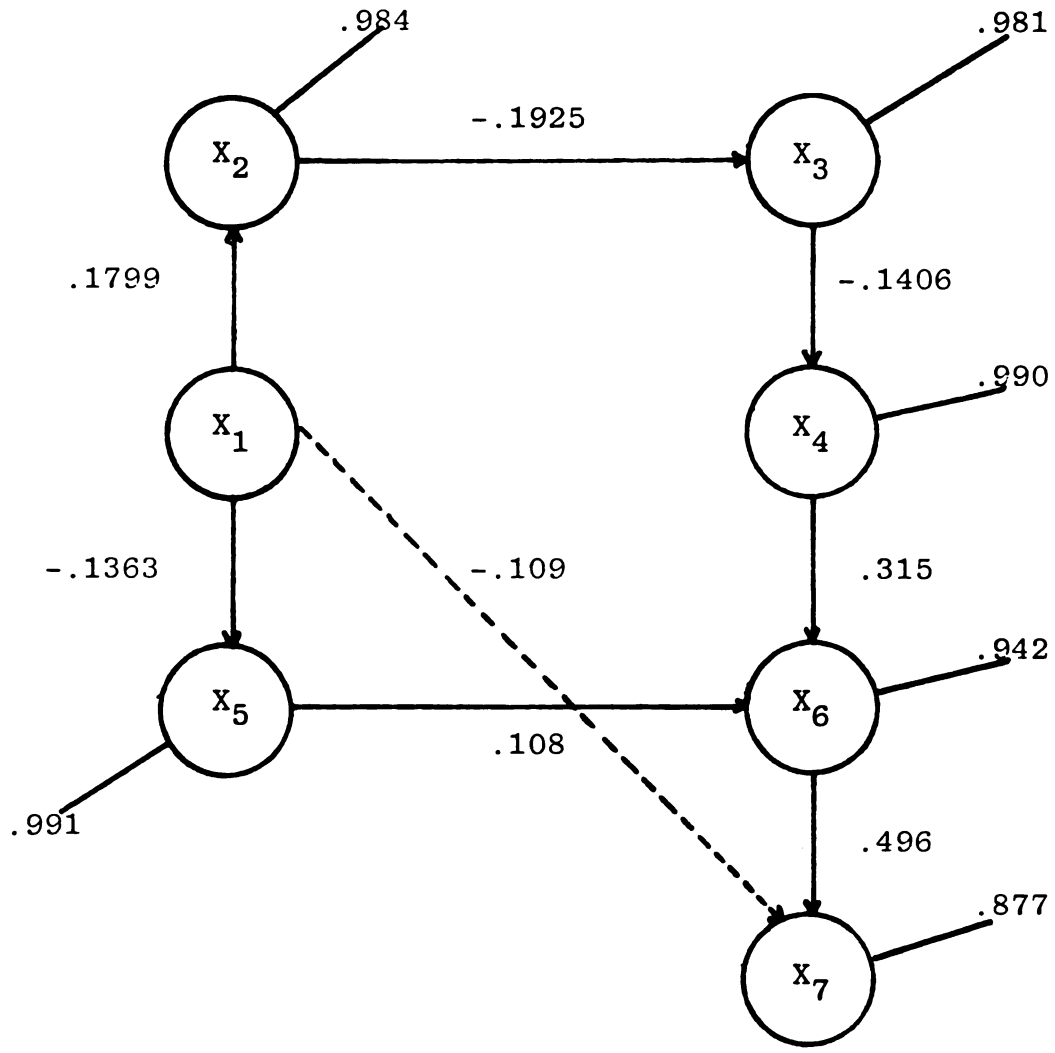

Figure 10 Path Diagram

(Dominance, Strong Smoke, Salem Lights)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

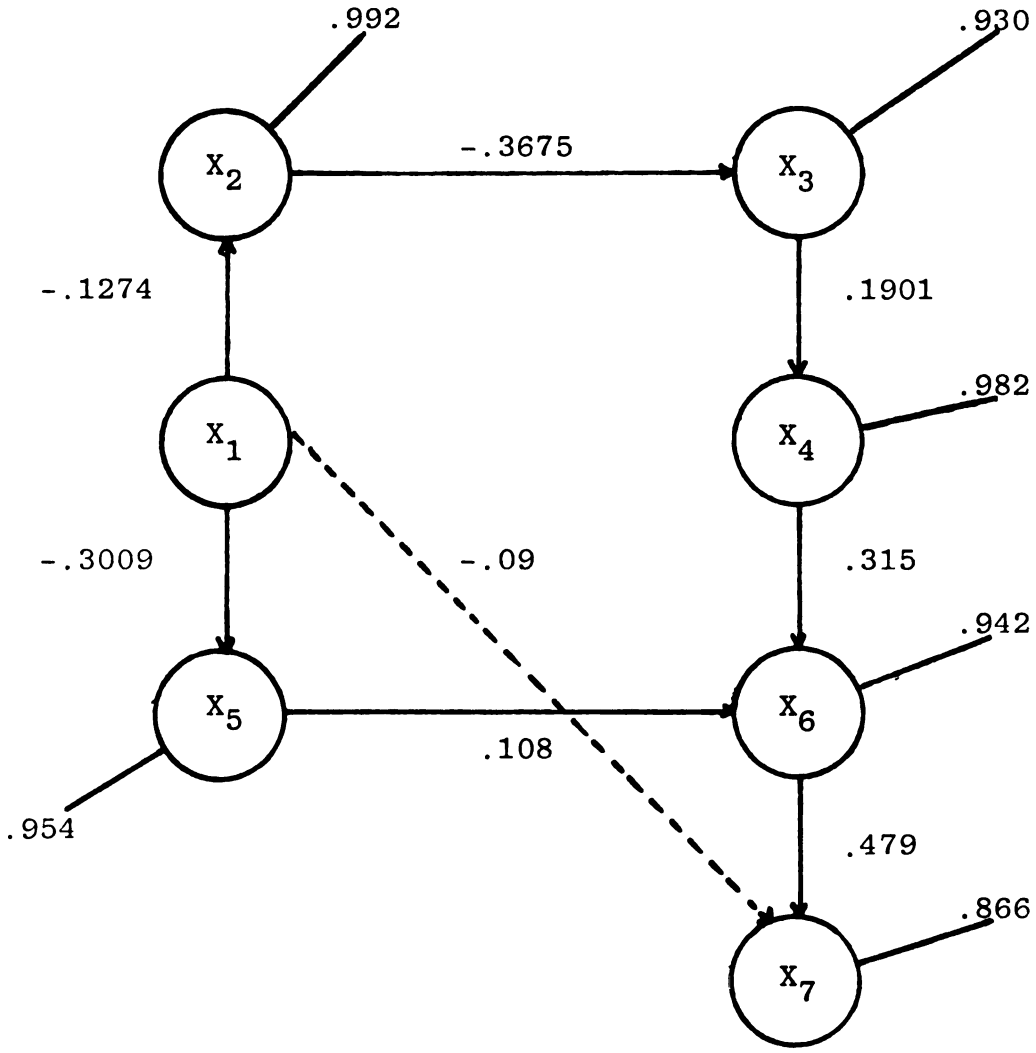

Figure 11 Path Diagram

(Aggression, Projects a Mature Image, Salem Lights)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

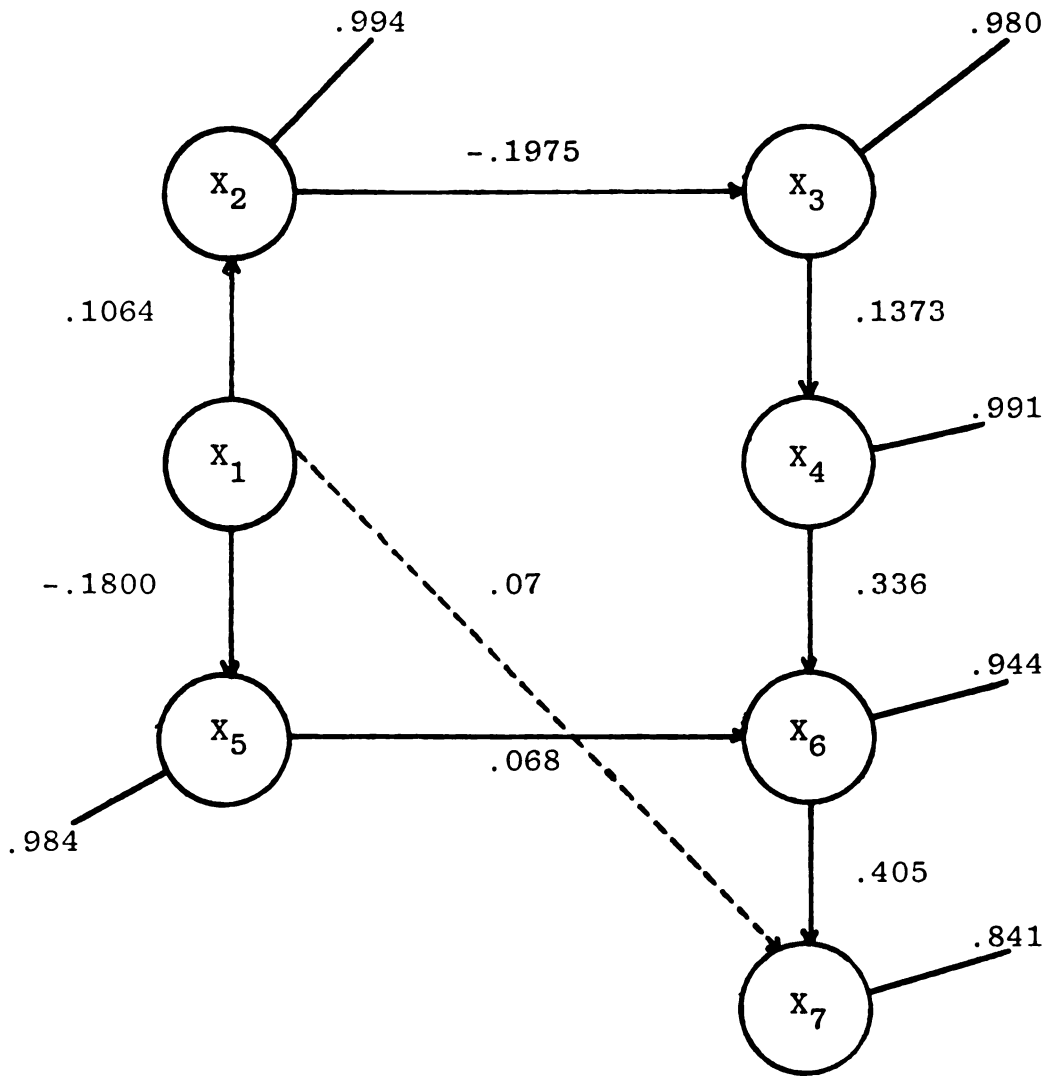

Figure 12 Path Diagram

(Change, Distinctive Flavor, Kool)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

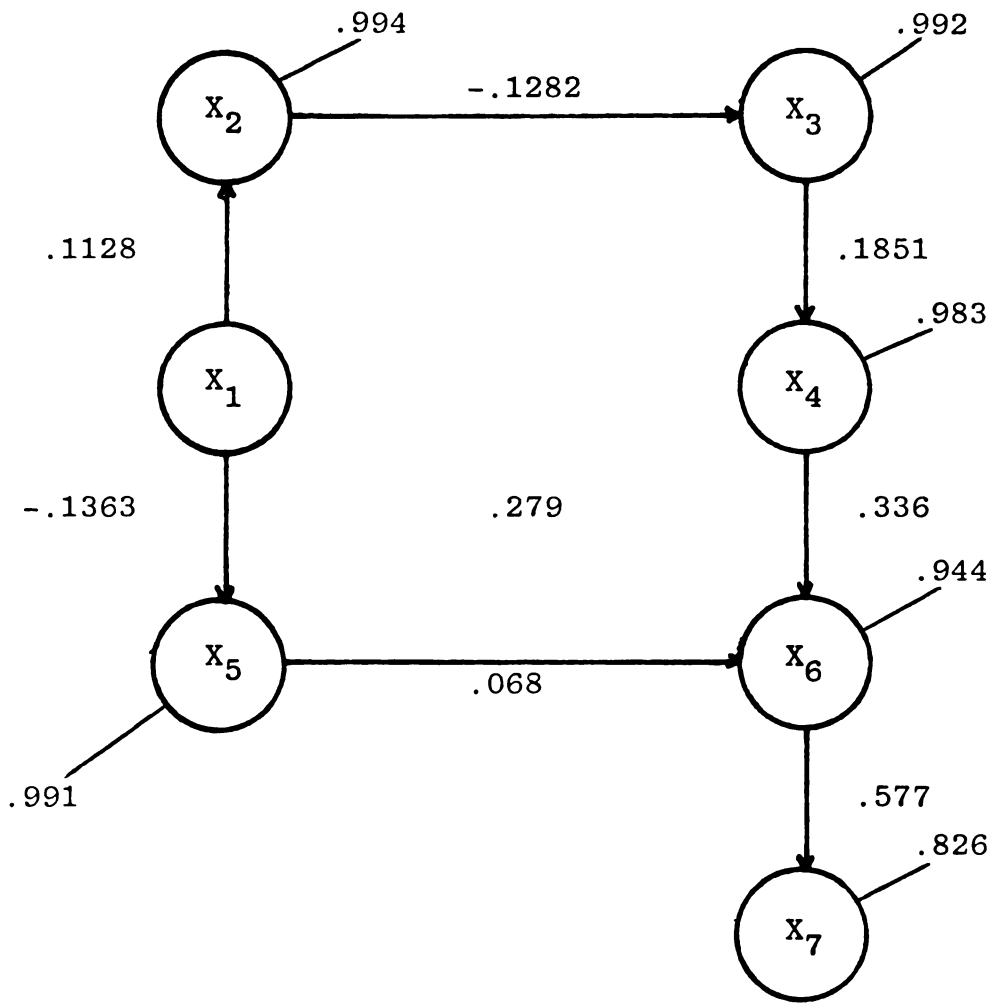

Figure 13 Path Diagram

(Dominance, Full Rich Taste, Kool)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

