IDENTIFICATION AND MODEL FORMULATION

OF PROFESSIONAL SERVICE

ATTRIBUTES

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PREFACE

This study focused on the identification and model formulation of professional service attributes using professional development programs as the primary service category. The concepts of professional service attribute classes and hierarchy was introduced and tested empirically. Attribute structure was reduced and formulated into a more manageable framework for future study. The data of this study was gathered using expert judgment and a mail survey. The responses were evaluated using a number of statistical methods.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Nature of the Problem

The modeling of consumer preferences among multi-attribute alternatives has been of great interest and concern to marketers. This stream of marketing research is based on the premises that consumers value goods and services for the attributes (characteristics) which they possess and that different products are essentially different packages of attributes. This view of products has been employed in applications of multi-attribute models and in recent economic theory (Baumol 1967; Green, Wind, and Jain 1972; Heeler, Okechuku, and Reid 1979; Jain et al. 1979; Lancaster 1966, 1971, 1976; Wilkie and Pessemier 1973).

Historically, the concept of product attributes has been approached intuitively without precise definition as to what a product attribute is or what it is not. Several contrasting streams of product attribute thought have emerged among marketing researchers and economists (Geistfeld, Sproles, and Badenhop 1977). Marketing researchers have implicitly defined product attributes in terms of consumer subjective judgments directed toward specific features possessed by a product as used in multi-attribute attitude models (Wilkie

and Pessemier 1973). This research involves identification
of the choice alternatives and associated attributes, the
estimation of part-worth contributions of each attribute,
and the specification of a representational model to obtain
overall utility of choice alternatives. Attributes have
ranged from such specific purchasing criteria as price and
brand name to more abstract and subjective perceptions of
features such as convenience and safety. From this perspec-
tive, anything that a consumer perceives about a product may
qualify as a product attribute.

A differing stream of thought has emerged among econo-
mists. Lancaster (1966, 1971, 1976) explicitly defines
product characteristics as those properties of a product
which are relevant to consumer choice, quantitative, objec-
tively measurable, and universal. Cowling and Cubbin (1971)
argue that there is a functional relationship between those
services of a product which a consumer demands and the char-
acteristics of a product. Product characteristics produce
what the consumer wants, which implies differing types of
product characteristics: (1) basic objectively measurable
product characteristics and (2) abstractions of those basic
characteristics to higher level performance or service char-
acteristics. Using Cowling and Cubbin's concept of product
characteristics, Maynes (1976) defines product characteris-
tics as only those service characteristics which give rise
to utility. Product features which give rise to utility are
not considered product characteristics. Geistfeld, Sproles,

and Badenhop (1977) define a product characteristic as any
feature of a product which is intrinsic to the product and
which, directly or indirectly, influences a consumer's eval-
uation of a specific product variety. Product variety is a
product-brand-model combination. Their definition excludes
attributes extrinsic to the product variety such as price
and brand name. These elements are not included in the
characteristic domain of the purchase decision and are iden-
tified as a separate set of extrinsic purchasing criteria.
The true product characteristic is based on an identifiable
physical feature or an abstraction of features to the ser-
vice performed for the consumer.

The economic perspective of conceptualizing levels and
classes of product characteristics (attributes) provides a
preliminary unifying theory for viewing consumer goods
attributes. An important question addressed in this study
concerns the relevance of these advances where the products
are more appropriately classified as services or
intangibles.

The development of marketing concepts and models for
service attributes has been sporadic and is weakly linked.
The marketing literature suggests that services marketing in
general has suffered from the influence of marketing ideas
and concepts developed for consumer goods marketing, e.g.,
that the theories of consumer goods marketing can be gener-
alized to other areas, such as services. Shostack (1977)
believes that marketing itself is myopic in having failed to

treat relevant paradigms for the service sector. Gummesson (1978) finds that existing marketing of goods theories have become straight-jackets in developing a marketing theory to provide for the unique features of services. These unique features or special characteristics, according to Tinsley and Lewis (1977) and Zeithami (1981), include the idea that services are intangible, nonstandardized, and inseparable.

The lack of conceptual development is even more pronounced when considering professional services marketing and professional service attributes. Professional services marketing literature is conceptually vague and generally involves recommendations for buying or selling management consulting services. The marketing of medical, legal, dental, educational, or accounting services is scarcely discussed. Research on professional services attributes is very fragmental and generally subsidiary to the primary purposes of most studies. Sarkar and Selah (1974) explored the characteristics of consulting professional engineers with respect to the influence these attributes have upon the clients' hiring process. The study showed that considerable differences exist between buyers' and sellers' perceptions of the relative importance of attributes for hiring. Ratchford and Andreasen (1972) concluded that the physician selection process is an important, complex, subjective decision about which little information is available. Feldman and Spencer (1975) and Kuehl and Ford (1977) concluded that personal information sources seem to dominate the selection

personal information sources seem to dominate the selection process for professional services. Smith and Meyer (1980) studied the information needs of consumers during their attorney selection process and found a considerable difference between the attributes actually used in the selection process and the attributes consumers think should be used.

Given the confusion surrounding services attributes and the paucity of conceptual and empirical work on professional services in particular, an exploratory study of professional services attributes was undertaken. Borrowing from the research on goods characteristics, this study focuses on the identification of determinant professional services attributes and the analysis of different levels and classes of attributes which have the greatest potential significance to buyer decision making. An opportunity to examine professional services attributes was available through the Division of University Extension at Oklahoma State University. The University Extension division is responsible for delivering professional development (continuing education) programs to consumer and industrial buyers. These services are promoted through both the distribution of direct mail brochures and personal contacts. As such, the service contains a complex array of attributes representative of many professional services and provides an appropriate environment for the exploratory analysis.

Purpose of the Study

The purpose of this dissertation was to present conceptually and measure empirically determinant professional service attributes. This investigation addressed the usefulness of a hierarchy of attributes, and two attribute levels were specified. Following the economics viewpoint of goods characteristics, basic identifiable physical features are classified as low level intrinsic attributes. Abstractions of those basic characteristics to higher levels of performance or service characteristics are classified as high level intrinsic attributes. An evaluation was also conducted to examine the relationship between the intrinsic attributes and attributes extrinsic to the professional service. Extrinsic attributes are those elements or purchasing criteria such as supplier characteristics. Appropriate program experience, employment, and demographic variables were also evaluated. The results of this research provided preference model formulation implications for professional services attributes and marketing strategy implications for the seller of professional development programs.

Accomplishment of the major purpose implies the accomplishment of important objectives. These objectives are to

1. Generate a comprehensive listing of attributes for a professional service that includes high level intrinsic attributes, low level

intrinsic attributes, and extrinsic purchasing
attributes.

2. Determine what attributes buyers consider
   important in selecting a professional service
   and what attributes buyers feel affect the
   quality of the service.

3. Evaluate the perceived difference in importance
   between high level intrinsic, low level intrin-
   sic, and extrinsic purchasing attributes.

4. Evaluate the relationship between high level
   and low level intrinsic attributes and
   between intrinsic and extrinsic attributes.

5. Determine whether the complete attribute
   listing can be reduced to a smaller number
   of determinant factors for model formulation.

6. Examine respondents' program experience,
   employment, and demographic variables for
   similarities with respondents' attribute
   evaluations.

General Overview of the Study

This study was concerned with developing a listing of
attributes for professional development programs and measur-
ing and analyzing the significance of these attributes to
buyer decision making. The attributes were generated from
individuals involved in supplying professional development
programs at Oklahoma State University and previous buyers of

professional development programs. The listing of service

attributes derived from these sources was classified accord-

ing to high and low level intrinsic and extrinsic purchasing

attributes. From this analysis, a survey instrument was

developed to collect the data for answering the remaining

research questions. This survey instrument was mailed to a

sample of past buyers of professional development programs

offered by the College of Business Administration's Office

of Business Extension at Oklahoma State University. The

size of the sample was based on available resources, antici-

pated response, and analytical requirements. Various corre-

lations and multivariate analysis methods were employed to

explore the data.

Limits of the Study

An exploratory study of professional services attri-

butes was conducted to investigate buyer preferences for

professional development programs. The data collected by

the survey instrument included perceptual and attitudinal

information regarding the salience of factors related to

purchase behavior. An inherent assumption is that respon-

dents can accurately identify the influence of product

attributes that impacted their decision process and that the

survey instrument can adequately measure that response.

With limited time and financial resources, this study

used buyers of professional development programs from

Oklahoma State University as the population frame, thus

limiting generalizations of the results to a broader popula-
tion.   Caution should also be used in generalizing the
results to other professional service categories.

Plan of Action

Chapter II presents a review of the conceptual and
empirical work in service marketing and the marketing of
professional services.   In addition, this review includes a
literature review of theory development and measurement of
product attributes.   Chapter III presents the research
methodology.   Chapter IV discusses the data and the analysis
of the study results, and Chapter V contains the summary,
conclusions, and implications for further research.

CHAPTER II

LITERATURE REVIEW

The purpose of this chapter is to present a review of pertinent literature to establish a foundation for the current research. Three areas will be covered: (1) the marketing of services, (2) the marketing of professional services, and (3) the theory and measurement of product and service attributes.

The Marketing of Services

When consumer or organizational buying behavior is discussed, the marketing of goods is generally considered. Little attention has been given to the problems involved in marketing services even though a significant number of services are marketed in the consumer and organizational sectors (Advertising Age 1979; Bateson 1979). From a search of the literature, service marketing has suffered from the influence of marketing theories developed for consumer and industrial goods marketing. Marketing literature adheres to the idea that the theories of goods marketing can be generalized to other areas, such as services. Merely adopting product (goods) marketing's labels does not resolve the question of whether product marketing can be overlaid

on service business (Shostack 1977). Concepts and models for marketing mix planning today do not seem applicable to companies in service industries (Gronroos 1979). The "product" of service firms is extremely complicated, and the product development process involves elements normally not considered. The resources influencing the accessibility of the service and the personal market communication are integrated parts of the service, as well as possible auxiliary services. Wyckham, Fitzroy, and Mandry (1975) question the applicability of the separation of the simple product and service taxonomy since the service product classification scheme differentiates both on product and service attributes and attributes of the market. Tinsley and Lewis (1977) point out that services have special attributes which require a reformation of the elements of the marketing mix.

In summary, confusion surrounding services marketing is attributed to three general areas: (1) the questionable services concept, (2) the opinion that everybody is in services, and (3) the view that marketing research helping companies in goods industries would help service firms equally well. The service concept is confusing because no distinction is made between services as objects of marketing and services as marketing variables (Johnson 1970). Marketing of services concerns services in the first sense of the concept. The service is the object of marketing when the service is the core of the marketing offering. When services are treated as a means of competition, the core of the

selling proposition is a physical good. Therefore, there are either goods--with or without service support--or services which make it possible to use goods or which are accompanied by goods.

Additional confusion exists because it has been popular to consider all marketing to be services marketing (Levitt 1972). Consumers are not buying goods or services, but the value satisfaction of offerings. There are no goods industries or service industries, but industries with varying degrees of service components; thus, everybody is in service.

Finally, it is frequently assumed that the concepts and models used in goods marketing are equally well applied to services marketing. However, the planning instrument developed to assist in solving the problems of goods industries may well not be applicable when planning services marketing (Shostack 1977).

Services Attributes

A traditional definition of "marketed services" provided by Judd (1964) is

> . . . a market transaction by an enterprise or an entrepreneur where the object of the market transaction is other than the transfer of ownership [and title, if any] of a tangible commodity (p. 69).

Judd suggests his definition has the defect of any definition by exclusion in that, from the definition itself, nothing can be learned about what are the essential attributes of a service. Other variations of the formal

definition of services are provided by Baranoff and Donnelly (1970), Johnson (1970), Levitt (1967), Rathmell (1974), Regan (1963), and Shostack (1977).

One of the first efforts to distinguish services attributes was provided by Regan (1963). In this classic article, "The Service Revolution," he identifies four unique service attributes: intangibility, perishability, hetero-geneity, and ubiquity. These four unique features make the comprehension of services difficult. In addition to these four features, Baranoff and Donnelly (1970) identified other distinguishing features of services that lead to difficult problems in determining marketing mix ingredients. These included fluctuating demand, highly differentiated marketing systems, lack of need for logistics functions, and client relationships. Although Johnson (1970) agrees with these differences between goods and services, he believes the key feature all services have in common is intangibility. He suggests that several problems result from the intangibility of services: (1) services are difficult to demonstrate, display, or illustrate in advertisements; (2) buyers are usually unable to judge quality and value prior to purchase [also discussed in Fisk (1981) and Zeithami (1981)]; and (3) production and consumption of services frequently occur simultaneously and the separability of a service and its producer is difficult.

Rathmell (1974) suggests that a service can be distin-guished from a good by the nature of the product's utility.

In pure goods, the utility lies in the physical attributes of the product. For a service the utility comes from the nature of the action or performance of the product. Applying this test, there are a few pure goods and pure services. Most products lie on a continuum between pure goods and pure services. Most goods are a complex of goods and facilitating services, and most services are a complex of services and facilitating goods.

Judd (1968) discussed the similarities and differences in product and service retailing. In product and service development he found differences in the lack of legal protection for service ideas, the limited value of the brand or trademark in conferring market control, and the lack of promotional possibilities through packaging and labeling. In sales effort there are differences in the degree to which some media are used, the obvious lack of use of displays, and the lack of service product differentiation. In the area of price management, service marketing differs from product retailing in the absence of trade discounts, quantity discounts, and geographical pricing methods.

Gronroos (1978) discusses marketing planning and concludes that services attributes differ from goods and cannot be treated like goods in a marketing planning context. Services are intangible and cannot be evaluated as such. They must be transformed to concrete offerings which can be evaluated and compared to those of the competitors. If the firm does not manage this process, the customer will in an

unguided manner pick out tangible attributes which are the
service in the customer's mind. The product of service
firms is extremely complicated; therefore, the product
development process involves elements normally not consid-
ered. The resources influencing the accessibility of the
service and their personal market communication are inte-
grated parts of the service, as well as possible auxiliary
services.

Shostack (1977) suggests it is wrong to imply that
services are just like products "except for intangibility."
She believes that intangibility is not a modifier; it is a
state. Marketing offers no way to treat intangibility as
the core element it is, nor does marketing offer usable
tools for managing, altering, or controlling this amorphous
core. To expand marketing's conceptual boundaries requires
a framework which accommodates intangibility instead of
denying it. This broader concept postulates that market
entities are, in reality, combinations of discrete elements
which are linked together in a molecule-like whole. Ele-
ments can be either tangible or intangible; the entity may
have either a tangible or intanglible nucleus. But, the
whole can only be described as having a certain dominance.
The molecular concept makes it possible to describe and
array market entities along a continuum, according to the
weight of the mix of elements that comprise them. Teaching
services might be at one end of such a scale, intangible or
I-dominant, while salt might represent the other extreme,

tangible or T-dominant. The greater the weight of intangible elements in a market entity, the greater will be the divergence from product marketing in priorities and approach. For example, since a service (air travel) exists only during the time in which it is rendered, the entity's true reality must be defined experientially. The crux of service-knowledge is the description of the major consensus realities that define the service entity to various market segments.

Shostack (1977) concludes that service marketing concentrate on the strategy of enhancing and differentiating realities through manipulation of tangible clues. Product marketing tends to give first emphasis to creating abstract associations. The management of evidence comes first for service marketers, because service reality is arrived at by the consumer mostly through a process of deduction, based on the total impression that the evidence creates. Management of the physical environment should be one of a service marketer's highest priorities. Levitt (1981) concurs with this contention. The degree to which the marketer will focus on either tangible evidence or intangible abstractions for market positioning will be found to be inversely related to the entity's dominance. Not only is the environment important, but service marketers must manage the business evidence. Effective media representations of intangibles are a function of establishing non-abstract manifestations of this evidence. George and Berry (1981) propose that a key guideline in advertising services is to provide tangible clues.

There are also those who disagree with the need for separate treatment for services. Cooke (1970) suggests that all efforts to distinguish between products and services should be discarded in analyzing markets for services. The definitional difference between service markets and product markets has little or no utility in the process of market analysis. The problem of analyzing markets for services is not conceptually or logically different from the problem of analyzing markets for products. Insofar as market analysis is concerned, the consequential difference between service and product markets rests in the fact that effective differentiation of the marketing offer is significantly more difficult to obtain in service markets. This phenomenon is related centrally to the fact that services are not purchased by customers but by clients. The use of services has an experiential character in contrast to the possessional attribute of products. A service is ultimately an interaction between people. Marketing success or failure in a service industry will ordinarily be determined by the quality of that interaction.

In conjunction with Cooke (1970), Wyckham, Fitzroy, and Mandry (1975) contend the simple taxonomy (product versus service) is difficult to sustain and is likely to be dysfunctional. They believe that services marketing need not be different from goods marketing. Four features, heterogeneity, intangibility, inseparability and perishability, which purport to distinguish services in terms of marketing,

appear to be based on a production orientation. To conclude that heterogeneity of services distinguishes services from products ignores consumer perceptions. Even though a manufacturer may produce uniform products, this uniformity does not necessarily result in common perceptions. It can be argued that a product is different for every consumer. Consumers will evaluate a product whether or not it has physical properties. The evaluation can be just as difficult for products as services. In addition, they contend that inseparability (the simultaneous nature of the production and consumption of services) is contradicted by the broad and indirect distribution of many services and that perishability is a characteristic of both services and products.

As presented, an important question addressed in much of the literature centers on the differences and similarities between the marketing of goods and services. While the consensus seems to favor the concept that services are different from goods because of such features as intangibility, perishability, heterogeneity, and inseparability, Brown and Fern (1981) recently offered an appealing perspective to this discussion. They contend that researchers have examined the differences between goods and services from the viewpoint of the core marketing offering and that a more appropriate perspective might be from the the total market offering. The total market offering is the aggregate of all of the benefits the customer receives as a result of the core offering plus all of the values added by members of the marketing channel.

Classification of Services

Another area that has attracted considerable attention in the literature is classification schemes for categorizing services. Several of these schemes are reviewed to help put the field of professional services in perspective.

Marketers are still searching for classification schemes that can be applied across the entire array of services. Various classification attempts have been prepared. Judd (1964) suggests three categories: (1) rented goods services, (2) owned goods services, and (3) non-goods services. Rathmell (1974) classifies services by (1) type of seller, (2) type of buyer, (3) buying motives, (4) buying practice, and (5) degree of regulation. Shostack (1977) proposes that products be arrayed along a continuum from pure goods to pure services, according to the proportion of physical goods and intangible services each product package contains. Hill (1977) proposes the following dichotomous properties as useful descriptors:

1. Services affecting persons versus those affecting goods.
2. Permanent versus temporary effects of the service.
3. Reversibility versus non-reversibility of these effects.
4. Physical effects versus mental effects.
5. Individual versus collective services (p. 16).

Lovelock (1979) draws a distinction between products (goods) and services, according to whether they are marketed by private firms, non-profit organizations, or public agencies, and whether they are marketed to organizational

buyers' households. This approach results in six categories of service reflecting the characteristics of the marketer and the buyer. Lovelock later proposed 12 approaches to classifying services. These 12 approaches are divided into three basic groups--basic demand characteristics, service content and benefits, and service delivery procedures. These are outlined below:

Basic Demand Characteristics

1. Who or what is the object of the service?
2. Extent of demand/supply imbalances.
3. Discrete versus continuous customer-provider relationships.

Service Content and Benefits

4. Role of physical goods and facilities in service delivery.
5. Role and extent of personal service.
6. Breadth of service package.
7. Timing and duration of benefits.

Service Delivery Procedures

8. Multi-site versus single-site delivery.
9. Allocation of capacity to customers.
10. Independent versus collective consumption.
11. Time-defined versus task-defined transactions.
12. Nature of customer-provider interactions. (Lovelock, 1979, pp. 72-76).

Kotler (1980) argues for classifications that reflect (1) whether the service is people-based versus equipment-based, (2) the degree to which the client's presence is necessary to the service, (3) whether the service meets personal or business needs, and (4) whether the service is public or private and for profit or non-profit.

Gronroos (1978) provides a classification scheme that is useful for positioning the focus of this study. He

classifies services by kind of market where they are sold (producer or consumer services) and by the service provided (professional or other services). Producer services are offered to industry and other institutions, whereas consumer services are marketed to households and to individual customers. Professional or consultancy services are normally discussed separately and not in the same context as other services. Figure 1 combines the two ways of classifying services. The same professional or the same consulting firm can operate either in the industrial sector, providing producer services, or both in the industrial and consumer sectors, thus rendering either producer or consumer services. Cell 1 of the matrix includes services such as those offered by management consultants, computer firms, and advertising agencies. A lawyer could render his professional services to either industrial buyers or individual customers. In the latter case these services could be placed in Cell 2. Gronroos makes a distinction between services traditionally labeled professional (consultancy) services and other services. Most of these other services, such as those provided by banks, travel agencies, hotels, restaurants, and transportation companies, are rendered both as producer and consumer services and are placed in Cell 3 or Cell 4. There are some services that solely belong to Cell 4, such as hair cutting and personal care.

This study is concerned with that type of service referred to as professional or consultancy services, e.g.,

non-good services that affect persons and organizations.

	Producer Services	Consumer Services
Professional Services	1	2
Other Services	3	4

Source: Gronroos (1979, p. 46).

Figure 1. Classification of Services

The Marketing of Professional Services

As mentioned in the introduction, most of the professional services marketing lacks conceptual development. Most involve recommendations to clients or firms interested in buying or selling management consulting services. This section provides a definition of professional services and reviews the conceptual ideas and empirical evidence related to buying and selling professional services. Finally, the area of professional development programs will be addressed.

Professional Services Marketing Concepts

Early attempts at defining professional services are
provided by Wilson (1972) and Wittreich (1966) and expanded
upon recently by Gummesson (1978). In developing his generic
definition, Gummesson interviewed over 50 professionals from
15 different professional service areas and made four case
studies in which selling and buying behavior was investi-
gated. From these efforts, a number of fundamental compo-
nents of the professional service gradually developed. It was
found that eight components covered the service and were
valid regardless of the type of professional service. The
components are shown in Figure 2. Four of the components are
necessary in any professional service: (A) specialist know-
how, (B) individual professionals, (E) way of operating an
assignment, and (F) solution to the problem. The others may
or may not be present. The components reflect the breadth of
the service. Quality (the value of the service from the
client's point of view) is dependent upon the depth of the
service, e.g., the skill with which the service is rendered
and the attention that is devoted to it.

Kotler and Conner (1977) offer the following definition
of professional service marketing:

> Professional services marketing consists of
> organized activities and programs by professional
> services firms that are designed to retain present
> clients and attract new clients by sensing, serv-
> ing, and satisfying their needs through delivery
> of appropriate services on a paid basis in a man-
> ner consistent with creditable professional goals
> and norms (p. 72).

According to Kotler, the professional firm cannot base its future on minimal or casual marketing nor, on the other hand, is it free to adopt a hard-sell effort that violates the profession's ethical norms. Six marketing strategies are available to the professional firm seeking disciplined growth: (1) expanding service to existing clients through cross-selling of services, (2) identifying and cultivating high potential prospective clients, (3) widening and deepening personal referral sources, (4) creating a favorable awareness program by increasing overall market visibility and reputation, (5) focusing on service and market specialization, and (6) developing an objective system to identify candidates for pruning.

Specialist know-how, experience, methods etc. (A)	Individual professionals (B)	Other resources and attributes (C)	The professional firms' resources to carry out assignments (input)
	Diagnosis, problem and goal formulation (D)	Way of operating an assignment (E)	The operation of the assignment
Solution to the problem (F)	Implementation of a solution (G)	The result of the implemented solution (H)	The end product of an assignment (output)

Source: Gummeson (1978), p. 91.

Figure 2. Components of a Professional Service

de Monthoux (1978) attributes the success of professional service firms to the individual. A person rather than a separate service is bought. For business success, the individual consultant, the one working by himself as well as the member of a large consultancy firm, depends on his social network which is built through birth and marriage, education, and leisure activities. The better a social network builder the consultant is, the more customers he gets.

Gronroos (1979) believes that a service company cannot expect to become marketing oriented by merely developing its mass marketing activities and personal selling efforts by professional salesmen, as suggested by the marketing literature. The firm should design its operations according to the needs of its targeted client. The objectives of marketing differ among three stages of client progress and different kinds of marketing activities should occur at the three stages. Generally, the objectives at the various stages can be stated as follows: (1) develop interest in the firm and its services, (2) turn the general interest into sales, and (3) secure resales and thus develop enduring client contracts.

Gronroos distinguishes two different marketing functions. The first function is called the traditional marketing function, which mainly consists of mass marketing activities, advertising, public relations, sales promotion, personal selling by top executives and professional

salesmen, and pricing. The second function, labeled the interactive marketing function of the consumption process, will be of utmost importance to the success or failure of the service provider. Every component--human and non-human--in the service-production context, every production resource used, and every stage in the service production process should be the concern of marketing and not considered merely as operations or personnel problems.