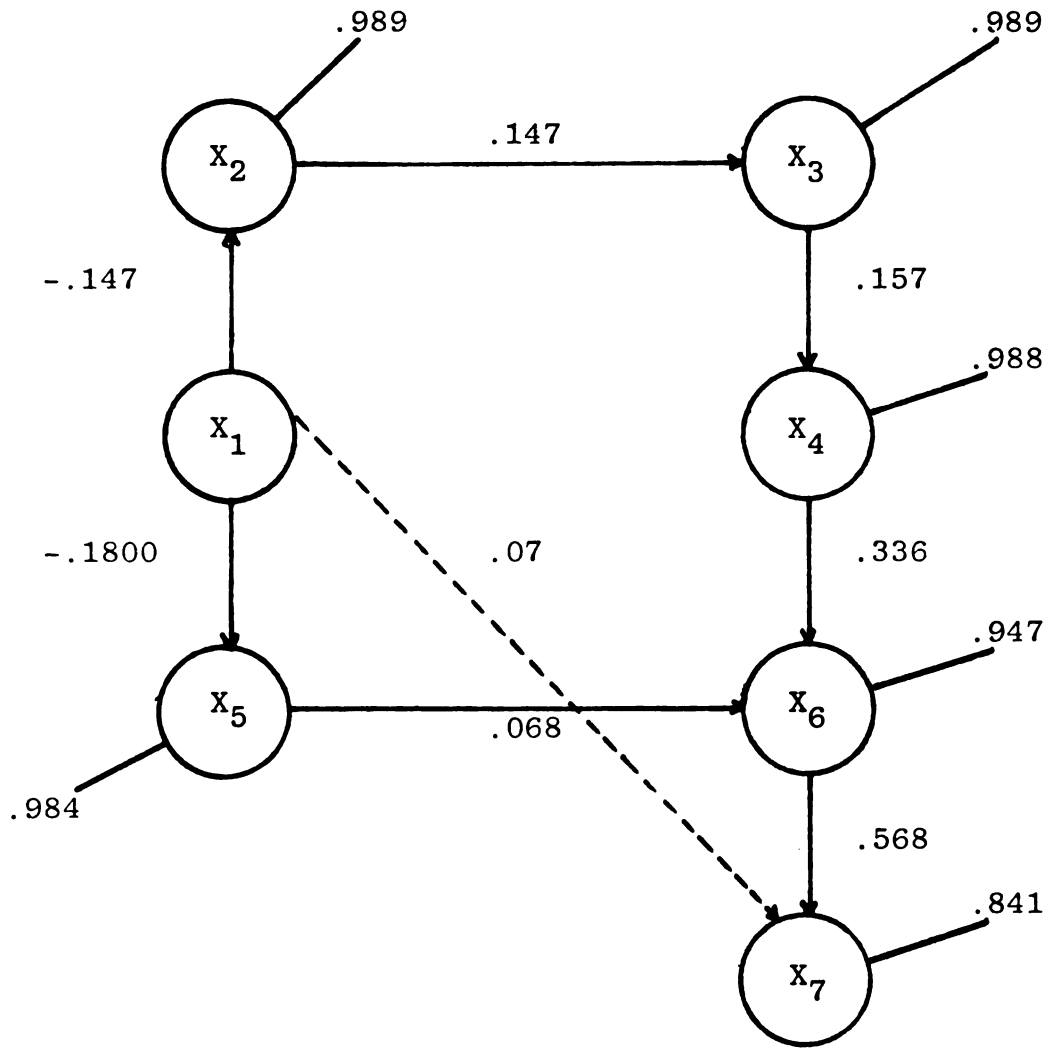

Figure 14 Path Diagram

(Change, Draws Easily, Kool)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

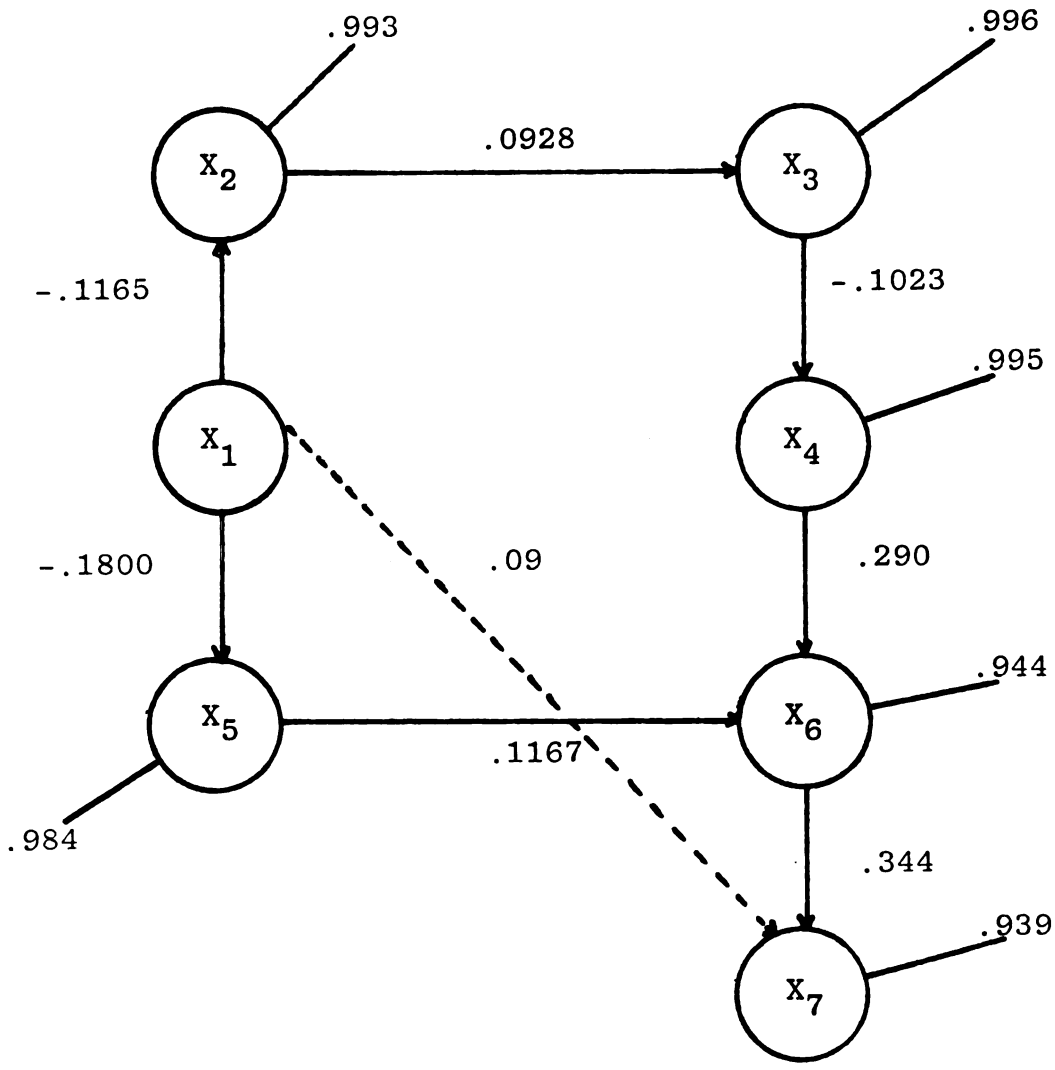

Figure 15 Path Diagram

(Change, Low Tar and Nicotine Content, Newports)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

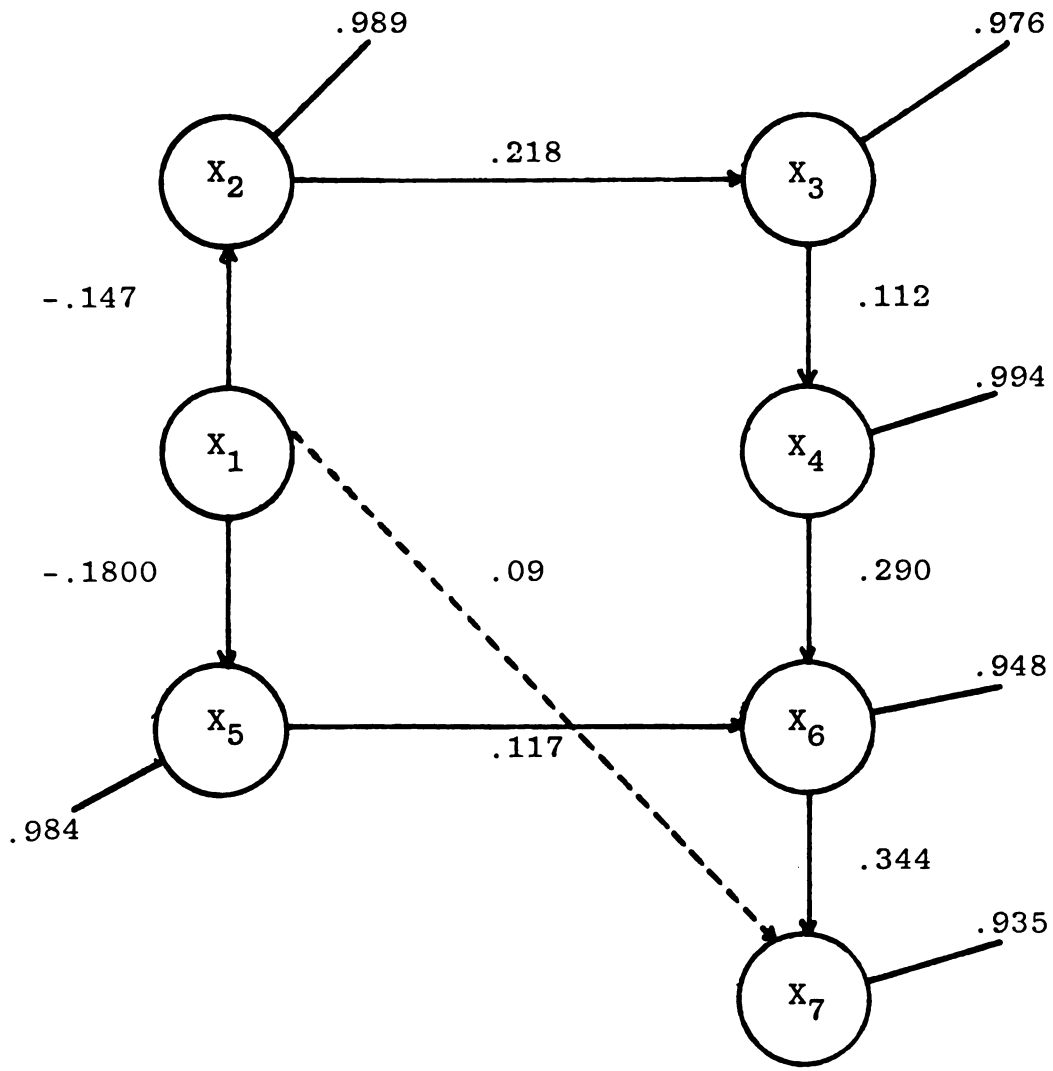

Figure 16 Path Diagram

(Change, Draws Easily, Newport)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

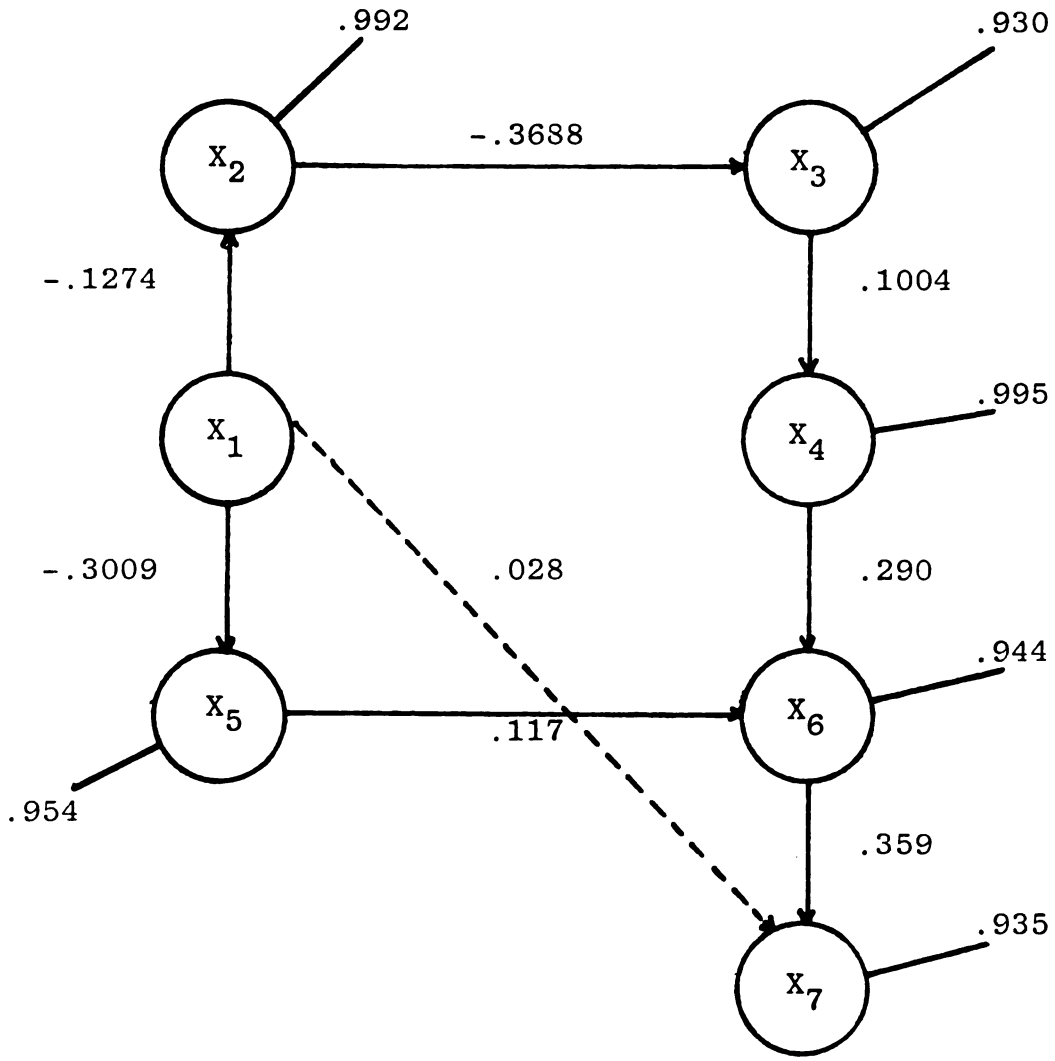

Figure 17 Path Diagram

(Aggression, Projects a Mature Image, Newport)