Schwersenz (1979) concludes that advertising and other forms of promotion now available to CPA's present an extraordinary opportunity to market the many services performed and compete more equally with the non-professionals. Regardless of how a firm goes about marketing, the important thing is to let people know about the firm, its members, and its services. Schwersenz includes the following elements in a sound marketing strategy: (1) evaluation of services that may be provided; (2) development of a promotional philosophy; (3) selection of advertising media; (4) determination of a specific sum to be expended in the promotional effort; (5) development of a defined advertising budget; (6) establishment of a schedule placing responsibility for each effort and setting deadlines when materials, arrangements, and other aspects of the effort must be completed; (7) evaluation; and (8) alteration of the marketing plan.

Turner (1969) holds that professional services can be effectively and ethically marketed in the conventional sense

through proper use of tested methods. Many problems asso-
ciated with the marketing of professional services grow out
of the do-it-yourself syndrome. This syndrome is defined as
the tendency of the technically oriented professional to
consider himself an expert in all the disciplines in which
he is involved when, in fact, he may possess only superfi-
cial knowledge in all except the technical aspects. Turner
believes that managers within the typical professional ser-
vice firm generally hold the following opinions: (1) a
marketing premise would place unnecessary and undesirable
limitations on the scope of operations; (2) it is impossible
to describe the firm's services, capabilities, and tech-
niques effectively in any general manner; (3) it is diffi-
cult to find effective marketing support services; (4) the
services are not marketable in the conventional sense, e.g.,
business comes from referral; and (5) the ethical environment
precludes advertising and overt promotional efforts. Turner
says that when professional services are viewed from the
client's position, five major activities can be identified
as necessary to the marketing of such services. These are
(1) group communications such as seminars, promotional lit-
erature, and articles in trade publications; (2) individual
communications; (3) identification of specific opportuni-
ties for the services of the organization; (4) identifica-
tion of the specific professional to engage the client; and
(5) follow-through feedback regarding project program.

Wittreich (1966) points out three key concepts that

should be kept in mind when selling professional services. A professional service must (1) make a direct contribution to the reduction of uncertainties involved in managing a business, (2) come directly to grips with a fundamental problem of the business purchasing that service, and (3) be purchased meaningfully from someone who is capable of rendering the service.

Schaffer (1976) believes that fundamental improvements in the way consulting is practiced can contribute much more significantly to the expanded use of consulting services than any educational or promotional effort. These improvements include (1) helping managers develop their own skills, effectiveness, and confidence in management of improvement efforts that involve new concepts and methods; (2) reinforcing client-success experience shortly after the inauguration of the project and a regular interval thereafter; and (3) helping management visualize how the immediate project can lead to subsequent related improvement steps that fit together into an overall development strategy. Each client system has certain limits to the scope, pace, and range of innovation it can at any one time absorb and effectively exploit from a consultant, referred to as the client's absorption capacity. If a client's proposal goes beyond the client's perception of these limits, the proposal may be rejected.

Several articles deal with selecting vendors such as professional service firms. Buyers' decisions in general,

and their vendor selection decisions in particular, are
functions of a number of determinants. Wind, Green, and
Robinson's (1968) conceptual scheme classifies the deter-
minants of industrial buyers decisions into five sets of
variables:

1. The buyer's own characteristics, especially
    his psychological mechanisms and behavioral
    characteristics, which serve as the major
    mediating processors between the inputs to
    which he is subject and his outputs
    [responses].
2. Interpersonal influences of other organiza-
    tional members.
3. Organizational variables, whose effect on the
    behavior of the organization members has been
    widely recognized by behavioral scientists but
    almost entirely neglected by marketing experts.
4. Inputs from the various sources of supply.
    Their inputs are generally of two types: (a)
    those supporting source X and (b) those contra-
    dicting inputs which attempt to neglect the
    influence of the supporting inputs for source
    X.
5. Environmental variables, which are of three
    types: (a) general variables affecting the
    value system of the people of a given society,
    (b) general business conditions, and (c)
    regular business constraints (p. 30).

Of these variables the fourth set is of greatest value to
the marketing manager, since its variables are controllable
by the vendor.

Lederer (1973) suggests that before selecting a profes-
sional service organization, a firm must first have a good
understanding of its own reasons for wishing to engage the
outside firm. Once decided, he recommends that the quest
for the professional service firm should be in the hands of
a person with authority in the company. He also emphasizes
that the important selection criteria are the qualifications

of the individual in contrast to the standing of the firm.
Lebell (1975) concludes that a firm must define and match
its needs to the skills of the professional firm. In order
to do this the client firm must be aware of the hetero-
geneity of professional services, the psychological and cul-
tural factors, and the need for developing an optimal
contractual situation with the professional. Moskal (1977)
agrees that the most difficult and yet the most necessary
part of selecting a specific consultant is defining the
problem. The important selection considerations include the
quality of the proposal, references, cost, and the impres-
sions left by the individual consultants during pre-
engagement meetings.

Empirical Evidence

In several articles related to the marketing of profes-
sional services, results of empirical investigations are
reported. Ratchford and Andreasen's (1972) study of con-
sumer perceptions regarding the selection of physicians con-
cluded that the selection process is an important, complex,
fairly subjective decision about which little information is
available. Kuehl and Ford's (1977) replication of the
earlier findings of Feldman and Spencer (1975) finds that
personal information sources dominate physician and lawyer
consumer decision-making processes--a characteristic found
in other service-oriented products categories. Personal
information sources dominate the selection process for

professional services even though respondents' importance ratings for the same criteria rate integrity and quality first and second in importance.

In a study by Sarkar and Saleh (1974), attributes of consulting professional engineers are examined with respect to the influence these attributes have upon the client's hiring process. They surveyed officials from 11 cities, 131 towns, and 150 villages with populations over 200 persons in the Province of Saskatchewan, Canada. The results of the study demonstrated that buyers of professional services develop a set of attributes for selecting vendors of professional services, based on their own evaluation of the importance of each attribute. Competence factors such as concept of problems, fees, experience, knowledge of local conditions, and technical reputations were all considered highly important. Adequate staff received a relatively low rating. Personality factors, while assuming an overall lower ranking than the competence factors, still shed important light on the selection process. The engineer's personality, integrity, cooperation, and objectiveness were perceived as more important in the selection process than professional standing and civic reputation. Sarkar and Saleh conclude by drawing up a list of attributes which match the offerings of a professional service firm to the needs of potential clients. Personality factors are presumed to act as intervening variables in the interpretation of factors by specific clients. The list of attributes

includes

1. A good working knowledge of the conditions affecting the work peculiar to the buying organization.
2. Extensive experience in the specific type of project being considered.
3. A high degree of quality and client satisfaction in previous projects of a similar nature, supported by references and recommendations from previous clients.
4. A sympathetic and knowledgeable understanding of the problem which may be faced by the organization in undertaking the project and a willingness to cooperate with the members of the organization to overcome the problems.
5. A demonstrated willingness to optimize through examination of alternatives. Off-the-shelf solutions are not always appropriate.
6. A staff capable of satisfying the previous five attributes, in addition to being large enough to do the work required within the budgeted time.
7. Sales personnel capable of representing the firm in both a technical and personal sense and in a manner in which in no way casts doubt upon the integrity of the firm.
8. A competitive fee structure (Sarkar and Saleh, 1974, pp. 31-32).

Smith and Meyer (1980) document the consumer's perspective of professional advertising by considering their _right to_ and _need for_ additional information before selecting attorneys. The national study examined the information needs of consumers during their attorney selection process. This question was investigated by examining the types and amount of information actually used in the selection process compared to those that consumers think should be used. A set of 17 attributes was produced from a preliminary select sample and sent to a random sample of 1,000 U. S. citizens. The 17 attributes included the following:

1. Integrity of lawyer.
2. Quality of service.

3. Promptness of service.
4. Area of lawyer specialty.
5. Past experience of lawyer.
6. Cost of legal service.
7. Past representation by lawyer.
8. Recommendation by other lawyer.
9. Recommendation by friend.
10. Convenience of office hours.
11. Years in practice.
12. Personal acquaintance.
13. Referral by state/county bar.
14. Law school attended.
15. Referral by legal aid.
16. Location of office.
17. Listing in yellow pages (Smith and Meyer, 1980, p. 60).

Smith and Meyer (1980) found that personal information sources dominate the selection process for professional services--a finding consistent with those of Kuehl and Ford (1977) and Feldman and Spencer (1975). In this study personal acquaintance and recommendation by a friend are clearly the most frequently used attributes; however, integrity and quality are rated first and second in importance.

In another study dealing with the marketing of legal services, Darden, Darden, and Kiser (1981) found that users and nonusers agree that reasonable and logical information was the most important attribute they consider in attorney selection. Users are more apt to judge a lawyer on the basis of their own past use. Nonusers consider fees and advertised information more important than users.

In a study by Wood and Ball (1978), CPA clients rated several criteria as being important in the selection of an accounting firm: technical expertise in the client's field; general technical competence as evidenced by being a CPA; sufficient size to provide backup when necessary and

specialists, if needed; reputation based on recommendations of business associates, attorneys, and bankers; ability to get along with the client; price; availability; length of time in practice; and location of office.

Jain et al. (1979) studied bank selection criteria in their efforts to test the validity of the various decompositional multi-attribute preference models. Five attributes were used in the study:

1. cost of checking account,
2. type of bank,
3. accessibility to banking service,
4. quality of service,
5. hours (p. 317).

Two hundred and twelve consumers were randomly selected to represent the adult consumers currently maintaining checking accounts. Although the authors were primarily concerned with the validity of the estimation procedures, two attributes emerged as most important to the consumer--cost of checking accounts and quality of service.

The review of literature found no empirical works dealing with buyer decision making as related to professional development programs. Several references related to the marketing of continuing education were found and reviewed (de Monthoux 1978; DeWald 1974; Lenz 1980; Ray 1981). Most provide very general descriptions of how the marketing concept might assist vendors in selling their services. For example, DeWald (1974) encourages readers to be concerned with the psychological attributes that users attach to education courses. In addition, vendors must recognize the

implications of the price at which courses are offered and the prestige of the vendor. Lenz (1980) adds that the "profile" of the consumer to whom the marketing strategy is addressed reveals a unique learner. The consumer (learner) is a mature adult and a capable student with a degree from at least one institution of higher education. Time is a critical factor because of professional demands. Ideas and values are well-formed and not susceptible to change. The adult learner may be described as affluent, critical, and knowledgeable.

The literature related to the marketing of professional services as reviewed provides some indications of buyers' preferences. The marketing perspective of professional services attributes selection is evident in each of the studies that dealt with buyer decision making, e.g., anything that a buyer perceives about a professional service may qualify as a service attribute. Some authors did distinguish between tangible and nontangible and subjective and objective attributes yet no efforts were made to specify or conceptualize levels and/or classes of attributes. The next section will review the developments in product attribute identification and classification that provide the framework for this study.

The Concept of Product Attributes

As alluded to in the introduction, the concept of product attributes has been approached intuitively, and several

contrasting streams of thought have emerged among marketing researchers and economists.

The Economic Viewpoint

Lancaster (1971), in what has been termed a new economic theory of consumer behavior by Ratchford (1975), defines product characteristics as those properties of a product which are relevant to consumer choice, quantitative, objectively measurable, and universal. To illustrate, the product characteristics possessed by an orange would include diameter, weight, skin thickness, ratio of juice weight to weight of solid matter, sugar content, etc. Each of these example attributes is objectively measurable, universal to oranges, and relevant to consumer choices and qualifies as a product characteristic. The taste of the resulting juice would not be a product characteristic by Lancaster's definition, since it would not be objective and measurable.

Cowling and Cubbin (1971) argue that there is a functional relationship between those services of a product which a consumer demands and the characteristics of a product as defined by Lancaster. This implies at least two levels of product characteristics: (1) a set of basic objectively measurable product characteristics and (2) an abstraction of these basic characteristics to a higher level of performance or service characteristics. In difference, Maynes (1976) defines what he calls a service characteristic to be that basic factor which gives rise to utility.

Therefore, features such as durability, beauty, and safety are considered product characteristics, while the product features which give rise to these elements are not considered product characteristics.

Although Maynes (1976) alludes to the problem of conceptualizing levels of characteristics, Geistfeld, Sproles, and Badenhop (1977) explicitly define levels of characteristics which are functionally related to one another. This results in the hierarchy of product characteristics. The concept of a hierarchy of product characteristics depends upon three fundamental ideas: definition of a product characteristic, dimensionality, and measurability. Geistfeld, Sproles, and Badenhop define a product characteristic as any feature of a product which indirectly influences a consumer's evaluation of a specific product variety. A product variety is a product-brand-model combination. A true product characteristic is one based on an identifiable physical feature or an abstraction of features to the service performed for the consumer.

A second concept is that of dimensionality. A characteristic is multi-dimensional if it is functionally related to other product characteristics, which themselves may be either multi-dimensional or uni-dimensional. Measurability, the third concept, is the extent to which a standard exists or can be developed for quantitatively measuring how much of a specific characteristic is processed by a specific product variety.

With these considerations in mind, Geistfeld, Sproles, and Badenhop formulated product characteristics into three fundamental levels. "A" level characteristics are abstract, multi-dimensional characteristics which are difficult to empirically measure. They are dependent upon lower level characteristics and are difficult to measure since they are abstract. "B" and "C" level product characteristics are similar to Lancaster's concept of a product characteristic. "B" level characteristics are the specific properties and services which are determined by "C" level characteristics and affect the overall desirability of a product variety. "C" level characteristics are often uni-dimensional and measurable; these characteristics are functionally related to "B" level characteristics and generally include features related to the composition and construction of the product.

Geistfeld, Sproles, and Badenhop argue that the hierarchy provides a unifying theory of product characteristics and offers a wide range of possibilities for future investigations. For example, consumer sophistication or prior knowledge of a product will influence the level of characteristics consumers use in the purchase decision. If as Maynes suggests, it is "A" level characteristics which consumers really desire, it is imperative that the relationship between the "A" level characteristics and lower level characteristics be studied to ensure that appropriately defined informational contents are delivered to consumers.

The previous discussion treats only intrinsic charac-
teristics as relevant product characteristics. The intrin-
sic aspect of the definition precludes purchasing criteria,
e.g., brand, price, guarantee and warranties, quality marks,
etc., from being considered product characteristics since
they are extrinsic to the product variety. The relevance of
these criteria to buyer desire cannot be dismissed and is
discussed in the next section.

The Marketing Viewpoint

As mentioned earlier, the modeling of consumer pref-
erences among multi-attribute alternatives has been of great
interest and concern to marketers. Preference modeling
involves identification of the choice alternatives and the
attributes associated with the alternatives, estimation of
the relative contribution of these attributes, and the
specification of a conceptual model underlying the choice
process.

Marketing researchers implicitly define product attrib-
utes in terms of consumers' subjective judgments directed
toward specific features possessed by a product (Wilkie and
Pessemier 1973). From this perspective, nearly anything
that a consumer perceives about a product may qualify as a
product attribute. The attribute does not emanate
physically from the product itself, but rather is associated
by the consumer with the product through a derived, or infer-
ential, process (Hirschman 1981). Attributes range from

specific purchasing criteria, such as price and brand name, to more abstract and subjective perceptions of features, such as convenience and durability.

Several studies alluded to different types of services attributes in their model formulations. Bamossy and Semenik (1981) studied group arts patronage and included in their analysis tangible and intangible motivators of patronage. They found that the motivational constructs of attendance provided additional insights to understanding art patronage behavior. Intangible attributes were found to be ranked more important than tangible attributes in patronage behavior. Murdock (1981) divided attributes into objective and subjective categories in his study of attributes used by first time users in selecting lawyers. Although none of the attributes proved to be determinant, he concluded that consumers of legal services are likely to make a lawyer selection decision based on subjective attributes such as competency, truthfulness, reputation, and interest in their problem. Hirschman (1981) examined the complexity of intangible product attribute cognitions. Her investigation found support for the proposition that the complexity of consumer cognitions concerning intangible attributes is enhanced by experience with the product. That is, the more experienced consumer ascribes more attributes to products in the domain, makes finer distinctions in the amount of attributes assigned to those products, and utilizes more independent decisions in conceptualizing a product.

Attribute importance is a construct of interest in several research areas and over the years four attribute measurement approaches have emerged: (1) self-report as used by determinant attribute and multi-attribute researchers, (2) graded paired comparisons, (3) consumer selection of product bundles in conjoint measurement, and (4) the information display board technique of consumer information processing research (Heeler, Okechuku, and Reid 1979; Jain et al. 1979; Sheluga, Jaccord, and Jacoby 1979).

Multi-attribute attitude models are used to gain understanding of attitudinal structure. The conceptual basis is psychological. Attitudinal approaches such as the expectancy-value or weighted-importance models (Bass 1972; Rosenberg 1956; Sheth and Talarzyk 1972) obtain the utilities of attributes through verbal reports on affectively based rating scales. The individual's evaluative reponse to a given attribute is taken as the best estimate of its utility. Belief strength, a second component of this model, is assumed not to affect choice if constant across all attributes and all subjects. This leads to a simpler linear additive model of consumer product evaluations in which the attribute utilities are estimated via rating scale responses.

The appropriate measurement instrument for soliciting self-stated importance depends on the definition of importance. Myers and Alpert (1977) distinguish among "salience," "importance," and "determinance" in relating

product attributes to preference. Salience is associated with the order of elicitation of attributes. For example, a consumer may have "top of mind" awareness of an attribute due to advertising, but this attribute may be unimportant in the buying decision. An attribute may be regarded as important, but if all brands or models have a satisfactory level of this attribute, it has no effect on purchase. Determinant attributes are defined as those attitudes toward product or service features which are most closely related to preference as to actual purchase decisions. A determinant attribute in the Myers and Alpert model is both important and different from other attributes. Determinance is represented by the product of importance and difference. Alpert (1971) suggested three categories of methods for identifying such attributes: (1) direct questioning, including direct dual questioning; (2) indirect questioning, including motivation research and covariate analysis; and (3) observation and experimentation. He tested the direct and indirect questioning methods and concluded that the direct questioning method was most efficient.

The second attribute measurement technique is the method of graded paired comparisons (Sheluga, Jaccard, and Jacoby 1979). This approach extends the methodology of simple paired comparisons and updates the corresponding analytical procedures through multiple regression. Simple comparative judgments are modified to include measures of direction and intensity of preference. Magnitude of

preference is assessed on graded rating scales. Regression decomposition of these graded pairwise judgments is used to estimate the relative utilities of the attributes that comprise the products.

Conjoint measurement (Green 1974a, 1974b, 1978, 1979; Moore 1980), the third attribute measure, has its origins in mathematical psychology and is analogous to the economic theories of consumer demand formulated by Lancaster (1971) in which products are viewed as bundles of attributes. This method is used to evaluate alternative products and provides information about the tradeoffs among product attribute importances. The data of conjoint analysis are obtained by an indirect process in which respondents react to either products described in complete bundles or attributes or sets of partial products described in terms of varied levels on two attributes at a time. It is assumed that a respondent has a personal utility value associated with each level of each attribute and that the degree of liking for a particular product is composed in some way from the utilities of its individual attribute levels. Overall utility for the product is decomposed into the part-worth contributions of the product attributes, providing estimates of their relative preference utilities.

The fourth attribute measurement method, the process-descriptive method, was developed by consumer behavior researchers to examine the depth, content, and sequence of information acquired by consumers in making a marketplace

choice (Jacoby et al. 1976; Jacoby, Izybillo, and Busato-Schach 1977). Using an information display board, respondents choose information piece by piece from an attribute-by-brand matrix board until they have acquired enough information to make a product selection. The complete information acquisition behavior of the subject can be followed. The instrument has the advantage of allowing subjects to choose for themselves the attributes warranting attention. The results of the information display board can be used to determine the relative importance of the product (Holbrook and Maier 1978).

Sheluga, Jaccard, and Jacoby (1979) compare all four methods and find only moderate association among derived attribute utilities. In general, rating scales obtain a set of attribute weights different from conjoint measurement and graded paired comparisons, while all three methods predict the preference order of the criterion set of stimuli. Choice predictions based on searched information were judged to be significantly more accurate than predictions based on all available information. Those attributes searched first were searched most heavily and were reported to have the highest value in reaching the product-choice decision for the consumer. Only the attribute utilities estimated through graded paired comparisons correlated significantly with the behavioral search and subjective importance measures.

Heeler, Okechuku, and Reid (1979) compared three of

these methods of obtaining attribute importance and found contrasting results. They explain the differences in terms of Myers and Alpert's (1977) results of semantic confusion in attribute importance research. They speculate that self-reports seemed to be a measure of salience and conjoint measurement a measure of importance. The information display board, by being the closest facsimile of actual shopping behavior, obtained the determinant attributes.

Attributes provide the basic dimensionality of these models and are crucial theoretically. An important issue is the determination and selection of a relevant set of attributes. The attribute selection problem is especially critical in research applying graded paired comparisons, conjoint analysis, and the process-descriptive method because the number of profiles to which respondents must react can become quite large if the number and level of attributes are not kept to a minimum. Literature reviewed earlier in this chapter provides little assistance in identifying a small number of key professional continuing education service attributes; therefore, this study is viewed as an exploratory investigation and deals with the identification and specification of relevant attributes of a professional service through self-reports. The results of the project can be used in future preference model formulation that would derive attribute importances statistically.

Summary

This chapter has provided a review of literature important to the study of professional services attribute identification and model formulation. The first section addressed literature related to the marketing of services in general and emphasized the ambiguities surrounding the services marketing concept. Services attributes were discussed and differentiated from product characteristics, and services classification schemes were presented to focus the proposed research on professional services.

The second section of this chapter reviewed both conceptual and empirical literature on the buying and selling of professional services. The lack of empirical evidence was noted concerning what constitutes professional services attributes and what buyers value as important when selecting these services.

The final area of this chapter reviewed the concept of product attributes from both the economic and marketing viewpoints. Approaches for measuring attribute importance were presented.

Based upon this background, the proposed study is undertaken to provide data relevant to the development of a conceptual framework regarding professional services buyer behavior. The study design presented in the following chapter assisted in (1) identifying professional services attributes, (2) analyzing potential hierarchical attribute

structure, and (3) studying the relationship between extrinsic attributes, intrinsic attributes, and various background variables.

CHAPTER III

RESEARCH METHODOLOGY

The research design described in this chapter provided the basis for accomplishing the research objectives related to an exploratory study of professional services attributes. The research objectives tie strongly to the conceptual work covered in Chapter II on goods characteristics (attributes). This stream of research has provided clarity to the concept of product attributes in product preference modeling. The framework suggested regarding levels of intrinsic attributes and extrinsic purchasing attributes and the concept of a hierarchical arrangement of attributes provide important advances beyond the previous viewpoint that product attributes are everything a consumer perceives about a product.

In their new formulation, attributes may be intrinsic or extrinsic to the product. Intrinsic attributes are the features of a product that influence a consumer's evaluation .of a specific product variety. Intrinsic attributes are seen either as identifiable physical features (low level attributes) or as abstractions of features to the service performed for the buyer (high level attributes). Purchasing criteria such as price and brand name are identified as a separate set of extrinsic attributes since they are not

intrinsic to the product variety. Extrinsic purchasing criteria are viewed as super attributes and may be surrogate indicators of intrinsic attributes.

The literature on professional services approaches professional services attributes in the historic intuitive perspective without precise definitions. Anything that a buyer perceives about the professional services has qualified as a professional service attribute. In addition, professional service's unique characteristics such as intangibility, nonstandardization, and inseparability add to the attribute specification problem. Using the conceptual developments in goods attributes specification, this study was undertaken to provide data relevant to the development of a conceptual framework regarding professional services attributes.

The research design assisted in the generation of determinant attributes of a professional service and an evaluation of the buyer's consideration of these attributes in buyer decision making. The quality contribution of each attribute was also examined. The design provides for an evaluation of the relative merits of an attribute classification scheme and a hierarchical arrangement of attributes. An evaluation of the relationship between levels of intrinsic attributes and between attributes intrinsic to the service and attributes extrinsic to the service was performed. In addition, the design included an examination of respondents' program experience, employment, and background variables in relation to their attribute evaluations.

Research Objectives

The research objectives that guided the study design and analysis follow:

Research Objective One: Generate a comprehensive listing of attributes for a professional service that includes high level intrinsic attributes, low level intrinsic attributes, and extrinsic purchasing attributes.

Research Objective Two: Determine what attributes buyers consider important in selecting a professional service and what attributes buyers feel affect the quality of the professional service.

Research Objective Three: Evaluate the perceived difference in importance between high level intrinsic, low level intrinsic, and extrinsic purchasing attributes.

Research Objective Four: Evaluate the relationship between high level and low level intrinsic attributes and between intrinsic and extrinsic attributes.

Research Objective Five: Determine whether the complete attribute listing can be reduced to a smaller number of determinant factors for model formulation.

Research Objective Six: Examine respondents' program experience, employment, and demographic

variables for similarities with respondents'
attribute evaluations.

These objectives provided an opportunity to delineate
attributes for a professional service and test empirically
the importance of these attributes to prospective buyers.
Additionally, an opportunity was provided to investigate the
relationship between levels of intrinsic attributes and the
relationship between intrinsic and extrinsic attributes. An
analysis of the background variables included the impact of
prior purchase behavior on attribute evaluations.