X_1 = Personality

X_2 = Evaluative Criteria

X_3 = Beliefs

X_4 = Attitudes

X_5 = Normative Compliance

X_6 = Intentions

X_7 = Brand Choice

these path diagrams are incorporated into tabular form and presented in Table 20 on page 119. The only brand not represented in this analysis is Salem. This occurred because of the lack of significant relationship(s) between one or more of the variables.

According to Figures 3 to 17 it is readily apparent that the only immediate determinant of brand choice is intention. Path coefficients (P_{76}) range from .304 to .577. This linkage is consistently stronger than any other linkage in the model. If the path coefficient is squared, the resulting statistic is directly interpretable as the amount of variance in the dependent variable which is attributable to the independent variable. In this case, it may be stated that the amount of variance in brand choice directly attributable to intention ranges from .09 to .33.

Intention, on the other hand, is a function of two direct paths, the one linking it with attitudes and the one linking it with normative compliance. The most important immediate determinant of intention is attitude. P_{64} ranges from .290 to .464 while the linkage from normative compliance (P_{65}) ranges from .068 to .211.

As specified, the model details two indirect paths linking personality to brand choice. The first path posits that brand choice is a function of personality (X_1), evaluative criteria (X_2), beliefs (X_3), attitudes (X_4), and intentions (X_6). The second and the more direct path explains brand choice in terms of personality (X_1), normative compliance

TABLE 20

A COMPARISON OF PATH COEFFICIENTS

	Marlboro		Marlboro Lights			Winston	Winston Lights	Salem Lights			Kool			Newport	
	(c)	(a)	(d)	(c)	(f)	(c)	(f)	(e)	(f)	(a)	(d)	(c)	(b)	(c)	(f)
P_{21}	-.147	.106	.113	-.147	-.127	-.147	-.127	.180	-.127	.106	.113	-.147	-.117	-.147	-.127
P_{32}	.122	.101	.157	.208	-.320	.164	-.342	-.193	-.368	-.198	-.128	.147	.093	.218	-.369
P_{43}	.186	.237	.267	.096	.157	.125	.252	-.141	.190	.137	.185	.157	-.102	.112	.100
P_{51}	-.180	-.180	-.136	-.180	-.301	-.180	-.301	-.136	-.301	-.180	-.136	-.180	-.180	-.180	.301
P_{64}	.290	.365	.365	.365	.365	.401	.464	.315	.315	.336	.336	.336	.290	.290	.290
P_{65}	.117	.187	.187	.187	.187	.183	.211	.108	.108	.068	.068	.068	.117	.117	.117
P_{76}	.564	.392	.371	.392	.380	.304	.493	.496	.479	.405	.577	.568	.344	.344	.359
P_{71}	.183	.06	-.021	.06	-.131	-.089	.137	-.109	-.09	.07	.279	.07	.09	.09	.028

(a) Based on the trait of change and evaluative criterion distinctive flavor

(b) Based on the trait of change and evaluative criterion low tar and nicotine content

(c) Based on the trait of change and evaluative criterion draws easily

TABLE 20--Continued

(d) Based on the trait of dominance and full rich taste

(e) Based on the trait of dominance and strong smoke

(f) Based on the trait of aggression and projects a mature image

(X_5) and intentions (X_6). The strength of the indirect paths may be measured by the product of the path coefficients comprising the linkages among the variables in question. The longer indirect path from personality mediated by evaluative criteria, beliefs, attitudes, and intentions ranges in value from .0001 to .006 ($P_{21}P_{32}P_{43}P_{64}P_{76}$). The shorter path ($P_{51}P_{65}P_{76}$) ranges in value from .005 to .031. Thus, the shorter path appears to exert a stronger overall effect on brand choice in this particular case. As such, the influence of personality appears to be weighted more heavily along the shorter path mediated by normative compliance than along the more extended path.

Path P_{71} linking personality directly to brand choice varies in magnitude from .021 to .279. As a direct explanatory variable of brand choice, personality accounts for consistently less explained variance than does intention (.0004 to .078 for personality as compared to .09 to .33 for intention).

One of the advantages of path analysis is that it permits the decomposition of the effects of each variable on subsequent variables in the model. This enables the analysis not only of the more obvious direct effects of one variable on another, but it also permits the researcher to examine how the effect of one variable is passed on through other variables within the model, a more theoretically intriguing question. To this end, Tables 21 to 35 present the decomposition of the effects of the variables in Figures 3 to 17. These tables are presented on the following pages.

TABLE 21

DECOMPOSITION OF THE EFFECTS IN FIGURE 3

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.147	None	.147
X_1X_3	None	.018	.018
X_1X_4	None	.003	.003
X_1X_5	.180	None	.180
X_1X_6	None	.001	.001
X_1X_7	.183	.012	.195
X_2X_3	.122	None	.122
X_2X_4	None	.023	.023
X_2X_5	None	None	None
X_2X_6	None	.007	.007
X_2X_7	None	.0004	.0004
X_3X_4	.186	None	.186
X_3X_5	None	None	None
X_3X_6	None	.054	.054
X_3X_7	None	.03	.03
X_4X_5	None	None	None
X_4X_6	.290	None	.290
X_4X_7	None	.164	.164
X_5X_6	.117	None	.117
X_5X_7	None	.066	.066
X_6X_7	.564	None	.564

TABLE 22

DECOMPOSITION OF THE EFFECTS IN FIGURE 4

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.106	None	.106
X_1X_3	None	.011	.011
X_1X_4	None	.003	.003
X_1X_5	.180	None	.180
X_1X_6	None	.035	.035
X_1X_7	.06	.0136	.074
X_2X_3	.101	None	.101
X_2X_4	None	.024	.024
X_2X_5	None	None	None
X_2X_6	None	.009	.009
X_2X_7	None	.003	.003
X_3X_4	.237	None	.237
X_3X_5	None	None	None
X_3X_6	None	.087	.087
X_3X_7	None	.034	.034
X_4X_5	None	None	None
X_4X_6	.365	None	.365
X_4X_7	None	.143	.143
X_5X_6	.187	None	.187
X_5X_7	None	.034	.034
X_6X_7	.392	None	.392

TABLE 23

DECOMPOSITION OF THE EFFECTS IN FIGURE 5

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.113	None	.113
X_1X_3	None	.018	.018
X_1X_4	None	.005	.005
X_1X_5	.136	None	.136
X_1X_6	None	.027	.027
X_1X_7	.021	.010	.031
X_2X_3	.157	None	.157
X_2X_4	None	.018	.018
X_2X_5	None	None	None
X_2X_6	None	.018	.018
X_2X_7	None	.0006	.0006
X_3X_4	.267	None	.267
X_3X_5	None	None	None
X_3X_6	None	.097	.097
X_3X_7	None	.036	.036
X_4X_5	None	None	None
X_4X_6	.365	None	.365
X_4X_7	None	.135	.135
X_5X_6	.187	None	.187
X_5X_7	None	.068	.068
X_6X_7	.371	None	.371

TABLE 24

DECOMPOSITION OF THE EFFECTS IN FIGURE 6

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.147	None	.147
X_1X_3	None	.031	.031
X_1X_4	None	.003	.003
X_1X_5	.180	None	.180
X_1X_6	None	.035	.035
X_1X_7	.06	.014	.074
X_2X_3	.208	None	.208
X_2X_4	None	.020	.020
X_2X_5	None	None	None
X_2X_6	None	.007	.007
X_2X_7	None	.003	.003
X_3X_4	.096	None	.096
X_3X_5	None	None	None
X_3X_6	None	.035	.035
X_3X_7	None	.014	.014
X_4X_5	None	None	None
X_4X_6	.365	None	.365
X_4X_7	None	.143	.143
X_5X_6	.187	None	.187
X_5X_7	None	.073	.073
X_6X_7	.392	None	.392

TABLE 25

DECOMPOSITION OF THE EFFECTS IN FIGURE 7

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.127	None	.127
X_1X_3	None	.041	.041
X_1X_4	None	.006	.006
X_1X_5	.301	None	.301
X_1X_6	None	.059	.059
X_1X_7	.131	.022	.153
X_2X_3	.320	None	.320
X_2X_4	None	.050	.050
X_2X_5	None	None	None
X_2X_6	None	.018	.018
X_2X_7	None	.007	.007
X_3X_4	.157	None	.157
X_3X_5	None	None	None
X_3X_6	None	.022	.022
X_3X_7	None	.008	.008
X_4X_5	None	None	None
X_4X_6	.365	None	.365
X_4X_7	None	.139	.139
X_5X_6	.187	None	.187
X_5X_7	None	.056	.056
X_6X_7	.380	None	.380

TABLE 26

DECOMPOSITION OF THE EFFECTS IN FIGURE 8

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.147	None	.147
X_1X_3	None	.024	.024
X_1X_4	None	.003	.003
X_1X_5	.180	None	.180
X_1X_6	None	.034	.034
X_1X_7	.089	.010	.100
X_2X_3	.164	None	.164
X_2X_4	None	.021	.021
X_2X_5	None	None	None
X_2X_6	None	.008	.008
X_2X_7	None	.002	.002
X_3X_4	.125	None	.125
X_3X_5	None	None	None
X_3X_6	None	.050	.050
X_3X_7	None	.015	.015
X_4X_5	None	None	None
X_4X_6	.401	None	.401
X_4X_7	None	.122	.122
X_5X_6	.183	None	.183
X_5X_7	None	.056	.056
X_6X_7	.304	None	.304

TABLE 27

DECOMPOSITION OF THE EFFECTS IN FIGURE 9

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.127	None	.127
X_1X_3	None	.043	.043
X_1X_4	None	.011	.011
X_1X_5	.301	None	.301
X_1X_6	None	.069	.069
X_1X_7	.137	.034	.171
X_2X_3	.342	None	.342
X_2X_4	None	.021	.021
X_2X_5	None	None	None
X_2X_6	None	.040	.040
X_2X_7	None	.020	.020
X_3X_4	.252	None	.252
X_3X_5	None	None	None
X_3X_6	None	.117	.117
X_3X_7	None	.058	.058
X_4X_5	None	None	None
X_4X_6	.464	None	.464
X_4X_7	None	.229	.229
X_5X_6	.211	None	.211
X_5X_7	None	.104	.104
X_6X_7	.493	None	.493

TABLE 28

DECOMPOSITION OF THE EFFECTS IN FIGURE 10

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.180	None	.180
X_1X_3	None	.035	.035
X_1X_4	None	.005	.005
X_1X_5	.136	None	.136
X_1X_6	None	.016	.016
X_1X_7	.109	.008	.117
X_2X_3	.193	None	.193
X_2X_4	None	.027	.027
X_2X_5	None	None	None
X_2X_6	None	.009	.009
X_2X_7	None	.004	.004
X_3X_4	.141	None	.141
X_3X_5	None	None	None
X_3X_6	None	.044	.044
X_3X_7	None	.022	.022
X_4X_5	None	None	None
X_4X_6	.315	None	.315
X_4X_7	None	.156	.156
X_5X_6	.108	None	.108
X_5X_7	None	.054	.054
X_6X_7	.496	None	.496

TABLE 29

DECOMPOSITION OF THE EFFECTS IN FIGURE 11

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.127	None	.127
X_1X_3	None	.047	.047
X_1X_4	None	.009	.009
X_1X_5	.301	None	.301
X_1X_6	None	.006	.006
X_1X_7	.09	.017	.107
X_2X_3	.368	None	.368
X_2X_4	None	.070	.070
X_2X_5	None	None	None
X_2X_6	None	.022	.022
X_2X_7	None	.011	.011
X_3X_4	.190	None	.190
X_3X_5	None	None	None
X_3X_6	None	.060	.060
X_3X_7	None	.029	.029
X_4X_5	None	None	None
X_4X_6	.315	None	.315
X_4X_7	None	.151	.151
X_5X_6	.108	None	.108
X_5X_7	None	.033	.033
X_6X_7	.479	None	.479

TABLE 30

DECOMPOSITION OF THE EFFECTS IN FIGURE 12

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.106	None	.106
X_1X_3	None	.021	.021
X_1X_4	None	.003	.003
X_1X_5	.180	None	.180
X_1X_6	None	.013	.013
X_1X_7	.07	.005	.075
X_2X_3	.198	None	.198
X_2X_4	None	.027	.027
X_2X_5	None	None	None
X_2X_6	None	.009	.009
X_2X_7	None	.004	.004
X_3X_4	.137	None	.137
X_3X_5	None	None	None
X_3X_6	None	.046	.046
X_3X_7	None	.019	.019
X_4X_5	None	None	None
X_4X_6	.336	None	.336
X_4X_7	None	.136	.136
X_5X_6	.068	None	.068
X_5X_7	None	.012	.012
X_6X_7	.405	None	.405

TABLE 31

DECOMPOSITION OF THE EFFECTS IN FIGURE 13

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.113	None	.113
X_1X_3	None	.014	.014
X_1X_4	None	.003	.003
X_1X_5	.136	None	.136
X_1X_6	None	.010	.010
X_1X_7	.279	.006	.285
X_2X_3	.128	None	.128
X_2X_4	None	.024	.024
X_2X_5	None	None	None
X_2X_6	None	.008	.008
X_2X_7	None	.005	.005
X_3X_4	.185	None	.185
X_3X_5	None	None	None
X_3X_6	None	.062	.062
X_3X_7	None	.036	.036
X_4X_5	None	None	None
X_4X_6	.336	None	.336
X_4X_7	None	.194	.194
X_5X_6	.068	None	.068
X_5X_7	None	.005	.005
X_6X_7	.577	None	.577

TABLE 32

DECOMPOSITION OF THE EFFECTS IN FIGURE 14

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.147	None	.147
X_1X_3	None	.022	.022
X_1X_4	None	.003	.003
X_1X_5	.180	None	.180
X_1X_6	None	.013	.013
X_1X_7	.07	.008	.078
X_2X_3	.147	None	.147
X_2X_4	None	.023	.023
X_2X_5	None	None	None
X_2X_6	None	.008	.008
X_2X_7	None	.004	.004
X_3X_4	.157	None	.157
X_3X_5	None	None	None
X_3X_6	None	.053	.053
X_3X_7	None	.030	.030
X_4X_5	None	None	None
X_4X_6	.336	None	.336
X_4X_7	None	.191	.191
X_5X_6	.068	None	.068
X_5X_7	None	.039	.039
X_6X_7	.568	NOne	.568

TABLE 33

DECOMPOSITION OF THE EFFECTS IN FIGURE 15

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.117	None	.117
X_1X_3	None	.011	.011
X_1X_4	None	.001	.001
X_1X_5	.180	None	.180
X_1X_6	None	.021	.021
X_1X_7	.090	.007	.097
X_2X_3	.093	None	None
X_2X_4	None	.009	.009
X_2X_5	None	None	None
X_2X_6	None	.003	.003
X_2X_7	None	.0009	.0009
X_3X_4	.102	None	.102
X_3X_5	None	None	None
X_3X_6	None	.030	.030
X_3X_7	None	.010	.010
X_4X_5	None	None	None
X_4X_6	.290	None	.290
X_4X_7	None	.100	.100
X_5X_6	.117	None	.117
X_5X_7	None	.040	.040
X_6X_7	.344	None	.344

TABLE 34

DECOMPOSITION OF THE EFFECTS IN FIGURE 16

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.147	None	.147
X_1X_3	None	.032	.032
X_1X_4	None	.004	.004
X_1X_5	.180	None	.180
X_1X_6	None	.022	.022
X_1X_7	.09	.008	.098
X_2X_3	.218	None	.218
X_2X_4	None	.024	.024
X_2X_5	None	None	None
X_2X_6	None	.007	.007
X_2X_7	None	.002	.002
X_3X_4	.112	None	.112
X_3X_5	None	None	None
X_3X_6	None	.032	.032
X_3X_7	None	.011	.011
X_4X_5	None	None	None
X_4X_6	.290	None	.290
X_4X_7	None	.100	.100
X_5X_6	.117	None	.117
X_5X_7	None	.040	.040
X_6X_7	.344	None	.344

TABLE 35

DECOMPOSITION OF THE EFFECTS IN FIGURE 17

Bivariate Relationship	Direct	Indirect	Total
X_1X_2	.127	None	.127
X_1X_3	None	.047	.047
X_1X_4	None	.005	.005
X_1X_5	.301	None	.301
X_1X_6	None	.037	.037
X_1X_7	.028	.013	.041
X_2X_3	.369	None	.369
X_2X_4	None	.037	.037
X_2X_5	None	None	None
X_2X_6	None	.011	.011
X_2X_7	None	.004	.004
X_3X_4	.100	None	.100
X_3X_5	None	None	None
X_3X_6	None	.029	.029
X_3X_7	None	.010	.010
X_4X_5	None	None	None
X_4X_6	.290	None	.290
X_4X_7	None	.104	.104
X_5X_6	.117	None	.117
X_5X_7	None	.042	.042
X_6X_7	.359	None	.359

The indirect effect of personality on brand choice varies from .005 to .034. Thus, it can be seen that the effect of personality is greatly mitigated as it passes through the various intervening variables. The greatest total effect that personality exerts on brand choice behavior is .285, explaining approximately 8 percent of the variance in brand choice (Figure 13). In this case the majority of this explained variance (97 percent) is attributable to the direct effect. This direct effect of personality on brand choice is extremely high relative to the other values of P_{71} and may be an artifact of the measuring and sampling processes. Certainly, it is not representative of the other findings.

The direct and indirect effects of personality on the other variables in the model can also be determined by examining Tables 21 to 35. Personality exerts its strongest direct effect on normative compliance (.301). This is in accordance with the theoretical basis of the model. The authors point out that "Normative compliance requires more than just the existence of influence on choice from friends, relatives and others. The individual also must be motivated to comply, and this sensitivity to influence is a factor in one's personality makeup." In this particular instance, the trait in question is aggression giving an intuitive rational for the strength of this relationship.

The strongest path linking personality with evaluative criteria is that between the trait of dominance and the

criterion strong smoke (.180). Again, certain intuitive rational may be found in this relationship. However, in this case this may prove misleading since the intervening variable of motives has been deleted from this analysis.

It is interesting to note how the influence of personality is mitigated from variable to variable. More and more of its influence and consequently explanatory power is lost the closer the brand choice decision is approximated. This provides dynamic corroboration for the small relationships which have been generated between personality and behavior by personality researchers. This process of influence attrition exists for all the variables in the system, pointing out once more the reliance on intention as a determinant of brand choice. That P_{76} does not equal 1 attests to the existence of unanticipated circumstances which operate to reduce this relationship.

The strongest indirect effect in the model is that exerted on choice by attitude. This effect varies in magnitude from .1 to .229 and may indicate the potential for revising the model to incorporate a direct path from attitude to choice.

Linking personality directly to brand choice is P_{76} which varies in magnitude from .021 to .279. As a direct explanatory variable of brand choice, personality accounts for consistently less explained variance than does intention (.0004 to .078 for personality as compared to .09 to .33 for intention).

A comparison of more substantive concern is that between P_{71} and P_{21} and P_{71} and P_{51}. According to the theoretical structure of the model, the linkage from personality to evaluative criteria is consistently stronger (even with the absence of the motives variable), .106 to .180 than that from personality to brand choice. In a similar manner, the linkage from personality to normative compliance varies in magnitude from .136 to .301, again, consistently greater than the linkage from personality to brand choice. The question concerning the personality variable then is, what position within the theoretical structure of brand choice behavior does it occupy? By examining the magnitude of the path coefficients and the theoretical basis on which they were generated, personality appears to occupy a more meaningful position as a determinant of evaluative criteria and normative compliance, exerting an indirect rather than direct effect on brand choice.

One other observation merits discussion concerning the explanatory power of this model as specified. By squaring the residual path coefficients for any variable a statement concerning the amount of measured variance may be made. In this case the amount of unmeasured variance in brand choice varies from 68 percent to 90 percent. Stated another way, the variables in the model explain from 10 percent to 32 percent of the variance in the respondent's choice of cigarette brands. This would indicate that the portion of the model extracted for study omits other

variables which would in all likelihood add to the explanatory power of the model. This is not surprising and was introduced as a caveat in the chapter on scope and limitations. Other social variables such as cultural norms, reference group and family influence would probably be useful in the study of cigarette brand choice. However, because of the need to limit the investigation these variables were omitted. What this study does purport to explicate is the relationship among the variables included within the truncated model and their influence within the cigarette brand choice decision.

Tests of the Model

Up to this point the focus has been on the magnitude of the individual linkages assuming the model is valid as specified. This is an assumption which merits further examination. Tests may be made of the individual linkages to determine whether they should be included as specified or whether different linkages are warranted. This testing is effected by partialling out the effects of all preceeding and intervening variables that impact the variables in question. If a linkage which has been omitted should be omitted, the appropriate partial correlation coefficient will equal zero. Accordingly, a number of predictive equations have been generated against which the actual partial correlation coefficients may be compared. Again, so as to facilitate comparison, these are arrayed in tabular form with the predictive equations in the left column and the actual values presented under the various

figures from which they have been generated. This table appears on page 142.

Because of the iterative nature of this analysis, it proves more advantageous to examine not the specific diagrams for differences but rather to focus on individual paths across diagrams. Thus, if significant differences do exist it can be determined whether they are sporadic in nature, the product of chance, or whether a consistent difference is manifested. If the differences are consistent this would suggest the need for revision of the model given the necessary substantive justification. Probability theory indicates that at $p < .05$ approximately one difference (.05 x 15 tests) should result from chance alone. More than one significant difference would signal differences due to actual differences in the data. However, because of the nature of the consequences of model revision a more stringent proof is required. Therefore, equations manifesting differences few in number are ignored. Instead, decisions to revise the model are made on consistent and numerous differences in the partial correlation coefficients.

Applying this criterion to the data in Table 36 shows two paths where differences are numerous and consistent. The partial $r_{36.1245}$ tests for a linkage between beliefs and intentions. Thirteen of the fifteen partials are significant at $p < .05$. This provides a strong argument that beliefs exert more than just an indirect influence on intention mediated by attitudes. By partialling out the effects

TABLE 36

TESTS OF THE LINKAGES

	Figure 3	Figure 4	Figure 5	Figure 6	Figure 7	Figure 8	Figure 9	Figure 10
$r_{13.2}$	-.04	-.07	.004	-.01	-.17*	-.06	-.13*	.05
$r_{14.23}$	.08	.01	.10	.02	.22*	-.14*	.12*	-.02
$r_{16.2345}$	-.06	-.006	.01	-.02	.12*	-.08	.05	.06
$r_{17.23456}$	.06	.02	-.03	-.007	-.21*	-.10	.05	-.04
$r_{24.13}$	-.01	-.03	.09	-.02	-.02	-.07	-.04	.11
$r_{25.134}$	-.03	.07	.005	-.04	-.13*	-.04	-.16*	-.002
$r_{25.1345}$	-.01	-.01	.09	.05	-.04	-.04	-.03	.13*
$r_{27.13456}$	.06	-.12*	-.10	-.15*	-.17*	-.03	.15*	-.02
$r_{35.124}$	.05	-.01	-.11	.07	.25*	.11	.09	-.07
$r_{36.1245}$	.35*	.44*	.41*	.22*	.15*	.18*	.21*	.11
$r_{37.12456}$	.03	-.19*	-.15*	-.05	-.11	-.003	.07	.03
$r_{45.123}$	.08	-.07	-.07	-.07	-.02	.09	.001	.04
$r_{47.12356}$	.27*	.09	.10	.10	.15*	.14*	.06	.22*
$r_{57.12346}$	.10	.06	.05	.07	.001	.14*	.12*	.11

TABLE 36--Continued

	Figure 11	Figure 12	Figure 13	Figure 14	Figure 15	Figure 16	Figure 17
$r_{13.2}$	-.08	.04	.09	.14*	.22	.12	-.13
$r_{14.23}$	.002	.09	.01	.13*	.14*	.16	.07
$r_{16.2345}$	-.009	.03	-.12*	.005	-.04	-.04	-.11
$r_{17.23456}$	-.14*	.04	.21*	.03	.03	.03	-.08
$r_{24.13}$	-.04	-.07	.25*	.07	.07	-.003	.07
$r_{25.134}$	-.16*	.07	.008	-.03	-.03	-.05	-.15*
$r_{26.1345}$	.05	-.001	.03	-.07	.03	-.07	.13*
$r_{27.13456}$	-.08	.04	-.02	-.07	.05	.03	-.07
$r_{35.124}$	.10	-.07	-.10	.07	-.05	.10	.08
$r_{36.1245}$	.21*	.20*	.34*	.11	.16*	.15*	.15*
$r_{37.12456}$	-.02	-.02	-.04	.03	.01	.01	.12
$r_{45.123}$	.03	-.04	-.06	-.02	-.08	-.08	-.09
$r_{47.12356}$	.23*	.17*	.19*	.18*	.15*	.16*	.18*
$r_{57.12346}$	.05	.02	-.04	.02	.04	.04	-.02

*significant at $p < .05$

of all preceeding and intervening variables, the remaining relationship between the belief variable and the intention variable is still significant. The strength of this relationship varies in magnitude from .15 to .44 indicating that the belief component has the capacity for explaining from 2.25 percent to 19.36 percent of the variance in intentions.