Data Source

An opportunity to evaluate the research objectives con-
cerning professional service attributes was available through
the Office of Business Extension in the College of Business
Administration at Oklahoma State University. The office
offers a wide variety of professional development programs
to business, industrial, and governmental clients. These
participants (buyers) generally purchase this service by
responding to a direct mail solicitation. A direct mail
survey to a subset of this buyer group provided the data to
answer the research questions posed in this study.

Expert judgments and a pretest survey were used to
develop the mail questionnaire. Expert judgments were used
to enumerate and classify a preliminary listing of attributes
related to professional development programs. This group of
eight experts consisted of staff members of the Office of

Business Extension and members of the University Extension
Marketing Committee. The University Extension Marketing
Committee members represent five different colleges' profes-
sional development program units which actively engage in
marketing professional development programs to a variety
of professional groups of individuals.

The attributes derived from this procedure formed the
basis of the survey questionnaire which was pretested on 18
past participants. Participants were asked to identify
and/or supply attributes that were actually used, or that
should be used in the professional development program
choice process.

After refinements based on the pretesting, the final
list of selection attributes and related questions were
mailed to a sample of past professional development program
buyers who have attended one of the Office of Business
Extension's publicly offered programs within the past five
years. In each case these buyers have purchased the non-
credit programs through completion of a registration form
attached to a direct mail brochure. The buyers included in
the sample have attended a one- to three-day program on
topics such as accounting, management, marketing, small
computer selection, and communications.

After examination of the Office of Business Extension
files, 2,196 past participants were identified and included
in the survey. Five hundred twenty-three questionnaires
were returned, a 24 per cent return rate. Thirty-three

questionnaires were incomplete and not included in the analysis. The 490 questionnaire returns, representing 22 per cent of the mailing, were felt adequate for analyzing the proposed research questions.

To check for the possibility of nonresponse bias, a time trend test comparing early respondent answers to late respondents' answers was performed. According to this test, "persons responding later are assumed to be more similar to non-respondents" (Armstrong and Overton 1977). To implement the test, the sample was divided into two groups based upon temporal order of questionnaire return. The two groups' responses were then compared via t test. The calculated t was compared to the critical t for each of 106 variables contained in the questionnaire (Appendix A). Ninety-four of the variables showed no significant (at the .01 level) mean differences between the two groups (Appendix B). This demonstrates consistent response patterns and adds support for the external validity of the findings.

The Measurement and Analytic Methods

The first research objective was to generate a representative list of attributes that buyers consider in selecting professional development programs. A preliminary listing of attributes was generated in a brainstorming session involving the expert panel previously identified. At a later date, members of this panel were asked to complete a short questionnaire (Appendix C) classifying the edited

listing of attributes into high level intrinsic, low level intrinsic, or extrinsic categories, according to the following definitions:

<u>Intrinsic Attributes</u>: An intrinsic attribute is any characteristic of a professional development program which directly or indirectly influences a buyer's evaluation of the program.

<u>Low Level Intrinsic</u>: Low level intrinsic attributes are often uni-dimensional and measurable features that may include features related to the physical composition or representation of the professional development program.

<u>High Level Intrinsic</u>: High level attributes are often abstract and multi-dimensional characteristics that give rise to utility. These attributes are difficult to measure and are dependent upon lower level characteristics. They also reflect the overall character of a professional development program.

<u>Extrinsic Attributes</u>: An extrinsic attribute is any purchasing criterion or supplier characteristic that influences a buyer's evaluation of a specific professional development program, but is not a characteristic of the program itself.

The panel was also asked to expand the listing for attributes not included in the original listing. The three

categories of attributes identified by this process were tested for rater reliability and those qualifying randomly organized into a self-administered mail questionnaire (Appendix D). The questionnaire was pretested with a sample of program buyers who had recently attended one of the qualifying programs. After pretest analysis and revision, the responses to the final questionnaire served to answer the remaining five research questions.

The second research objective concerned the attributes considered by participants in selecting professional development programs and the perceived importance of these attributes. Sections I and II of the research questionnaire were used to answer this question. Both sections asked respondents to provide self-stated ratings to the randomized listings of attributes previously generated. Other attribute measurement approaches such as graded pair comparisons, conjoint measurement, and process-descriptive models were abandoned in favor of the self-stated technique. This decision was based on the exploratory nature of this study and the need to consider a potentially large number of attributes. The attribute selection problem is especially critical in methods requiring that few attributes be used so that respondents may deal with realistic numbers of profiles and avoid information overload. Since this study was concerned with the identification and specification of relevant attributes for future preference model formulation, the expected loss of predictive validity in using self-stated importance

ratings should not alter the research outcomes. Furthermore, the results of this study will provide input for more precise attribute estimation and method comparisons.

In the first section on the questionnaire, respondents were asked to indicate which of the randomly ordered attributes they typically consider in selecting the professional development programs they have attended. Respondents were given five descriptions to indicate frequency of consideration from "always consider" to "never consider." Haley and Case (1979) compared 13 attitude scales and found that an "awareness" scale represented attribute determinance and discriminated better than all others. This "consideration" scale is closely aligned with their "awareness" scale. Each point on the scale contains word descriptions which were found preferable by Haley and Case.

To provide a validity estimation of the consideration scale, the second section of the questionnaire asked respondents to provide self-stated ratings to the randomized listing of attributes based upon how important each attribute was in determining the quality of professional development programs. Following Neslin (1981), the self-stated measurement instrument asked clearly how including each attribute would affect perceived overall professional development program quality. Responses were provided along a five point scale with end points labeled from "greatly increases quality" to "slightly decreases quality."

The self-rated responses were averaged across

respondents and the attributes ranked accordingly from those attributes that were considered the most to those considered the least. The attributes were also averaged and ranked according to those that increase quality the most to those that affect quality the least. The attribute averages of "quality contribution" were compared to the averages of attributes "considered" in selecting professional development programs and the differences and relationship noted.

The third research objective asked that a comparison be made to evaluate the difference between high level intrinsic, low level intrinsic, and extrinsic attributes. The rating of attributes derived in the first section of the questionnaire were used to answer this research question. Each group of attribute ratings were averaged for each respondent and tested for significant differences using analysis of variance (ANOVA).

To evaluate the relationship between low level and high level intrinsic and all intrinsic attributes and extrinsic attributes, the fourth research objective, the data from section one of the questionnaire was submitted to two canonical analyses. In one analysis, high level intrinsic attributes served as the predictor variables and low level intrinsic attributes served as the criterion variables. This analysis served to indicate the degree of association between the physical characteristics and the service created by these characteristics. In the second analysis, the predictor variables were identified as the intrinsic

attributes and the extrinsic attributes identified as the criterion variables. The results of this analysis indicate whether extrinsic factors are surrogates for the intrinsic factors.

The fifth research objective consisted of reducing the number of attributes to meaningful factors through factor analysis. The meaningful factors that emerged from this data reduction provide the items to be included in further model formulation and research efforts.

The last research objective was concerned with comparing respondents' background variables with attribute evaluations. Of particular interest in this analysis was the potential significance of past purchase behavior on attribute evaluations. A specific analysis was made to determine if more experienced buyers evaluate intrinsic and extrinsic attribute importance differently. Discriminant analysis was used to evaluate this particular question. Further partitioning of the respondents was performed using demographic variables and various variables related to respondents' employers.

This chapter has set forth the research methodology used to answer the proposed research questions. The next chapter presents the data that resulted from this methodology and an analysis of the data, utilizing the statistical techniques.

CHAPTER IV

RESULTS OF THE EXPERIMENT

The data and analyses presented in this chapter are
organized around the six research objectives posed in
Chapter III.

Research Objective One

The first research objective was concerned with gener-
ating a comprehensive listing of attributes for professional
development programs that included high level intrinsic
attributes, low level intrinsic attributes, and extrinsic
purchasing attributes. A preliminary listing of attributes
could not be generated from the literature survey; there-
fore, a series of information gathering steps were conducted
using expert judgments. The experts consisted of profes-
sional staff members of Oklahoma State University's
Extension division who are responsible for the development
and delivery of professional development programs. The first
task the group undertook was the generation of every attri-
bute or characteristic that might be considered by an indi-
vidual in deciding to attend a professional development
program. This brainstorming session concluded with the
identification of over 100 attributes. After eliminating

duplication, 81 attributes were identified.

During the second phase, approximately two weeks later, each of these experts was presented with definitions for high level intrinsic (H), low level intrinsic (L), and extrinsic purchasing (P) attributes and asked to classify each of the 81 attributes into one of the three categories (Appendix B). The second portion of this information generating phase also consisted of sending the pretest instrument (Appendix C) to 30 recent professional development program purchasers. This pretest instrument included all 81 attributes and each respondent was asked to complete the "Consideration" and "Quality" scales and the background variables. Eighteen instruments were returned and analyzed.

From an analysis of these two procedures, the 48 attributes presented in Table I were retained for the final survey questionnaire. In addition, several editing changes were made to the attribute descriptions and background questions to provide additional clarification. The primary decision rule used in selecting the 48 attributes came from the expert group. To qualify, six of the eight judges had to agree on the classification of each attribute as an H, L or P. This resulted in 47 attributes with 19 H's, 13 L's and 15 P's. Through analysis of the pretest instrument completed by the previous program buyers, several attributes were combined, rewritten, deleted, and added so that 48 attributes were retained with 16 in each classification. The attribute alterations are described in Appendix B. The inclusion of

TABLE I

ATTRIBUTE IDENTIFICATION AND CLASSIFICATION

Classification	Attribute
HIGH LEVEL INTRINSIC	
H1	promotes participant interaction
H2	is an established program
H3	increases personal status
H4	helps build business contacts
H5	is an informational update
H6	increases job knowledge
H7	enhances skill development
H8	improves job efficiency
H9	provides idea exchange
H10	increases general ability
H11	assists in getting a salary increase
H12	type of audience attending
H13	increases general knowledge
H14	increases promotional potential
H15	assists in career change
H16	offers potential behavioral change
LOW LEVEL INTRINSIC	
L1	is presented in a lecture format
L2	has social hours
L3	is held at resort location
L4	length-one day, two day, etc.
L5	is offered on weekends or evenings
L6	has meals provided
L7	time of year, month, week
L8	has exhibitors present
L9	is held in a hotel
L10	uses case method
L11	is held on university campus
L12	provides a workbook or textbook
L13	uses role playing exercises
L14	has comfortable classrooms
L15	is held on a work day
L16	uses audio-visual presentations
EXTRINSIC PURCHASING	
P1	is taught by industrial specialists
P2	is advertised in a newspaper
P3	is advertised in personal letter
P4	provides refund policy
P5	is sponsored by a university
P6	is taught by a university professor(s)
P7	is advertised in catalogue or brochure
P8	administrative efficiency
P9	awards college credit, certificates, CEU's
P10	sponsor's reputation
P11	offers discounts for multiple enrollments
P12	is taught by consultants
P13	has attractive brochure design
P14	registration fee
P15	is recommended by an associate
P16	instructor's credentials

the 48 attributes in the final questionnaire identified as
the Professional Development Program Planning Survey
(Appendix A) completed the requirements of the first
research question.

Basic Results

Research Question Two

The second research objective was to determine what
attributes buyers consider in selecting professional devel-
opment programs and what attributes affect perceived profes-
sional development program quality. Sections I and II of
the research instrument were used to answer this research
question. Section I asked respondents to indicate the
degree of consideration they give each attribute when decid-
ing whether or not to attend a professional development pro-
gram. Respondents selected one of five scale values ranging
from "Always Consider" to "Never Consider" which were coded
from 1 to 5 for analytic purposes.

Section II of the instrument asked respondents to indi-
cate how they felt each attribute affected the overall
quality of the professional development program. Each
respondent was again provided five scale choices ranging
from "Greatly Increases Quality" to "Slightly Decreases
Quality." These were also coded from 1 to 5 for analytic
purposes.