One other series of partials indicates that revision is in order. That is, $r_{47.12356}$ is significantly different from zero in eleven of the fifteen cases. This test examines the relationship between attitudes and brand choice. This relationship varies from a value of .14 to .27 accounting for approximately 2 percent to 7.3 percent of the variance in brand choice. While not as strong as the relationship between beliefs and intentions is does indicate that the effect of attitudes on brand choice, like the effect of beliefs on intentions, is twofold. As the model indicates, intervening variables mediate the effects of the two variables but an unmediated direct effect does exist.

It is interesting to compare these direct effects with the indirect effects shown in Tables 21 to 35. In the case of beliefs, the indirect effect on intentions varies from .022 to .117. As mentioned earlier the direct effect of beliefs on intentions varies from .15 to .44, a noticeable difference. The indirect effect of attitudes on brand choice varies from .1 to .221 while the direct effect ranges from .14 to .26, an ffect of approximate magnitude. Within the context of the model, this would indicate a significant portion of the variance in the variables of intention and brand choice is not measured due to

the present specification of the model. Moreover, the addition of these two paths may provide valuable insight into the overall brand choice decision.

Figure 18 on page 146 contains the additional paths indicated by the tests of the linkages. Since this study has focused on one product class only, cigarettes, a product which may best be characterized involving a routinized purchase decision, there is some question as to whether these results permit generalization to other product classes. In addition, a question as to the magnitude of the path linkages exists when other product classes are considered. Hopefully, these questions will form the focus of further investigations. In this case, the findings may be product class specific and beliefs as to the brands' ability to satisfy a particular evaluative criterion may be a more important input into an individual's intention to buy a specific brand than in choice decisions involving other products. Similarly, liking a particular brand of cigarettes may be more influential in the choice of a brand of cigarettes than in other products. This is a high involvement product and consequently the brand choice may be made on a more subjective basis thus accounting for the centrality of beliefs and attitudes in the decision process.

Two other tests merit closer examination. The first if $r_{17.23456}$ which examines a hypothetical path between personality and brand choice. Only three significant differences in the possible fifteen tests were found. This would indicate that in all liklihood the model specifying the

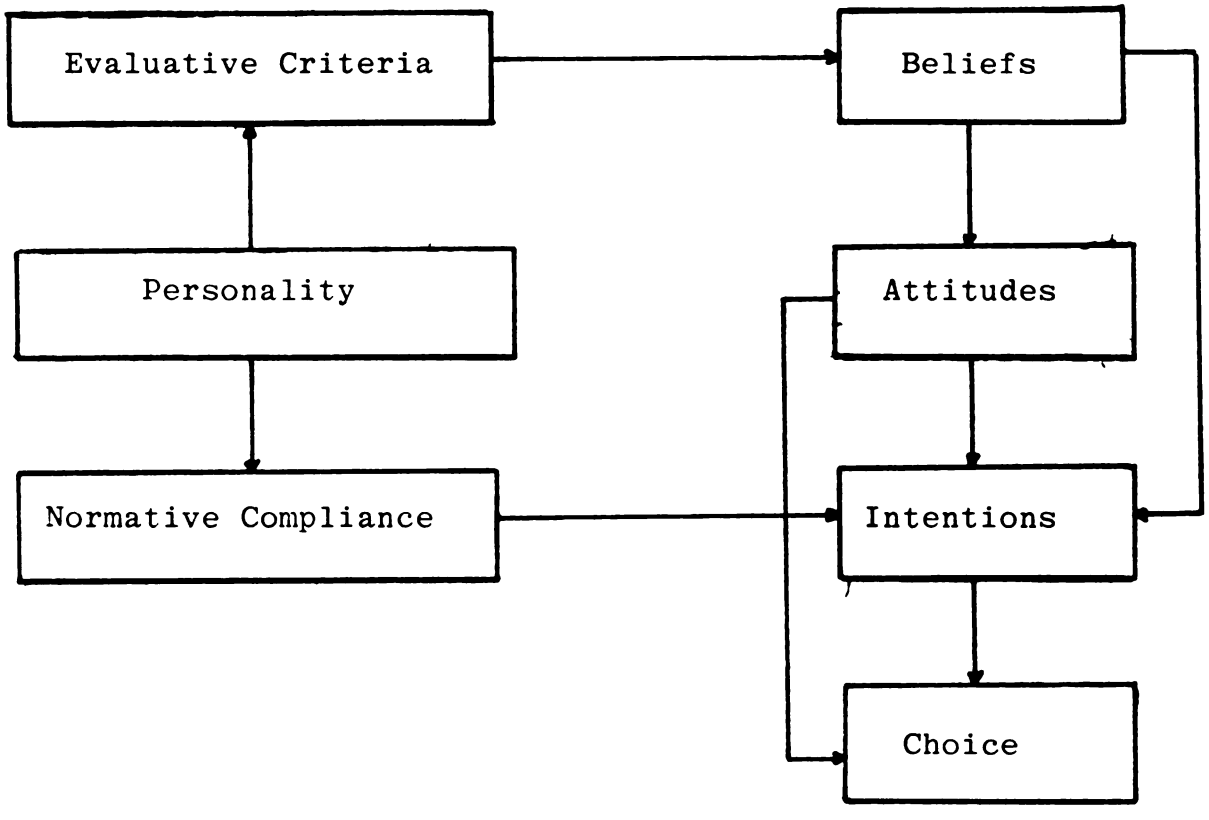

Figure 18 Proposed Revision of the EKB Model

omission of this linkage is correct. Path P_{71} was incorporated into the analysis for comparative reasons only and should not be a part of the formal theoretical structure of the brand choice decision.

The second test of concern is that which examines the linkage between evaluative criteria and beliefs, $r_{24.13}$. Beliefs are statements of probability that a specific brand satisfies a particular evaluative criteria. The relationship between these two variables appears more definitional in nature than causal. This path is marked by significant path coefficients and the test which omits this linkage reveals only two significant differences of the fifteen tests which were made. While this is more than would be expected to result from chance alone it does not indicate that a revision of the model is in order. The relationship between these two variables is somewhat tautalogical since the evaluative criteria provide the basis on which the beliefs are predicated. It is this relationship which may account for the significant linkage. In the other tests differences are to be found but not of a number to warrant further revision of the model.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this research has been to causally examine the role of personality in the brand choice decision when incorporated within a theoretical structure of the brand choice decision. The model chosen for this analysis was the Engel, Blackwell, and Kollat model. Because of the necessity to limit the scope of this investigation only a portion of the model was used. The constructs extracted from the model include personality, evaluative criteria, beliefs, attitudes, intentions, normative compliance, and brand choice. The analysis focused on results of the global relationships between the constructs and the results of the investigation were reported in Chapter V. The purpose of this chapter is to summarize and discuss the findings and to suggest implications for the field of consumer behavior and future research.

This research effort represents the first attempt to empirically test the EKB model on such a large scale. Many researchers have examined the relationships between and among portions of the model with their efforts contributing to the subsequent development of the comprehensive efforts of Engel, Kollat, and Blackwell.

A model may be devised to serve at least one of two purposes. First, the model may be preeminently explanatory in nature, the major purpose that of explicating the relationships between and among the various components within the model. The second purpose of model construction addresses the issue of prediction. Here the objective of the model is to predict an action or an event.

An interesting paradox arises from these related objectives of understanding and predicting. It would seem logical that models whose purpose is that of explanation could also be used to predict. If, after all, a phenomenon can be explained, why then can it not be predicted? The answer lies in the power-precision paradox. In essence this concept maintains that a phenomenon may be explained with a great amount of power, yet may not be predicted with any amount of precision. The converse situation is also true. A phenomenon may be predicted with great precision yet not explained.

Such is the case with the EKB model. The authors have constructed a model of consumer behavior which is preeminently explanatory in nature, developed for teaching purposes. This is their stated purpose and is substantiated by the large amounts of residual error that occur when empirically examined. Thus, to expect the model to predict brand choice behavior with a great amount of precision is to make it serve a task for which it was not meant.

The primary reason for this paradox is due to the level of abstraction on which the constructs are defined. A large gap exists between the conceptual definition of a construct and its operational counterpart. Too often, surrogate variables are employed to measure a construct and hence a question of construct validity arises.

A second problem addresses a related issue. Oftentimes, many alternative measures of a construct are available to the researcher who must, on the basis of some substantive rational, choose that measurement mechanism which most closely approximates the construct under study in a given situation. This measurement problem is oftentimes situational in nature, thus making explanation and/or prediction also situation specific.

The EKB model is preeminently an explanatory model. However, not entirely. Portions of the model, most notably those constructs of attitude, evaluative criteria, intention and choice, areas of the model which have enjoyed the greatest amount of research attention, are also predictive in nature. Buttressed by great amounts of empirical work, these constructs have been developed, refined and made operational to such an extent that a greater amount of predictive power is forthcoming from them. Other constructs in the model, such as personality, beliefs and normative compliance, have not enjoyed this same emphasis, and accordingly do not enjoy the same predictive power that the other constructs do. Thus, the EKB model incorporates constructs which are both

explanatory and predictive in nature.

In spite of the relatively low correlations that have characterized this research several important findings are manifest:

1. The role that personality occupies within the brand choice decision has been well explicated by the iterative analyses conducted in Chapter V. While some relationship does exist between individual traits and brand choice behavior, subsequent tests of this linkage, partialling out the effects of all other variables in the model, show this linkage to be nonsignificant and incorrectly specified. The path from personality to brand choice was included in the analysis to facilitate comparison between the use of personality as a sole determinant of brand choice and the effect of personality when mediated by other intervening variables specified in the model. Accordingly, it was found that personality exerts its greatest influence on brand choice when mediated by normative compliance and intention. The other indirect path links personality to brand choice through the intervening variables of evaluative criteria, beliefs, attitudes, and intentions. This indirect effect is not as strong as the effect generated via the shorter path, probably resulting from the number of intervening variables. The longer the path the more the effect of personality is mitigated accounting for less and less explanatory power. Thus, it is more readily understandable why personality is not a powerful explanatory variable in

brand choice research. Consequently, to expect personality to impact brand choice beyond its influence on adjacent variables is overly optimistic and theoretically incorrect.

2. Personality traits have been used in research on brand choice decisions as moderator variables resulting in greater predictability of brand choice dependent upon the level of the trait being measured. Previous research has shown that this is a promising avenue for further investigation. Consequently this research examined the relationships between different levels of specific traits and normative compliance and evaluative criteria. Implicitly it was hypothesized that if personality exerted a moderating influence respondents manifesting high levels of a trait would differ in their evaluation of certain product dimensions than would their low-level counterparts. This same relationship was believed to exist for the normative compliance variable. In the present situation however, the personality traits used exerted no moderating influence on either of the theoretically proximate variables of normative compliance or evaluative criteria. Thus, it appears that the moderating influence of personality is trait specific.

3. That the effect of personality is trait specific points out several problems left unanswered by this research. Specifically, a question remains as to which traits should be used in studies of brand choice. Researchers in personality are still confronted with choosing specific traits on a trial and error basis. The use of different traits may

have produced linkages of varying magnitudes between personality and the two adjacent variables. A related question concerns how many traits should be used to comprise the personality variable. Some inventories used in consumer behavior research measure up to fifty traits. For any one brand choice decision it is doubtful that all traits will be important as evidenced by the significance of only three of the original eight traits used in this study. If more than one trait is involved in a given decision then a question arises as to what weighting process is involved.

4. Two ancillary findings of significant import concern the specification of the beliefs and attitudes variables. Subsequent tests of the specification of the model indicate a significant, but unstated, direct linkage between the beliefs variable and the intentions variable. In a similar fashion a direct influence was found to be exerted by the attitude variable on the brand choice variable. Both of these direct influences were found to be equally as strong as their indirect counterparts, a fact which would indicate that more of the unmeasured variance in brand choice could be explained by their inclusion in the model.

The findings concerning these two direct linkages may be product class specific. The choice of cigarettes, as a high involvement product, may be more subjective in nature than other product decisions. This subjectivity may call into play greater reliance on beliefs and attitudes thus accounting for the direct effects found linking them

to intentions and brand choice respectively.

5. The indication of how effective the model was in explaining brand choice of cigarettes is best shown in the amount of the residual paths of brand choice. In all cases these were quite high with the magnitudes of these residual variances ranging from 68 to 90 percent. Thus the variables in the model were successful in explaining from 10 to 32 percent of the variance in cigarette choice. One reason for this large unmeasured variance may be the omission of the linkage from beliefs to intentions and the linkage from attitudes to brand choice. More likely, is the omission of several other variables specified in the model. While the importance of these variables is recognized, inclusion of them would have put a prohibitive constraint on the conduct of this research. Social variables such as family and reference group affiliations may have proved significant in the explanation of cigarette brand choice. This analysis proved fruitful on two counts. First, the manner in which personality impacts the brand choice decision has been well substantiated and second, the degree of this impact has been measured. These conclusions provide a basis for recommendations concerning future research in personality and the use of the Engle, Blackwell, and Kollat model.

1. It seems that replications of studies using this theoretical framework are in order. Future replications should concentrate on:

a) The use of different methods for choosing these traits on some basis other than trial and error.

b) Some methods by which the traits may be combined to construct a composite personality variable. Improved relationships, and consequently increased explanatory power of personality's role in the brand choice decision, may be forthcoming from such an approach.

c) The use of different product classes to determine whether the effect of personality changes depending on the type of brand choice decision. This use of different product classes would also add to the generalizability of the model as an explanatory devise for brand choice decisions.

d) Continued use of personality as a moderator variable. Since this appears to be trait specific the use of different traits and different product classes may shed more light on the effect of personality in brand choice decisions.