Table II provides the mean values for each of the 48
attributes and the rank order of the mean values for each of

TABLE II

MEANS AND RANKINGS OF ATTRIBUTES

Attribute		Consideration Rank	Mean	Quality Rank	Mean
H6	increases job knowledge	1	1.288	1	1.384
H8	improves job efficiency	2	1.347	4	1.580
H7	enhances skill development	3	1.386	2	1.473
H10	increases general ability	4	1.543	5	1.602
H13	increases general knowledge	5	1.582	3	1.516
L7	time of year, month, etc.	6	1.627	17	2.367
P8	administrative efficiency	7	1.735	13	2.078
L4	length-one day, two day, etc.	8	1.822	20	2.420
H5	is an informational update	9	1.886	8	1.843
P16	instructor's credentials	10	1.886	6	1.741
P10	sponsor's reputation	11	1.898	10	1.922
H2	is an established program	12	1.971	11	1.973
P14	registration fee	13	2.020	32	2.931
H9	provides idea exchange	14	2.055	9	1.884
L12	provides a workbook or textbook	15	2.143	7	1.776
P1	is taught by industrial specialists	16	2.204	12	2.037
L15	is held on a work day	17	2.365	37	3.112
P15	is recommended by an associate	18	2.394	28	2.712
P12	is taught by consultants	19	2.406	16	2.327
L1	is presented in a lecture format	20	2.490	27	2.708
H1	promotes participant interaction	21	2.508	15	2.304
L14	has comfortable classrooms	22	2.510	14	2.218
P5	is sponsored by a university	23	2.529	23	2.598
H12	type of audience attending	24	2.553	21	2.445
P3	is advertised in personal letter	25	2.608	35	3.080
H3	increases personal status	26	2.665	26	2.694
P4	provides refund policy	27	2.722	33	3.051
L10	uses case method	28	2.749	30	2.827
L5	is offered on weekends or evenings	29	2.761	45	3.545
P9	awards college credit, certificates, CEU's	30	2.820	19	2.406
P6	is taught by a university professor(s)	31	2.900	29	2.757
L16	uses audio-visual presentations	32	2.989	18	2.398
H4	helps build business contacts	33	3.016	25	2.663
H14	increases promotion potential	34	3.020	22	2.580
P7	is advertised in catalogue or brochure	35	3.220	41	3.422
H11	assists in getting a salary increase	36	3.278	24	2.645
H16	offers potential behavioral change	37	3.316	31	2.898
L6	has meals offered	38	3.384	36	3.102
L8	has exhibitors present	39	3.465	38	3.276
P11	offers discounts for multiple enrollments	40	3.510	40	3.392
L11	is held on university campus	41	3.522	42	3.455
L9	is held in a hotel	42	3.557	44	3.527
H15	assists in career change	43	3.565	34	3.055
L13	uses role playing exercises	44	3.702	39	3.345
L3	is held at resort location	45	3.865	43	3.498
P13	has attractive brochure design	46	3.982	46	3.665
L2	has social hours	47	4.124	47	3.741
P2	is advertised in a newspaper	48	4.182	48	3.841

the scales. The means for the Consideration Scale ranged from 1.288 to 4.182 with attribute "increases job knowledge" (H6) receiving the most consideration in selecting a professional development program and "is advertised in a newspaper" (P2) receiving the least consideration. Eight high level intrinsic attributes ranked in the upper third of the rankings listing (Table III). Three H's were present in the middle third and five were present in the lower third of the rankings. Lower level intrinsic attributes were in reverse order of H's and had three in the upper third, six in the middle, and seven in the lower third. Extrinsic purchasing attributes placed seven in the middle rankings, five in the upper third, and four in the lower third. These ranking groupings indicated that buyers tend to give more consideration to the high level attributes in selecting professional development programs followed by purchasing attributes and low level attributes, respectively.

The means for the Quality Scale ranged from 1.384 to 3.841 with the same attribute represented at both ends of the scale; "increases job knowledge" (H6) was highest and "is advertised in a newspaper" (P2) was lowest. Table IV presents a similar analysis for the Quality Scale as was presented for the Consideration Scale. The trend of ranking groupings is in the same direction as with the Consideration Scale. Nine H's are in the upper third of the rankings, six are in the middle and one in the lower third of the rankings. Two L's are placed in the upper third, five in the middle

TABLE III

CLASSIFICATION OF ATTRIBUTE RANKINGS FOR
CONSIDERATION SCALE

Attribute Level	Upper Third	Middle Third	Lower Third	Total
H	8	3	5	16
L	3	6	7	16
P	5	7	4	16
TOTAL	16	16	16	48

TABLE IV

CLASSIFICATION OF ATTRIBUTE RANKINGS FOR QUALITY SCALE

Attribute Level	Upper Third	Middle Third	Lower Third	Total
H	9	6	1	16
L	2	5	9	16
P	5	5	6	16
TOTAL	16	16	16	48

third, and the remaining nine in the lower third of the rank-
ings. Six P's are present in the lower third of the rankings
and five in each the upper and middle third. This general
grouping of attribute classes suggests that buyers feel that
high level attributes increase the quality of a professional
development program more than either low level or purchasing
attributes. Purchasing attributes are seen as having more
effect on program quality than low level attributes.

In comparing the responses received on the two scales,
both indicate a general tendency of past buyers to feel a
similar preference ordering of the attribute classes.
Buyers logically seem to give more consideration in their
decision process to attributes that they feel contribute
the most quality to the program. More consideration and
quality is afforded to high level attributes, e.g.,
"increases job knowledge," "improves job efficiency,"
"enhances skill development," "increases general ability,"
and "increases general knowledge." Less consideration and
quality is contributed to extrinsic purchasing attributes
such as "is advertised in personal letter," "provides refund
policy," "awards college credit, certificates, CEU's," and
"is taught by consultants." Low level attributes such as
"has meals provided," "has exhibitors present," "is held at
a resort," "uses role playing exercises," and "has social
hours" are considered less in the purchase decision and also
felt to contribute less to program quality than the other
attribute classes.

There are some noticeable differences in the rankings of some attributes on the two scales. More consideration is given to some low level attributes whose quality contribution is low, e.g., "time of year, month, week" (L7), "length-one day, two days, etc." (L4), "is held on a work day" (L15), and "is offered on weekends or evenings" (L5). Some attributes are felt to enhance quality but are not necessarily important in the purchase decision, e.g., "has comfortable classrooms" (L14), "uses audio-visual presentations" (L16), "assists in career change" (H15), "assists in getting a salary increase" (H11), and "increases promotion potential" (H14). Many of these differences seem logical. For example, the "time of year, month, week" that a program is offered would receive consideration in the purchase decision yet contribute little to the quality of the program; whereas, "uses audio-visual presentations" may be felt to contribute to program quality but is difficult to consider where selecting a program to attend. Although these differences did exist, a comparison of the association between the two scales using Spearman's rank correlation provided a significant correlation coefficient (at the .01 level) of $r_s = .85$.

Background Variables

In addition to the Consideration and Quality scales, the survey included two other sections. Section III asked three questions that related to respondents' attendance of professional development programs. Table V provides

TABLE V

PROFESSIONAL DEVELOPMENT PROGRAM ATTENDANCE

Question	Value	Per Cent
Approximately how many professional development programs do you attend per year?	1	16%
	2	33%
	3	25%
	4	16%
	5	5%
	6/more	5%
Approximately how many days are spent attending professional development programs per year?	1- 2	14%
	3- 4	31%
	5- 6	27%
	7- 8	11%
	9-10	9%
	11-12	2%
	13-14	4%
	15/more	2%
Approximately what percentage of the professional development program registration fee is paid by your firm?	0	14%
	1- 25%	3%
	26- 50%	2%
	51- 75%	2%
	75-100%	79%

percentage and mean values for these questions. The first
question asked how many programs, other than in-company pro-
grams, a respondent typically attends each year. Seventy-
four per cent indicated they attend one to three programs per
year with a median of 3 programs per year. Question two
asked how many days each respondent spends attending these
programs. Seventy-two per cent indicated that they spend
between one and six days at these programs with the median
being 5-6 days. Question three asked respondents if their
employer contributed to the program registration fee.
Seventy-nine per cent indicated that the employer pays
between 75 and 100 per cent of the program fee while 14 per
cent received no tuition assistance. These three questions
imply that this sample of respondents attend one to three
professional development programs per year, each program one
to two days in length, at no expense to themselves.

The responses to Section IV of the survey are summa-
rized in Table VI. Six questions were included in this sec-
tion of the questionnaire and related to employment and
demographic variables. Question one asked about the size,
in number of employees, of the respondents' firm. Sixty-
seven per cent indicated they are employed in firms that
employ 100 or fewer employees. Nineteen per cent work for
firms employing 500 or more. Fifty-seven per cent of the
respondents are employed in the service sector, question two,
while the remainder are fairly evenly split between man-
ufacturing, wholesaling, retailing, extractive industries,

TABLE VI

EMPLOYMENT AND DEMOGRAPHIC VARIABLES

Question	Value	Per Cent
What is the approximate number of employees your firm employs?	0- 10	37%
	11- 50	22%
	51-100	8%
	101-200	9%
	201-500	5%
	501/more	19%
What type of industry is your firm representing?	service	57%
	manufacturing	9%
	wholesaling	2%
	retailing	4%
	extractive ind.	5%
	other	23%
What is your position level in your firm?	nonsupervisory	15%
	supervisory	19%
	mid-management	23%
	top level mgmt.	42%
	other	1%
What is your age group?	under 21	1%
	22-30	15%
	31-40	27%
	41-50	30%
	51-60	18%
	60/more	9%
What is the number of years of education which you have completed?	12	15%
	13	7%
	14	11%
	15	7%
	16	28%
	17	11%
	18	8%
	19	4%
	20/more	9%
Sex	Male	58%
	Female	42%

and others. Forty-two per cent of the sample reported their
position level in the firm as top level management, while
the remaining were evenly distributed between nonsupervi-
sory, supervisory, and mid-management levels. Fifty-seven
per cent reported their age in the 31 to 50 age groups with
the median age group 41-50. Respondents' median education
level was reported to be 16 years with a fairly even distri-
bution from 12 years to 20, except for the 39 per cent that
indicated 16 and 17 years of education. Fifty-eight per cent
of those surveyed were male and 42 per cent were female.

These variables provide a general profile of the survey
sample group. This profile, in its most general case, fea-
tures a respondent, between the ages of 31 and 50 who is
employed at the top level management in a small service
firm.

Research Question Three

The third research objective was included to test if
buyers of professional development programs value attributes
differently in their purchase decision. Section II of the
questionnaire, the Quality Scale, was originally identified
to test this hypothesis and others related to research ques-
tions four, five, and six. After evaluation of the basic
data output and a detail review of the individual question-
naires, the Consideration Scale responses were selected as
the primary data input.

In reviewing the results of the attribute rankings of

the two scales, the respondents seemed to be evaluating the attributes that were determinant in their purchase decision in the Consideration Scale. The Quality Scale seemed to address the attributes that were important or unimportant to the respondents but not necessarily relevant to the purchase decision. This problem was addressed in Chapter III and relates to the problem of distinguishing between determinance and importance (Myers and Alpert 1977) when using self-stated ratings. For example, respondents indicated they considered (Consideration Scale) program timing (L7), length (L4), and registration fee (P14) important in deciding to attend a professional development program. These same factors were felt to impact program quality (Quality Scale) very little.

An additional reason for using the Consideration Scale came from a close examination of individual survey responses. The respondents appeared to have lost some motivation in completing the second scale presented (Quality Scale). This was evidenced in premature termination as observed in the 33 incomplete questionnaires excluded from the study. The loss of motivation was also evident by the tendency of many respondents to use identical response categories (straight-lining) while rating the 48 attributes on the Quality Scale. Herzog and Bachman (1981) suggest that loss of motivation in completing survey instruments, as evidenced in straight-line responses, can result from excessive survey length. This can also happen when

respondents are required to complete a long set of items using identical response scales. Both of these character-istics may have affected the response data on the Quality Scale resulting in data of lower quality.

The Consideration Scale appeared to be providing more evidence toward identifying determinant responses and was used as the primary data source for answering the remaining research questions. Parallel analysis was also conducted using the Quality Scale and differences are noted.

Research objective three tests for differences in the importance between the three attribute classes: high level intrinsic (H), low level intrinsic (L), and extrinsic pur-chasing (P). An important premise in understanding profes-sional service buyer decision making is that professional services attributes may be conceptualized as different mean-ingful classes and that these attributes may take on a hier-archical ordering. The null hypothesis that no differences exist between the three levels was examined using an anal-ysis of variance. First, H, L, and P values were computed by summing each respondent's scale values for each of the six-teen attributes rated in each class on the Consideration Scale. The potential range of values for each respondent for each class was 16 to 80. Mean values for H, L, and P were then tested for significant differences. Table VII presents the results of this analysis.

The null hypothesis of equality of means was rejected and the alternate hypothesis accepted. There are significant

differences in at least one of the classes, and using
Duncan's Multiple Range Test (Appendix E) all three classes
were found to be significantly different from each other.
The direction of mean computed values indicates that respon-
dents give more consideration to the high level intrinsic
attributes followed by extrinsic purchasing attributes. Low
level intrinsic attributes as a group receive the least con-
sideration in deciding to attend professional development
programs. The results of this analysis using the Quality
Scale were identical.

TABLE VII

ANALYSIS OF VARIANCE - ATTRIBUTE LEVELS

Mean			F
H	L	P	Ratio
36.98	47.07	43.02	165.15*

*Significant at .0001 level.