2. The use of existent personality inventories has been the rule in personality research. This provides the researcher with a convenient and generally reliable instrument for measuring specific traits. Unfortunately, the accuracy and significance of the results may be sacrificed for the sake of convenience. This would indicate the need

for continued development of marketing specific inventories.

3. In addition to the focus on personality, future research involving replications of the EKB model should concentrate on the findings linking beliefs to intentions and attitudes to brand choice. Again, by varying product class the generalizability of these direct paths may be determined and tested.

APPENDICES

APPENDIX A

THE QUESTIONNAIRE

The following questions concern your opinions regarding certain brands of cigarettes. We are interested in your feelings and opinions, no matter on what they are based. It may be that you have not smoked all of the brands in the study. This does not matter. We ask that you respond to each question, even though you are answering on what you may feel is inadequate information.

Listed below are various factors other people have said they consider when choosing a particular brand of cigarette. As a smoker, please give your opinion about each factor as being negative (bad) or positive (good) in the choice of the brand you smoke. Simply place an X on one of the seven spaces of each scale to indicate your opinion from extremely negative (bad) to extremely positive (good).

	Extremely Negative			Neutral			Extremely Positive
	1	2	3	4	5	6	7
Distinctive Flavor	___	___	___	___	___	___	___
Low Tar and Nicotine Content	___	___	___	___	___	___	___
Full Rich Taste	___	___	___	___	___	___	___
Strong Smoke	___	___	___	___	___	___	___
Draws Easily	___	___	___	___	___	___	___
Projects a Mature Image	___	___	___	___	___	___	___

Now you are asked to compare the various cigarette brands with respect to the aforementioned reasons for choosing a brand. Please do so by giving your estimation of the probability, ranging from extremely probable to extremely improbable, that the brands will satisfy each reason listed below.

If you think it is extremely probable that Brand A would be fashionable looking, you would put an X on the first space. If, however, you think it is extremely improbable that Brand A would be fashionable looking, you would put an X on the seventh space. The spaces in between represent varying degrees of probability.

Please evaluate each brand even though you must rely on what you might consider very poor information. We prefer you to guess rather than to leave a blank.

	Extremely Probable						Extremely Improbable
Distinctive Flavor	1	2	3	4	5	6	7
Marlboro	___	___	___	___	___	___	___
Marlboro Lights	___	___	___	___	___	___	___
Winston	___	___	___	___	___	___	___
Winston Lights	___	___	___	___	___	___	___
Salem	___	___	___	___	___	___	___
Salem Lights	___	___	___	___	___	___	___
Kool	___	___	___	___	___	___	___
Newport	___	___	___	___	___	___	___
Low Tar and Nicotine Content	1	2	3	4	5	6	7
Marlboro	___	___	___	___	___	___	___
Marlboro Lights	___	___	___	___	___	___	___
Winston	___	___	___	___	___	___	___
Winston Lights	___	___	___	___	___	___	___
Salem	___	___	___	___	___	___	___
Salem Lights	___	___	___	___	___	___	___
Kool	___	___	___	___	___	___	___
Newport	___	___	___	___	___	___	___
Full Rich Taste	1	2	3	4	5	6	7
Marlboro	___	___	___	___	___	___	___
Marlboro Lights	___	___	___	___	___	___	___
Winston	___	___	___	___	___	___	___
Winston Lights	___	___	___	___	___	___	___
Salem	___	___	___	___	___	___	___
Salem Lights	___	___	___	___	___	___	___
Kool	___	___	___	___	___	___	___
Newport	___	___	___	___	___	___	___

	Extremely Probable						Extremely Improbable
Strong Smoke	1	2	3	4	5	6	7
Marlboro	___	___	___	___	___	___	___
Marlboro Lights	___	___	___	___	___	___	___
Winston	___	___	___	___	___	___	___
Winston Lights	___	___	___	___	___	___	___
Salem	___	___	___	___	___	___	___
Salem Lights	___	___	___	___	___	___	___
Kool	___	___	___	___	___	___	___
Newport	___	___	___	___	___	___	___
Draws Easily	1	2	3	4	5	6	7
Marlboro	___	___	___	___	___	___	___
Marlboro Lights	___	___	___	___	___	___	___
Winston	___	___	___	___	___	___	___
Winston Lights	___	___	___	___	___	___	___
Salem	___	___	___	___	___	___	___
Salem Lights	___	___	___	___	___	___	___
Kool	___	___	___	___	___	___	___
Newport	___	___	___	___	___	___	___
Projects a Mature Image	1	2	3	4	5	6	7
Marlboro	___	___	___	___	___	___	___
Marlboro Lights	___	___	___	___	___	___	___
Winston	___	___	___	___	___	___	___
Winston Lights	___	___	___	___	___	___	___
Salem	___	___	___	___	___	___	___
Salem Lights	___	___	___	___	___	___	___
Kool	___	___	___	___	___	___	___
Newport	___	___	___	___	___	___	___

Now please tell us the probability of purchasing each of the brands listed below the next time you go to buy cigarettes. Do this by placing an X on one of the seven spaces ranging from Extremely Probable to Extremely Improbable.

	Extremely Probable						Extremely Improbable
	1	2	3	4	5	6	7
Marlboro	___	___	___	___	___	___	___
Marlboro Lights	___	___	___	___	___	___	___
Winston	___	___	___	___	___	___	___
Winston Lights	___	___	___	___	___	___	___
Salem	___	___	___	___	___	___	___
Salem Lights	___	___	___	___	___	___	___
Kool	___	___	___	___	___	___	___
Newport	___	___	___	___	___	___	___

Now, we would like you to think of your friends who also smoke. In light of your previous conversations about smoking, which brand do you think most of them would recommend for you to try? Please estimate the probability of their recommendation for each of the brands listed below.

	Extremely Probable						Extremely Improbable
	1	2	3	4	5	6	7
Marlboro	___	___	___	___	___	___	___
Marlboro Lights	___	___	___	___	___	___	___
Winston	___	___	___	___	___	___	___
Winston Lights	___	___	___	___	___	___	___
Salem	___	___	___	___	___	___	___
Salem Lights	___	___	___	___	___	___	___
Kool	___	___	___	___	___	___	___
Newport	___	___	___	___	___	___	___

In general, to what extent do you care whether you smoke the same brand of cigarettes that your friends recommend?

Don't care at all						Care a great deal
1	2	3	4	5	6	7
___	___	___	___	___	___	___

Do you think knowledge of your friends' opinions would affect your decision as to which brand you smoke?

Highly likely to affect my decision						Highly unlikely to affect my decision.
1	2	3	4	5	6	7
___	___	___	___	___	___	___

The people I most admire would recommend that the next time I buy cigarettes I buy:

	Extremely Probable						Extremely Improbable
	1	2	3	4	5	6	7
Marlboro	___	___	___	___	___	___	___
Marlboro Lights	___	___	___	___	___	___	___
Winston	___	___	___	___	___	___	___
Winston Lights	___	___	___	___	___	___	___
Salem	___	___	___	___	___	___	___
Salem Lights	___	___	___	___	___	___	___
Kool	___	___	___	___	___	___	___
Newport	___	___	___	___	___	___	___

The next time I buy cigarettes I intend to follow the recommendations of the people I admire.

Extremely Probable						Extremely Improbable
1	2	3	4	5	6	7
___	___	___	___	___	___	___

Now we want you to think about the time when you first started to smoke. Of the brands listed below, which brands do you think your friends who smoke would have recommended? Please estimate the probability they would have recommended each of the brands.

	Extremely Probable						Extremely Improbable
	1	2	3	4	5	6	7
Marlboro	___	___	___	___	___	___	___
Marlboro Lights	___	___	___	___	___	___	___
Winston	___	___	___	___	___	___	___
Winston Lights	___	___	___	___	___	___	___
Salem	___	___	___	___	___	___	___
Salem Lights	___	___	___	___	___	___	___
Kool	___	___	___	___	___	___	___
Newport	___	___	___	___	___	___	___

When I first started smoking my friends' recommendations were:

Very important to me					Not very important to me	
1	2	3	4	5	6	7
___	___	___	___	___	___	___

In this section we are interested in the extent to which you like or dislike a particular brand of cigarettes. Please indicate your opinion, extremely negative (dislike) or extremely positive (like), of each brand listed below by placing an X on one of the seven spaces of each scale. Again, we would prefer you to guess rather than to leave a blank.

	Extremely Negative			Neutral			Extremely Positive
	1	2	3	4	5	6	7
Marlboro	___	___	___	___	___	___	___
Marlboro Lights	___	___	___	___	___	___	___

	Extremely Negative			Neutral			Extremely Positive
	1	2	3	4	5	6	7
Winston	___	___	___	___	___	___	___
Winston Lights	___	___	___	___	___	___	___
Salem	___	___	___	___	___	___	___
Salem Lights	___	___	___	___	___	___	___
Kool	___	___	___	___	___	___	___
Newport	___	___	___	___	___	___	___

The next time you buy cigarettes, which of the following brands will you choose? Place a 1 by your first choice, a 2 by your second choice and a 3 by your third choice.

Marlboro	___
Marlboro Lights	___
Winston	___
Winston Lights	___
Salem	___
Salem Lights	___
Kool	___
Newport	___

APPENDIX B

THE SAMPLING PLAN

The sample of 200 respondents was drawn so that an element of population representation was preserved. This was done by using the age data extracted from the Statistical Abstract. The latest Statistical Abstract showed that there were 46,035,000 smokers over the age of twenty. Of this number 51.57 percent were male, approximately 23,741,000 and the remainder female, about 22,294,000.

The age breakdowns for both sexes is shown below with the resulting quotas for each age and sex.

Male Smokers	Absolute Number	Percent	Sample Size
20-24	3,058,000	7.60	15
25-44	10,743,000	23.33	47
45-64	7,551,000	16.40	33
Over 65	1,939,000	4.21	8
			103

Female Smokers	Absolute Number	Percent	Sample Size
20-24	3,089,000	6.70	13
25-44	10,124,000	22.80	44
45-64	7,505,000	16.30	33
Over 65	1,517,000	3.43	7
			97

The domain from which the sample was selected consisted of players in the summer softball league who smoked

one of the eight brands selected for use in the study. Potential respondents were screened according to brand of cigarette smoked and age group. Accordingly, the 198 usable responses collected in this study correspond to the demographic data detailed in the Statistical Abstract and are representative of the population of U. S. smokers.

APPENDIX C

TABLE 37

CORRELATIONS BETWEEN ATTITUDE TOWARD A BRAND (AFi)

AND INTENTION TO BUY A SPECIFIC BRAND (Ii)

	I_1	I_2	I_3	I_4	I_5	I_6	I_7	I_8
AF_1	.4723	.2988	.4140	.2824	-.1393	-.1444	-.0625	-.0267
	s=.001	s=.001	s=.001	s=.001	s=.025	s=.021	s=.191	s=.355
AF_2	.2417	.3942	.2808	.3506	-.0630	-.0269	-.0457	.0444
	s=.001	s=.001	s=.001	s=.001	s=.189	s=.353	s=.261	s=.267
AF_3	.3081	.2581	.4115	.3050	-.1243	-.1978	-.1174	-.0213
	s=.001	s=.001	s=.001	s=.001	s=.041	s=.003	s=.050	s=.383
AF_4	.2100	.3792	.2898	.4935	-.0505	-.0024	-.0584	.0455
	s=.001	s=.001	s=.001	s=.001	s=.240	s=.487	s=.207	s=.262
AF_5	-.1712	-.1505	-.1161	-.1899	.1695	.1990	.1195	.0439
	s=.008	s=.017	s=.052	s=.004	s=.008	s=.002	s=.047	s=.270
AF_6	-.1349	-.1284	-.1365	-.1908	.1962	.3163	.1077	.0767
	s=.029	s=.036	s=.028	s=.004	s=.003	s=.001	s=.065	s=.141

TABLE 37--Continued

	I_1	I_2	I_3	I_4	I_5	I_6	I_7	I_8
AF_7	-.0825	-.1833	-.1243	-.2169	.1553	.1312	.3382	.0543
	s=.124	s=.005	s=.040	s=.001	s=.014	s=.033	s=.001	s=.224
AF_8	-.0339	-.0007	-.0577	-.0758	.0688	.1995	.2025	.3108
	s=.318	s=.496	s=.210	s=.144	s=.168	s=.002	s=.002	s=.001

1. Marlboro
2. Marlboro Lights
3. Winston
4. Winston Lights
5. Salem
6. Salem Lights
7. Kool
8. Newport

TABLE 38

CORRELATIONS BETWEEN INTENTION TO BUY A SPECIFIC BRAND (Ii) AND BRAND CHOICE

	I_1	I_2	I_3	I_4	I_5	I_6	I_7	I_8
Marlboro	.5536	.0410	.3443	-.1041	-.0434	-.1510	.0625	-.0339
	s=.001	s=.283	s=.001	s=.072	s=.272	s=.017	s=.191	s=.318
Marlboro Lights	.0262	.3903	-.0556	.1835	-.2371	-.1494	-.2464	-.1297
	s=.357	s=.001	s=.218	s=.005	s=.001	s=.018	s=.001	s=.034
Winston	-.0073	-.0908	.3053	.0529	-.1611	-.2051	-.1857	-.1765
	s=.460	s=.102	s=.001	s=.230	s=.012	s=.002	s=.004	s=.006
Winston Lights	.0292	.2432	.1733	.4726	-.1105	-.0756	-.1013	-.0458
	s=.342	s=.001	s=.007	s=.001	s=.061	s=.145	s=.078	s=.261
Salem	-.2349	-.2220	-.2343	-.2216	.2442	.0627	-.0186	-.0533
	s=.001	s=.001	s=.001	s=.001	s=.001	s=.190	s=.397	s=.228
Salem Lights	-.2994	-.2432	-.3114	-.1915	.1827	.4858	-.0352	.0692
	s=.001	s=.001	s=.001	s=.003	s=.005	s=.001	s=.311	s=.166
Kool	-.1873	-.1712	-.2020	-.2016	.1421	-.0235	.5456	.0282
	s=.004	s=.008	s=.002	s=.002	s=.023	s=.371	s=.001	s=.347
Newport	-.1285	-.0370	-.1328	-.0028	.0122	.0683	-.0388	.3540
	s=.036	s=.302	s=.031	s=.484	s=.432	s=.169	s=.294	s=.001

TABLE 39

CORRELATIONS BETWEEN NORMATIVE COMPLIANCE (NC) AND INTENTION TO BUY A SPECIFIC BRAND (Ii)

	I_1	I_2	I_3	I_4	I_5	I_6	I_7	I_8
NC	.2179	.2444	.1962	.2850	.0489	.1143	.0940	.1619
	s=.001	s=.001	s=.003	s=.001	s=.247	s=.054	s=.094	s=.011

I_1 = Intention to buy Marlboro

I_2 = Intention to buy Marlboro Lights

I_3 = Intention to buy Winston

I_4 = Intention to buy Winston Lights

I_5 = Intention to buy Salem

I_6 = Intention to buy Salem Lights

I_7 = Intention to buy Kool

I_8 = Intention to buy Newport

TABLE 40

CORRELATIONS BETWEEN NORMATIVE COMPLIANCE

AND ATTITUDE TOWARD BRANDS

	AF_1	AF_2	AF_3	AF_4	AF_5	AF_6	AF_7	AF_8
NC_3	.0385	.1472	.0329	.1596	-.001	.0200	.0774	.1550

TABLE 41

CORRELATIONS BETWEEN NORMATIVE COMPLIANCE (NC)

AND INDIVIDUAL PERSONALITY TRAITS

	AC	AU	AG	AF	CNG	DO	SE	SR
NC	.0010	-.0696	-.3009	-.0587	-.1800	-.1363	-.0067	-.0302
	s=.494	s=.165	s=.001	s=.206	s=.006	s=.028	s=.463	s=.336

AC = Achievement

AU = Autonomy

AG = Aggression

AF = Affiliation

CNG = Change

DO = Dominance

SE = Sentience

SR = Social Recognition

TABLE 42

CORRELATION BETWEEN EVALUATIVE CRITERION A_1 (DISTINCTIVE FLAVOR) AND BELIEF THAT THE BRANDS SATISFY THAT CRITERION (Bj)

	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}
A_1	.0139	.1005	.0407	.0283	-.0272	-.0217	-.1975	-.0481
	s=.423	s=.079	s=.285	s=.346	s=.352	s=.381	s=.003	s=.250

B_{11} = Belief that Marlboro satisfies the distinctive flavor criterion.

B_{12} = Belief that Marlboro Lights satisfies the distinctive flavor criterion.

B_{13} = Belief that Winston satisfies the distinctive flavor criterion.

B_{14} = Belief that Winston Lights satisfies the distinctive flavor criterion.

B_{15} = Belief that Salem satisfies the distinctive flavor criterion.

B_{16} = Belief that Salem Lights satisfies the distinctive flavor criterion.

B_{17} = Belief that Kool satisfies the distinctive flavor criterion.

B_{18} = Belief that Newport satisfies the distinctive flavor criterion.

TABLE 43

CORRELATION BETWEEN EVALUATIVE CRITERION A_2 (LOW TAR AND NICOTINE CONTENT) AND BELIEF THAT THE BRAND SATISFY THAT CRITERION (B_2j)

	B_{21}	B_{22}	B_{23}	B_{24}	B_{25}	B_{26}	B_{27}	B_{28}
A_2	.0028	-.0084	-.0023	-.0098	.0721	-.0846	-.0678	-.0928
	s=.375	s=.453	s=.487	s=.446	s=.156	s=.118	s=.171	s=.097

B_{21} = Belief that Marlboro satisfies the low tar and nicotine content criterion.

B_{22} = Belief that Marlboro Lights satisfies the low tar and nicotine content criterion.

B_{23} = Belief that Winston satisfies the low tar and nicotine content criterion.

B_{24} = Belief that Winston Lights satisfies the low tar and nicotine content criterion.

B_{25} = Belief that Salem satisfies the low tar and nicotine content criterion.

B_{26} = Belief that Salem Lights satisfies the low tar and nicotine content criterion.

B_{27} = Belief that Kool satisfies the low tar and nicotine content criterion.

B_{28} = Belief that Newport satisfies the low tar and nicotine content criterion.

TABLE 44

CORRELATION BETWEEN EVALUATIVE CRITERION A_3 (FULL RICH TASTE) AND BELIEF THAT THE BRAND SATISFY THAT CRITERION (B_3j)

	B_{31}	B_{32}	B_{33}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}
A_3	-.0466	.1568	.0496	.0232	-.0231	.0450	-.1282	-.0847
	s=.257	s=.014	s=.244	s=.373	s=.373	s=.264	s=.036	s=.118

B_{31} = Belief that Marlboro satisfies the full rich taste criterion.

B_{32} = Belief that Marlboro Lights satisfies the full rich taste criterion.

B_{33} = Belief that Winston satisfies the full rich taste criterion.

B_{34} = Belief that Winston Lights satisfies the full rich taste criterion.

B_{35} = Belief that Salem satisfies the full rich taste criterion.

B_{36} = Belief that Salem Lights satisfies the full rich taste criterion.

B_{37} = Belief that Kool satisfies the full rich taste criterion.

B_{38} = Belief that Newport satisfies the full rich taste criterion.

TABLE 45

CORRELATION BETWEEN EVALUATIVE CRITERION A_4 (STRONG SMOKE) AND BELIEF THAT THE BRAND SATISFY THAT CRITERION (B_4j)

	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}
A_4	.0714	.0163	.0461	.0124	.0436	-.1925	.0048	.0426
	s=.159	s=.410	s=.260	s=.431	s=.271	s=.003	s=.473	s=.275

B_{41} = Belief that Marlboro satisfies the strong smoke criterion.

B_{42} = Belief that Marlboro Lights satisfies the strong smoke criterion.

B_{43} = Belief that Winston satisfies the strong smoke criterion.

B_{44} = Belief that Winston Lights satisfies the strong smoke criterion.

B_{45} = Belief that Salem satisfies the strong smoke criterion.

B_{46} = Belief that Salem Lights satisfies the strong smoke criterion.

B_{47} = Belief that Kool satisfies the strong smoke criterion.

B_{48} = Belief that Newport satisfies the strong smoke criterion.

TABLE 46

CORRELATION BETWEEN EVALUATIVE CRITERION A_5 (DRAWS EASILY) AND BELIEF THAT THE BRAND SATISFY THAT CRITERION (B_5j)

	B_{51}	B_{52}	B_{53}	B_{54}	B_{55}	B_{56}	B_{57}	B_{58}
A_5	.1215	.2075	.1641	.2008	.2030	.2049	.1470	.2175
	s=.044	s=.002	s=.010	s=.002	s=.002	s=.002	s=.019	s=.001

B_{51} = Belief that Marlboro satisfies the draws easily criterion.

B_{52} = Belief that Marlboro Lights satisfies the draws easily criterion.

B_{53} = Belief that Winston satisfies the draws easily criterion.

B_{54} = Belief that Winston Lights satisfies the draws easily criterion.

B_{55} = Belief that Salem satisfies the draws easily criterion.

B_{56} = Belief that Salem Lights satisfies the draws easily criterion.

B_{57} = Belief that Kool satisfies the draws easily criterion.

B_{58} = Belief that Newport satisfies the draws easily criterion.

TABLE 47

CORRELATION BETWEEN EVALUATIVE CRITERION A_6 (PROJECTS A MATURE IMAGE) AND BELIEF THAT THE BRAND SATISFY THAT CRITERION (B_6j)

	B_{61}	B_{62}	B_{63}	B_{64}	B_{65}	B_{66}	B_{67}	B_{68}
A_6	-.3215	-.3199	-.2744	-.3420	-.4017	-.3675	-.3065	-.3683
	s=.001	s=.001	s=.001	s=.001	s=.001	s=.001	s=.001	s=.001

B_{61} = Belief that Marlboro satisfies the projects a mature image criterion.

B_{62} = Belief that Marlboro Lights satisfies the projects a mature image criterion.

B_{63} = Belief that Winston satisfies the projects a mature image criterion.

B_{64} = Belief that Winston Lights satisfies the projects a mature image criterion.

B_{65} = Belief that Salem satisfies the projects a mature image criterion.

B_{66} = Belief that Salem Lights satisfies the projects a mature image criterion.

B_{67} = Belief that Kool satisfies the projects a mature image criterion.

B_{68} = Belief that Newport satisfies the projects a mature image criterion.

TABLE 48

CORRELATION BETWEEN ATTITUDE TOWARD MARLBORO (AF_1) AND BELIEF THAT MARLBORO SATISFIES THE EVALUATIVE CRITERION (B_{i1}) (n=198)

	B_{11}	B_{21}	B_{31}	B_{41}	B_{51}	B_{61}
AF_1	.3204	-.0699	.3744	-.0565	.1856	.0770
	s=.001	s=.164	s=.001	s=.214	s=.004	s=.141

B_{11} = Belief that Marlboro satisfies the criterion of distinctive flavor

B_{21} = Belief that Marlboro satisfies the criterion of low tar and nicotine content

B_{31} = Belief that Marlboro satisfies the criterion of full rich taste

B_{41} = Belief that Marlboro satisfies the criterion of strong smoke

B_{51} = Belief that Marlboro satisfies the criterion of draws easily

B_{61} = Belief that Marlboro satisfies the criterion of projects a mature image

TABLE 49

CORRELATION BETWEEN ATTITUDES TOWARD MARLBORO LIGHTS (AF_2) AND BELIEFS THAT MARLBORO LIGHTS SATISIFES THE EVALUATIVE CRITERION (B_{i2}) (n=198)

	B_{12}	B_{22}	B_{32}	B_{42}	B_{52}	B_{62}
AF_2	.2365	.0833	.2669	.1332	.0958	.1571
	s=.001	s=.122	s=.001	s=.031	s=.090	s=.014

B_{12} = Belief that Marlboro Lights satisfy the criterion of distinctive flavor

B_{22} = Belief that Marlboro Lights satisfy the criterion of low tar and nicotine content

B_{32} = Belief that Marlboro Lights satisfy the criterion of full rich taste

B_{42} = Belief that Marlboro Lights satisfy the criterion of strong smoke

B_{52} = Belief that Marlboro Lights satisfy the criterion of draws easily

B_{62} = Belief that Marlboro Lights satisfy the criterion of projects a mature image

TABLE 50

CORRELATIONS BETWEEN ATTITUDES TOWARD WINSTONS (AF_3) AND BELIEF THAT WINSTONS SATISFY THE EVALUATIVE CRITERIA (B_{i3}) (n=198)

	B_{13}	B_{23}	B_{33}	B_{43}	B_{53}	B_{63}
AF_3	.2440	.1316	.3401	.0009	.1253	.0494
	s=.001	s=.032	s=.001	s=.495	s=.039	s=.245

B_{13} = Belief that Winstons satisfy the criterion of distinctive flavor

B_{23} = Belief that Winstons satisfy the criterion of low tar and nicotine content

B_{33} = Belief that Winstons satisfy the criterion of full rich taste

B_{43} = Belief that Winstons satisfy the criterion of strong smoke

B_{53} = Belief that Winstons satisfy the criterion of draws easily

B_{63} = Belief that Winstons satisfy the criterion of projects a mature image

TABLE 51

CORRELATIONS BETWEEN ATTITUDES TOWARD WINSTON LIGHTS (AF_4) AND BELIEFS THAT WINSTON LIGHTS SATISFY THE EVALUATIVE CRITERIA (B_{i4}) (n=198)

	B_{14}	B_{24}	B_{34}	B_{44}	B_{54}	B_{64}
AF_4	.2694	.1801	.3203	.0617	.0905	.2524
	s=.001	s=.006	s=.001	s=.194	s=.103	s=.001

B_{14} = Belief that Winston Lights satisfy the criterion of distinctive flavor

B_{24} = Belief that Winston Lights satisfy the criterion of low tar and nicotine content

B_{34} = Belief that Winston Lights satisfy the criterion of full rich taste

B_{44} = Belief that Winston Lights satisfy the criterion of strong smoke

B_{54} = Belief that Winston Lights satisfy the criterion of draws easily

B_{64} = Belief that Winston Lights satisfy the criterion of projects a mature image

TABLE 52

CORRELATIONS BETWEEN ATTITUDES TOWARD SALEMS (AF_5) AND BELIEFS THAT SALEM SATISFIES THE EVALUATIVE CRITERIA (B_{i5}) (n=198)

	B_{15}	B_{25}	B_{35}	B_{45}	B_{55}	B_{65}
AF_5	.0851	-.2066	.2254	.0676	.1103	.0999
	s=.116	s=.002	s=.001	s=.172	s=.061	s=.081

B_{15} = Belief that Salems satisfy the criterion of distinctive flavor

B_{25} = Belief that Salems satisfy the criterion of low tar and nicotine content