In addition to this analysis, each of the program
experience, employment, and demographic variables was added
as a separate treatment variable using General Linear Models
(GLM) for an unbalanced ANOVA (Appendix F). No interactions

were identified; however, five variables displayed significant differences at the .01 level in average computed value responses.

Respondents who attend one or two programs per year give more consideration to the three attribute classes than those who attend four or five programs per year. Respondents who work for firms employing 10 or fewer employees indicated they give less consideration to all three classes of attributes than respondents who work for firms employing 11-50 or 101-200 employees. Position level differences were also significant. Top level management respondents indicated they considered all attribute classes less than either non-supervisory or supervisory respondents. Education was also significant. Those respondents completing 13 years of education give more consideration to all classes than any of the other educational categories. The last variable found to be significant was sex. Females give more consideration to each of the attribute classes than male respondents. The hierarchical direction of the three classes of attributes remained consistent with the overall sample for each subdivision.

In summary, there is a difference in the degree of consideration respondents give high level intrinsic, low level intrinsic, and extrinsic purchasing attributes when deciding to buy professional development programs. There also appears to be a hierarchical arrangement of these attribute levels with high level intrinsic attributes being most

considered, followed by extrinsic purchasing and low level
intrinsic, respectively. Several within levels of experi-
ence, employment, and demographic variables were
significant. Respondents who experience one or two pro-
grams per year, work for firms that employ 11-50 or 101-200
employees, are in nonsupervisory or supervisory positions,
have completed 13 years of education, and are females give
more consideration to all attribute classes in the H-P-L
order than do respondents who attend four or five programs
per year, work for firms employing 10 or fewer employees,
are in top level positions, have more or fewer than 13 years
of education, and are male. No significant differences were
found for the variables: number of program days attended
each year, per cent of registration fee paid by the company,
type of industry, or age group.

In computing the results using the Quality Scale, the
alternative hypothesis was also accepted, e.g., the respon-
dents indicated that there is a difference in the contribu-
tion of the three attribute classes toward program quality.
The concept of a hierarchical arrangement of attribute
classes was also found and in the same direction as the Con-
sideration Scale. High level intrinsic attributes were felt
to increase quality the most, followed by extrinsic purchas-
ing attributes and low level intrinsic attributes, respec-
tively. Some differences were found when the experience,
employment, and demographic variables were included in the
analysis. The number of programs attended and the size of

the employer were not significant as was when the Consideration Scale was used. Attribute evaluations were significantly different when the respondent's position level, education level, and sex were considered and the results were similar to the Consideration Scale analysis.

Research Objective Four

Research objective four is concerned with the interrelationship of attributes contained in the three attribute classes. To complete research objective four, two analyses were required. The first analysis concentrated on examining the relationship between high level intrinsic and low level intrinsic attributes. This analysis served to sort out the degree of association between low level attributes and the service or high level attributes created by these lower level attributes. The second analysis was concerned with identifying interrelationships that might exist between all intrinsic attributes and the extrinsic attributes. These extrinsic attributes are not intrinsic to the professional development program but have been shown to be relevant to buyer choice.

The approach used to examine these relationships is canonical analysis. Canonical analysis is appropriate for correlating sets of criterion variables and predictor variables, e.g., high level intrinsic and low level intrinsic attributes and intrinsic and extrinsic attributes. Canonical analysis is used to find the linear combination of high level

intrinsic [intrinsic] attributes that are most highly corre-

lated with linear combinations of lower level intrinsic

[extrinsic] attributes.

In the first analysis involving high level and low

level attributes, 16 canonical roots were generated by the

analysis. For each root a canonical coefficient index was

computed giving the overall correlation between the linear

combination of criterion (low level intrinsic) attributes

and the linear combination of predictor (high level intrin-

sic) attributes. All of the indices were not determined to

be statistically significant by the F statistic. Five of

the 16 roots were significant at the .0001 level and are

presented in Table VIII. The first canonical R of .71 indi-

cated that 50.2 per cent of the variation in the low level

attributes could be explained by the high level attributes

in the predictor set. Each of the succeeding canonical R's

are similarly explained. To rectify the inherent overstate-

ment in measures of canonical association, Stewart and Love's

(1972) redundancy index $(\overline{R}^2{}_{p/c})$ was computed to access the

average relationship between two sets of varibles. This

resulted in only 9.9 percent of the variance of the criterion

set being explained by the variance in the predictor set.

To explore the specific relationship between high level

and low level attributes, Table IX presents the weights of

the attributes generating the first linear combination (R_1).

Only those weights with an absolute value of .25 or above

were identified. The linear combination of high level

TABLE VIII

CANONICAL CORRELATION ROOTS -- HIGH AND LOW ATTRIBUTES

Canonical Root	Canonical Correlation Index (R)	Canonical R-squared	F Statistic	DF	Prob. F
1	.71	.502	3.85	256	.0001
2	.56	.313	2.76	225	.0001
3	.47	.219	2.19	196	.0001
4	.41	.167	1.82	169	.0001
5	.36	.127	1.52	144	.0001

TABLE IX

CANONICAL VARIATES -- HIGH AND LOW LEVEL ATTRIBUTES

Class	Attribute	R_1
H4	helps build business contacts	.26
H7	enhances skill development	-.25
H16	offers potential behavioral change	.43
L2	has social hours	.28
L8	has exhibitors present	.27
L13	uses role playing exercises	.28
L16	uses audio-visual presentations	.30

attributes H4, H7, and H16 explain the variation in the linear combination of L2, L8, L13, and L16. Business contacts and potential behavioral change seem to be positively associated with lower level attributes as reflected in social hours, exhibitor, and role playing exercises. Skill development is negatively associated with these lower level social activities and non-traditional teaching presentations. This association, although weak and vague, lends some support to the idea that certain lower level attributes form to represent the higher level service attributes. The other four linear combinations provide little explanation of variability between high level and low level attributes and are not examined (Appendix G).

The second analysis was concerned with identifying interrelationships that exist between all 32 high and low level intrinsic attributes and the 16 extrinsic purchasing attributes. Sixteen canonical roots were generated by this analysis and nine were significant (Table X). The average relationship between the two attribute sets was low ($\overline{R}^2_{p/c}$ = 19.3%). The first canonical R of .81 indicated that 64.7 per cent of the variation in the extrinsic purchasing attributes could be explained by the high level and low level attributes in the predictor set. This canonical root (R_1) is further explained in Table XI which presents the attributes whose weights are .15 or above. The weights in this second analysis were lower and the criterion for consideration reduced to the .15 level. The linear

TABLE X

CANONICAL CORRELATION ROOTS -- INTRINSIC AND
EXTRINSIC ATTRIBUTES

Canonical Root	Canonical Correlation Index (R)	Canonical R-squared	F Statistic	DF	Prob. F
1	.81	.647	3.61	512	.0001
2	.66	.432	2.75	465	.0001
3	.55	.303	2.35	420	.0001
4	.53	.280	2.13	377	.0001
5	.47	.226	1.91	336	.0001
6	.43	.186	1.76	297	.0001
7	.41	.168	1.62	260	.0001
8	.38	.145	1.48	225	.0001
9	.35	.124	1.35	192	.0014

TABLE XI

CANONICAL VARIATES -- HIGH AND LOW LEVEL AND
EXTRINSIC ATTRIBUTES

Class	Attribute	R_1
L9	is held in a hotel	.17
L11	is held on university campus	.22
L13	uses role playing exercises	.16
L14	has comfortable classrooms	.17
L16	uses audio-visual presentations	.15
P6	is taught by a university professor(s)	.15
P8	administrative efficiency	.21
P9	awards college credit, certificates, CEU's	.18
P10	sponsor's reputation	.16
P11	offers discounts for multiple enrollments	.28
P13	has attractive brochure design	.26
P15	is recommended by an associate	.15

combination of low level attributes L9, L11, L13, L14, and L16 explains the variation in the linear combination of P6, P8, P9, P10, P11, P13, and P15. Little meaning can be found in the interpretation of this relationship other than university location relating to the awarding of college credit and university instruction. The other canonical correlations explain even less of the variation between high and low level attributes and extrinsic supplier attributes (Appendix G). They also provide little value in understanding the interrelationships of the attributes.

In summary, the relationship of high level intrinsic attributes to low level attributes provides some evidence to believe that buyers may relate lower level attributes to the services they perform as expressed in higher level attributes. Although related, a meaningful explanation between high and low intrinsic attributes and extrinsic purchasing attributes is doubtful, given these professional development program attributes used in this study. The idea that extrinsic purchasing attributes, such as registration fee and sponsor, serve as surrogate indicators of high or low level intrinsic program attributes was not apparent in this analysis.

The above analysis was performed using the Consideration Scale. The identical analysis using the Quality Scale was also examined. In the first analysis, high level intrinsic and low level intrinsic, five canonical correlation roots were also significant at the .01 level. The

first canonical correlation explained less (40.7 per cent) variability in the relationship and different attributes contributed to the relationship. "Participant interaction" (H1), "established program" (H2), and "informational update" (H5) were associated with "using role playing exercises" (L13) and "uses audio-visual presentations" (L16). The non-traditional teaching activities seem to relate to inter-active and established program attributes.

In the second analysis, relating high and low intrinsic attributes to extrinsic purchasing attributes, nine canon-ical correlation roots were also significant at the .01 level. The first linear combination explained 64.7 per cent of the variation between the variables. "Is an established program" (H2) and "is held on a university campus" (L11) weighed heavily in explaining the variation in three extrinsic purchasing attributes: "is sponsored by a univer-sity" (P5), "administrative efficiency" (P8), and "is taught by consultants" (P12). This association is also difficult to interpret but does seem to provide weak evidence that purchasing attributes might serve as surrogate indicators of high level attributes.

Research Question Five

The fifth research objective was to determine whether the complete attribute listing could be reduced to a smaller number of determinant factors. The first effort to assemble a listing of professional development programs resulted in

over 100 being identified. As previously discussed, this list was reduced to the 48 attributes used in the final survey instrument. The appropriate number of attributes to be included in multi-attribute models has received attention in the literature and is reviewed by Wilkie and Pessemier (1973). Their conclusion from reviewing numerous studies was that on the average little predictability is gained after seven attributes are added to a multi-attribute model. This research objective was concerned with reducing the large number of attributes generated for the exploratory analysis to a small, more meaningful listing for future model formulations. In addition, the results of the analysis provide further information relevant to the conceptualization of classes of professional service attributes.

Factor analysis was used to examine the interrelationships of the 48 attributes. Table XII gives the rotated factor matrix of the 48 attributes using a varimax rotation. The rotation was terminated at the last factor with an eigenvalue in excess of 1.0. The cumulative percentage of the eigenvalues accounts for 60.4 per cent of the total variance of the 48 attributes. Final communality estimates ranged from 50.1 per cent for "has an attractive brochure design" (S13) to 72.1 per cent for "assists in getting a salary increase" (H11).