B_{35} = Belief that Salems satisfy the criterion of full rich taste

B_{45} = Belief that Salems satisfy the criterion of strong smoke

B_{55} = Belief that Salems satisfy the criterion of draws easily

B_{65} = Belief that Salems satisfy the criterion of projects a mature image

TABLE 53

CORRELATIONS BETWEEN ATTITUDES TOWARD SALEM LIGHTS (AF_6) AND BELIEFS THAT SALEM LIGHTS SATISFY THE EVALUATIVE CRITERIA (B_{i6}) (n=198)

	B_{16}	B_{26}	B_{36}	B_{46}	B_{56}	B_{66}
AF_6	.1315	-.0051	.1987	-.1403	.0100	.1901
	s=.032	s=.472	s=.003	s=.024	s=.444	s=.004

B_{16} = Belief that Salem Lights satisfy the criterion of distinctive flavor

B_{26} = Belief that Salem Lights satisfy the criterion of low tar and nicotine content

B_{36} = Belief that Salem Lights satisfy the criterion of full rich taste

B_{46} = Belief that Salem Lights satisfy the criterion of strong smoke

B_{56} = Belief that Salem Lights satisfy the criterion of draws easily

B_{66} = Belief that Salem Lights satisfy the criterion of projects a mature image

TABLE 54

CORRELATION BETWEEN ATTITUDES TOWARD KOOLS (AF_7) AND BELIEFS THAT KOOLS SATISFY THE EVALUATIVE CRITERIA (B_{i7}) (n=198)

	B_{17}	B_{27}	B_{37}	B_{47}	B_{57}	B_{67}
AF_7	.1373	-.1174	.1851	-.0382	.1565	.0270
	s=.027	s=.050	s=.005	s=.297	s=.014	s=.353

B_{17} = Belief that Kools satisfy the criterion of distinctive flavor

B_{27} = Belief that Kools satisfy the criterion of low tar and nicotine content

B_{37} = Belief that Kools satisfy the criterion of full rich taste

B_{47} = Belief that Kools satisfy the criterion of strong smoke

B_{57} = Belief that Kools satisfy the criterion of draws easily

B_{67} = Belief that Kools satisfy the criterion of projects a mature image

TABLE 55

CORRELATIONS BETWEEN ATTITUDES TOWARD NEWPORTS (AF_8) AND BELIEFS THAT NEWPORTS SATISFY THE EVALUATIVE CRITERIA (B_{i8}) (n=198)

	B_{18}	B_{28}	B_{38}	B_{48}	B_{58}	B_{68}
AF_8	.2271	-.1023	.2885	.0089	.1180	.1044
	s=.001	s=.076	s=.001	s=.450	s=.049	s=.072

B_{18} = Belief that Newports satisfy the criterion of distinctive flavor

B_{28} = Belief that Newports satisfy the criterion of low tar and nicotine content

B_{38} = Belief that Newports satisfy the criterion of full rich taste

B_{48} = Belief that Newports satisfy the criterion of strong smoke

B_{58} = Belief that Newports satisfy the criterion of draws easily

B_{68} = Belief that Newports satisfy the criterion of projects a mature image

TABLE 56

CORRELATIONS BETWEEN PERSONALITY TRAITS AND

INTENTION TO BUY A SPECIFIC BRAND

	I_1	I_2	I_3	I_4	I_5	I_6	I_7	I_8
AC	-.0571	-.0227	-.0403	.0302	.1277	.1435	.0695	.1342
	s=.212	s=.376	s=.287	s=.336	s=.037	s=.022	s=.165	s=.030
AF	-.2040	-.1612	-.0158	-.0890	-.1264	-.0064	-.2228	-.0903
	s=.002	s=.012	s=.413	s=.106	s=.038	s=.464	s=.001	s=.103
AG	-.1813	-.0531	-.1555	-.1136	-.1294	-.0580	-.1439	-.1641
	s=.005	s=.229	s=.014	s=.056	s=.035	s=.208	s=.022	s=.010
AU	.1169	.0100	.0679	-.0476	.1298	-.0510	.1583	-.0119
	s=.050	s=.444	s=.171	s=.253	s=.034	s=.238	s=.013	s=.434
CNG	-.1352	-.1724	-.0688	-.0655	-.0129	-.0688	-.0185	-.0774
	s=.029	s=.155	s=.168	s=.180	s=.428	s=.168	s=.398	s=.139
DO	-.1616	-.0291	-.0105	-.0431	-.0218	.0587	-.1034	-.0048
	s=.011	s=.342	s=.441	s=.273	s=.380	s=.206	s=.073	s=.473
SE	.0780	-.0024	.1141	-.0360	.0592	-.0397	.0999	-.0134

TABLE 56--Continued

	I_1	I_2	I_3	I_4	I_5	I_6	I_7	I_8
	s=.137	s=.486	s=.055	s=.307	s=.204	s=.289	s=.081	s=.426
SR	.0347	.0268	.0442	-.0235	.1001	.0053	.0280	.1047
	s=.314	s=.354	s=.268	s=.371	s=.080	s=.471	s=.348	s=.071

TABLE 57

CORRELATIONS BETWEEN PERSONALITY TRAITS

AND BRAND CHOICE

	AC	AF	AG	AU	CNG	DO	SE	SR
Marlboro	.1666	.1809	.1625	-.2800	.1068	.0781	-.0130	-.0209
	s=.009	s=.005	s=.011	s=.001	s=.067	s=.137	s=.428	s=.385
Marlboro Lights	.0259	-.1037	-.1512	.0324	.0316	-.0318	.1004	.0829
	s=.359	s=.073	s=.017	s=.325	s=.329	s=.328	s=.080	s=.123
Winston	.0481	-.1753	-.1857	.1217	-.1099	.0368	-.0650	-.0177
	s=.250	s=.007	s=.004	s=.011	s=.062	s=.304	s=.182	s=.402
Winston Lights	-.1887	.0642	.0810	.1358	-.0098	-.0480	-.0332	.0533
	s=.004	s=.184	s=.128	s=.028	s=.445	s=.251	s=.321	s=.228
Salem	-.1842	-.1614	.0509	-.1918	-.3189	-.1151	-.1595	-.1325
	s=.004	s=.012	s=.238	s=.003	s=.001	s=.053	s=.012	s=.031
Salem Lights	-.0973	-.0711	-.1178	.1358	.0779	-.0789	.1655	.0297
	s=.086	s=.160	s=.049	s=.028	s=.138	s=.132	s=.010	s=.339
Kool	.0918	.1941	.1108	.0133	.0625	.2193	-.1076	.0952
	s=.099	s=.003	s=.060	s=.427	s=.191	s=.001	s=.066	s=.091
Newport	.0915	-.0389	-.0309	.1008	.0634	-.0831	.0748	-.1161
	s=.100	s=.293	s=.333	s=.079	s=.188	s=.122	s=.147	s=.052

BIBLIOGRAPHY

BIBLIOGRAPHY

Alpert, Mark I. "Personality and the Determinants of Product Choice." Journal of Marketing Research 9 (February 1922): 89-92.

Advertising Research Foundation, Inc. Are There Consumer Types? New York: Advertising Research Foundation, Inc., 1964.

Asher, Herbert B. Causal Modeling. Beverly Hills: Sage Publications, 1976.

Bell, Gerald D. "Self-Confidence and Persuasion in Car Buying." Journal of Marketing Research 4 (February 1967): 46-52.

Boone, L. E. "The Search for the Consumer Innovator." Journal of Business 43 (April 1970): 135-140.

Borgatta, Edgar F., and Lambert, William W. Handbook of Personality Theory and Research. Chicago: Rand McNally and Company, 1968.

Brody, Robert P., and Cunningham, Scott M. "Personality Variables and the Consumer Decision Process." Journal of Marketing Research 5 (February 1968): 50-57.

Carman, James M. "Correlates of Brand Loyalty: Some Positive Results." Journal of Marketing Research 7 (February 1970): 67-76.

Claycamp, Henry J. "Characteristics of Owners of Thrift Deposits in Commercial Banks and Savings and Loan Associations." Journal of Marketing Research 2 (May 1965): 163-170.

Cohen, Joel B. "An Interpersonal Orientation to the Study of Consumer Behavior." Journal of Marketing Research 4 (August 1967): 270-278.

Donnelly, James H. "Social Character and Acceptance of New Products." Journal of Marketing Research 7 (February 1970): 111-113.

Edwards, Allen L. The Measurement of Personality Traits by Scales and Inventories. New York: Holt, Rinehart and Winston, Inc., 1970.

Engel, James F.; Blackwell, Roger D.; and Kollat, David T. Consumer Behavior. New York: Holt, Rinehart and Winston, Inc., 1978.

Evans, Frank B. "Psychological and Objective Factors in the Prediction of Brand Choice." Journal of Business 32 (October 1959): 340-369.

Evans, Frank B. "You Still Can't Tell a Ford Owner from a Chevrolet Owner." Journal of Business 34 (January 1961): 67-73.

Fishbein, Martin. Readings in Attitude Theory and Measurement. New York: Wiley and Sons, Inc., 1967.

Frank, Ronald E.; Massey, William F.; and Lodahl, Thomas M. "Purchasing Behavior and Personal Attributes." Journal of Advertising Research, Vol. 9, No. 4 15-24.

Fry, Joseph N. "Personality Variables and Cigarette Brand Choice." Journal of Marketing Research, 8 (August 1970) 298-304.

Glass, Gene V. and Stanley, Julian C. Statistical Methods In Education and Psychology. New Jersey: Prentice-Hall, Inc., 1970.

Greeno, Daniel W.; Sommers, Montrose S.; and Kernan, Jerome B. "Personality and Implicit Behavior Patterns." Journal of Marketing Research, 10 (February, 1973), 63-69.

Hamm, Curtis B. and Cundiff, Edward W. "Self-Actualization and Product Perception." Journal of Marketing Research, 6 (November, 1969), 470-472

Horton, Raymond L. "Some Relationships Between Personality and Consumer Decision Making." Journal of Marketing Research, 16 (May, 1979), 233-246.

Hovland, Carl I. and Janis, Irving L. Personality and Persuasibility. New Haven: Yale University Press, 1959.

Jacobson, Eugene and Kossoff, Jerome. "Self-Percept and Consumer Attitudes Toward Small Cars." Journal of Marketing Research, 2 (May, 1965), 146-153.

Kassarjian, Harold H. "Social Character and Differential Preference for Mass Communication." Journal of Marketing Research, 2 (May 1965), 146-153.

Kassarjian, Harold H. "Personality and Consumer Behavior: A Review." Journal of Marketing Research, 8 (November, 1971), 409-418.

Kernan, Jerome B. "Choice Criteria, Decision Behavior and Personality." Journal of Marketing Research, 5 (May 1968), 155-164.

Keuhn, Alfred A. "Demonstration of a Relationship Between Psychological Factors and Brand Choice." Journal of Business, 36 (April, 1963), 237-241.

King, Charles W. and Summers, John O. "Overlap of Opinion Leadership Across Consumer Product Categories." Journal of Marketing Research, 7 (February, 1970), 43-50.

Koponen, A. "Personality Characteristics of Purchases." Journal of Advertising Research, 1 (September, 1960), 6-12.

Li, C. C. Path Analysis - A Primer. California: The Boxwood Press, 1975.

Markin, Rom J. Consumer Behavior: A Lognitive Orientation. New York: Macmillan Publishing Co., Inc., 1974.

Meyers, John G. "Determinants of Private Brand Attitude." Journal of Marketing Research, 4 (February, 1967), 73-81.

Nunnally, Jum C. Psychometric Theory. New York: McGraw Hill Book Company, 1967.

Pennington, Alan L. and Peterson, Robert A. "Interest Patterns and Product Preferences: An Exploratory Analysis." Journal of Marketing Research, 6 (August, 1969), 284-290.

Peary, Arnon. "Heredity, Personality Traits, Product Attitude and Product Consumption - An Exploratory Study." Journal of Marketing Research, 10 (November, 1973), 376-379.

Robertson, Thomas S. and Kennedy, James N. "Prediction of Consumer Innovators: Application of Multiple Determinant Analysis." Journal of Marketing Research 6 (May, 1969), 164-168.

Steiner, Gary A. "Notes on Franklin B. Evans' Psychological and Objective Factors in the Prediction of Brand Choice." Journal of Business, Vol. 34 (January, 1961), 57-60.

Tucker, W. T. and Painter, John J. "Personality and Product Use." Journal of Applied Psychology, 45 (1961), 325-329.

Van de Geer, John P. Introduction to Multivariate Analysis for the Social Sciences. San Francisco: W. H. Freeman and Company, 1971.

Villani, Kathryn E. "Personality/ Lifestyle and Television Viewing Behavior." Journal of Marketing Research, 12 (November 1975), 432-439.

Villani, K. E. A. and Wind, Yoram. "On the Usage of 'Modified' Personality Trait Measures in Consumer Research." Journal of Consumer Research, Vol. 2, (December, 1975), 223-228.

Ward, Scott and Robertson, Thomas S. Consumer Behavior: Theoretical Sources. New Jersey: Prentice-Hall, Inc., 1973.

Westfall, Ralph. "Psychological Factors Predicting Product Choice." Journal of Marketing, 26 (April, 1962), 34-40.

Williams, John D. Path Analysis From a Regression Perspective, The University of North Dakota, 1978.

Winech, Charles. "The Relationship Among Personality Needs, Objective Factors and Brand Choice: A Re-examination." Journal of Business, Vol. 34, (January, 1961), 61-66.

Wolfe, Lee M. Strategies of Path Analysis. Prepared for the meetings of the American Educational Research Association, Toronto, Ontario, March 1978.