Table XIII is provided to summarize the attributes that load on each factor in excess of .5. Eleven attributes did

TABLE XII

ROTATED FACTOR MATRIX-ATTRIBUTES

Attribute/Factor	1	2	3	4	5	6	7	8	9	10	11	12	13
H1	.209	-.111	.137	.185	.635*	.023	.000	.049	.022	.119	.131	-.024	.239
H2	.010	.229	.136	.102	.084	.164	.031	.151	.020	.261	.596*	-.065	.156
H3	.354	.093	.005	.064	.234	.151	-.036	.034	.276	.463	.312	.049	.016
H4	.362	.036	.096	.039	.079	.273	-.050	-.011	.070	.624*	-.001	.077	.012
H5	-.140	.442	-.192	.281	.035	.000	.200	.315	.039	.052	.128	.171	-.028
H6	.082	.700	.037	.179	-.115	.104	.031	-.198	-.120	-.124	.155	.061	.138
H7	.024	.766*	-.074	.041	-.036	.115	.088	-.165	-.140	-.078	.074	.031	.160
H8	.097	.800*	.071	-.000	-.002	.046	.022	-.055	.011	.147	-.012	-.061	.158
H9	.114	.081	.023	.105	.690*	.168	.062	.015	.112	.177	.140	-.061	.033
H10	.034	.744*	.081	.039	.136	-.013	.045	.143	.154	-.063	.024	-.105	-.132
H11	.735*	.037	.160	.038	.098	.110	.080	.035	.207	.183	.202	-.055	-.019
H12	.098	.040	.055	.123	.299	.542*	.127	.064	-.093	.112	.220	.144	-.174
H13	.007	.694*	-.086	.043	.142	.020	.055	.221	.126	.026	.033	-.015	-.165
H14	.793*	.087	.018	-.025	.058	.085	.088	.037	.064	.201	.026	-.005	.066
H15	.719*	.038	-.013	.037	.047	.058	-.002	.089	-.045	.043	.092	.221	-.161
H16	.678*	.104	.189	-.021	.258	-.043	-.021	.141	.007	.093	-.158	.095	-.010
L1	.052	.119	.004	.979	.203	-.097	.300	.185	-.050	-.023	.247	.091	.515*
L2	.207	-.159	.458	.129	.059	.112	.001	.015	.024	.499	-.039	.003	.090
L3	.074	.094	.605*	.066	.089	.017	-.133	-.084	.041	.233	-.016	.304	-.022
L4	-.061	.107	.039	.663*	-.047	.061	-.063	.204	.046	-.006	-.004	-.091	.003
L5	.092	-.007	.033	.394	.108	-.070	.478	.101	.375	.020	-.137	-.051	.106
L6	.054	.035	.718*	.161	.109	-.060	.105	.066	.170	.122	.121	-.025	-.052
L7	.110	.135	.056	.663*	.102	.008	-.010	-.078	.077	.066	.117	-.023	.115
L8	.216	.008	.246	.011	.193	-.051	.106	.083	.106	.568*	-.011	.135	-.008
L9	.056	-.008	.691*	.010	.085	.235	.075	.132	.074	.042	.050	.302	.013
L10	.079	.146	.219	-.070	.661*	.105	.128	.072	.107	.060	-.126	.144	.128
L11	.238	.004	.584*	-.006	.148	.080	-.048	.446	.014	-.060	.169	.143	-.063
L12	.027	.185	-.051	.108	.177	-.014	.662*	.027	.104	-.001	.101	.092	.195
L13	.333	.000	.198	.048	.454	.050	-.034	.137	.075	-.055	-.070	.413	.084
L14	.235	.113	.248	.041	.022	.102	.534*	.164	.402	.145	-.082	-.100	.060
L15	.162	.000	.159	.604*	.121	.082	.300	-.090	.030	.005	-.136	.234	-.075
L16	.328	.089	.208	-.040	.146	.186	.340	.266	.182	.108	-.238	.222	.061
P1	-.046	.031	-.033	.019	.146	.081	.036	.076	.029	.093	-.037	-.046	.700*
P2	.178	-.129	.101	.030	.006	-.203	-.115	.154	.062	.171	.019	.660*	-.075
P3	-.132	.078	.093	.047	.028	-.076	.206	.286	.049	.403	.209	.397	.192
P4	.023	.025	.076	.063	.127	.003	.042	-.035	.682*	.125	.101	.255	.081
P5	.105	.023	.081	.111	.020	.075	.199	.597*	.008	.195	.106	.075	.141
P6	.149	.016	.145	.008	.073	.106	-.117	.747*	.008	-.093	-.000	.223	.105
P7	.065	.033	.193	-.055	.022	.139	.164	.141	.084	-.000	.071	.669*	.051
P8	.193	.504*	.066	.015	.191	.182	-.022	.270	.142	.167	-.141	.024	.122
P9	.170	.037	.187	-.071	.036	.087	.113	.036	.327	-.188	.556*	.193	-.086
P10	.002	.147	.071	.055	.165	.683*	-.008	.106	.125	.056	.054	-.073	.151
P11	.240	.011	.383	-.052	.247	-.019	.078	-.005	.506*	.164	.051	-.007	.093
P12	-.093	.269	-.045	-.073	.228	.235	.142	.353	.122	.268	.023	.227	.247
P13	.356	-.062	.218	.025	.065	.190	.216	.107	.081	.156	-.100	.420	-.073
P14	.084	.071	.078	.330	-.029	.266	.085	.079	.554*	.016	.078	-.000	-.101
P15	.464	.039	.143	.192	-.015	.230	-.166	-.184	.132	-.090	-.070	.336	.199
P16	.134	.201	-.042	.023	-.180	.466	.006	.207	.192	-.097	-.019	.132	.469

Eigenvalues

	1	2	3	4	5	6	7	8	9	10	11	12	13
	3.594	3.669	2.739	1.866	2.305	1.698	1.675	2.245	1.918	2.032	1.347	2.275	1.607

Percentage Explained

	1	2	3	4	5	6	7	8	9	10	11	12	13
	.075	.076	.057	.039	.048	.035	.035	.047	.040	.042	.029	.048	.033

Cumulative Percentage

	1	2	3	4	5	6	7	8	9	10	11	12	13
	.075	.151	.208	.247	.295	.330	.365	.412	.452	.494	.523	.571	.604

*Loadings over .5 within factors.

TABLE XIII

FACTOR DIMENSIONS -- ATTRIBUTES

Factor	Attribute	Per Cent Explained	Dimension
1	H11-assists in getting salary increase H14-increases promotion potential H15-assists in career change H16-offers potential behavioral change	7.5	Career
2	H 6-increases job knowledge H 7-enhances skill development H 8-improves job efficiency H10-increases general ability H13-increases general knowledge P 8-administrative efficiency	7.6	Knowledge
3	L 3-is held at resort location L 6-has meals provided L 9-is held in a hotel L11-is held on university campus	5.7	Location
4	L 4-length-one day, two days, etc. L 7-time of year, month, week L15-is held on a week day	3.9	Timing
5	H 9-provides idea exchange L10-uses case method	4.8	Instruction Method
6	H12-type of audience attending P10-sponsor's reputation	3.5	Audience
7	L12-provides a workbook or textbook L14-has comfortable classrooms	3.5	Materials
8	P 5-is sponsored by a university P 6-is taught by a university professor(s)	4.7	Sponsor
9	P 4-provides refund policy P11-offers discounts for multiple enrollments P14-registration fee	4.0	Cost
10	H 4-helps build business contacts L 8-has exhibitors present	4.2	Social
11	H 2-is an established program P 9-awards college credit, certificates, CEU's	2.9	Certification
12	P 2-is advertised in a newspaper P 7-is advertised in catalogue or brochure	4.8	Promotion
13	L 1-is presented in a lecture format P 1-is taught by industrial specialists	3.3	Instruction

not load high enough on a factor to be included, e.g.,
"increases personal status (H3), "is an informational update"
(H5), "is held at resort location" (L3), "is offered on week-
ends or evenings" (L5), "uses role playing exercises" (L13),
"uses audio-visual presentations" (L16), " is advertised in
personal letter" (P3), "is taught by consultants" (P12), "has
attractive brochure design" (P13), "is recommended by an
associate" (P15) and "instructor's credentials" (P16). All
other attributes loaded on only one of the factors.

The highest loaded attributes are the best indicators
of whatever holds the group together, e.g., factor definers
or dimensions. Factor one and two accounted for a total of
15 per cent of the 60 per cent variation explained in the
analysis. Both factors are made up of high level intrinsic
attributes where factor one groups attributes that relate to
career enhancement and factor two groups attributes that
relate to increasing knowledge, abilities and skills.

Factors three and four are combinations of low level
attributes and represent program location and timing dimen-
sions, respectively. Factor five included an H and L attri-
bute and seems to represent a instructional method dimen-
sion. Factors six and seven are not easily interpreted.
Factor six included H and P attributes and might be referred
to as an expected program audience dimension while seven
relates to program materials. Factor eight is represented
by two purchasing attributes and represents a sponsor
dimension.

Factor nine, also made up of purchasing attributes, relates to program costs. Factor ten combines H and L attributes into a social dimension and eleven combines H and P attributes into a program certification dimension. Factor twelve ranked fourth in explanation of the variance and is an advertising or program promotion dimension. The last factor, thirteen, combines L and P attributes into what seems to be a program instruction dimension.

The factor analysis produced 13 factors that provide appealing prospects for future model formulation. Although some factors were difficult to synthesize, most lead to rational groupings. The dimensions generated also add further evidence that attributes may be conceptualized in different classes. Factors one and two were combined primarily of high level intrinsic attributes. Factors three and four were combined from low level intrinsic attributes. Extrinsic purchasing attributes combined to form factors eight, nine, and twelve and weighed heavily in factors eleven and thirteen. The variance explained by these factors is: (1) high level (factors three and four) 15.1 per cent, (2) low level (factors three and four) 9.6 per cent, and (3) extrinsic (factors eight, nine, and twelve) 13.5 per cent. These data also lend support to the hierarchical importance of the attribute classes.

The previous analysis was performed using the Consideration Scale responses. The analysis was also performed using the Quality Scale values. In this analysis, 13 factors were also identified, explaining 62.3 per cent of the

variation in the data set. Factor one contained many of the same high level attributes as factor two, the knowledge dimension identified in the previous analysis. Factor two contained low level attributes similar to the location dimension but included resort and social hours and would represent more of a social dimension. Factor three was similar to the career factor. Factor four was similar to the sponsor factor and contained many attributes related to university attributes. Factor five contained extrinsic attributes not grouped in a meaningful dimension. Factor six matched the instruction method dimension identified earlier as factor five. Factor seven related to the cost dimension, factor eight related to the timing dimension, factor nine contained similar advertising or promotion attributes, and factor ten also represented a timing dimension. Factor eleven represented an instruction materials dimension and factor twelve represented a cost dimension. Factor thirteen identified an interaction dimension not included in the previous analysis. The results of the factor analysis using the Quality Scale identified very similar dimensions to those identified using the Consideration Scale, although the attributes seemed to be more discernable in the first analysis.

Research Objective Six

The last research objective was concerned with comparing respondents' experience, employment, and demographic

variables with attribute evaluations. Of special interest in this analysis was the potential significance of past purchase behavior. Buyers of more programs may use different attributes in selecting professional development programs than do those who attend less frequently.

In addition to this specific analysis, the results derived from research objective two provided a clue to other analyses that were included. From the previous GLM analysis of attribute levels, five experience, employment, and demographic variables were found to contain significant differences in overall mean attribute ratings. These five variables--

III.1   number of programs attended per year

IV.1   number of employees your firm employs

IV.3   position level in firm

IV.5   number of years of education

IV.6   sex

--were logical candidates for further analysis.

Discriminant analysis was used to provide further information regarding respondents' evaluation of the three classes of attributes hypothesized to exist in this study. Discriminant analysis is an appropriate technique to determine if groups within these variables differ from one another on attribute level consideration and to understand the nature of these differences. The groups were dichotomized for each of the five variables based upon the groupings found significant in the GLM analysis when all attribute classes were considered together.

Table XIV shows that there is a weak relationship between the number of programs attended during a year and the attribute classes at the .05 level. The proportion of cases correctly classified and the estimate of variance explained by the function are 58.6 per cent and 1.1 percent, respectively. Using Morrison's (1969) $C_{max.}$, 73.9 percent of the cases could have been correctly classified by chance. H and P attributes are considered more important in the purchase decision to respondents who buy fewer programs, and H attributes are nearly three times as important as P attributes. The consideration of L attributes is not seen as significantly different among the groups. It was thought that buyers of more programs, assumed to be more experienced in the purchases of professional development programs, would give more consideration to all three levels of attributes. These results, while weak, are contrary to the expected and support the contention that those who buy fewer programs give more careful consideration to H and P attributes from lack of experience in the purchasing of this type service.

Table XV provides the discriminant analysis results when the respondents were divided between those who are employed in firms employing 10 or fewer employees as opposed to those who employ more than 10, a firm size dimension. The results show that there is a weak relationship between the firm size and the attribute ratings. Those who work for smaller firms give less consideration to H and L attributes and more consideration to P attributes when selecting professional development programs. Both groups, however, consider H and

TABLE XIV

DISCRIMINANT ANALYSIS - NUMBER OF PROGRAMS
ATTENDED PER YEAR

| Item | Number of Programs | | F-Ratio | $P \leq F$ | Standardized Discriminant Coefficients |
	1-3*	4-6**			
I. Overall significance of function			7.62	.022	
II. High Level Intrinsic (H)	36.4***	38.7	6.58	.011	1.20
Low level Intrinsic (L)	46.7	48.1	.67	--	--
Extrinsic Purchasing (P)	42.9	43.5	3.84	.020	.47

III. Proportion of cases correctly classified by the discriminant function: 58.6% [$C_{max.}$ = 73.9% (Morrison 1969)]

IV. Estimate of the amount of variance explained by the discriminant function: $\hat{w}^2_{multi}$ = .011. (Winn and Lutz 1973)

    * N = 362
  ** N = 128
*** Mean computed values aggregated by attribute classes

TABLE XV

DISCRIMINANT ANALYSIS - NUMBER OF EMPLOYEES EMPLOYED

Item	Number of Employees		F-Ratio	P$\leq$F	Standardized Discriminant Coefficients
	$\leq$ 10*	>10**			
I. Overall significance of function			43.96	.001	
II. High Level Intrinsic (H)	39.4***	35.5	24.19	.001	1.15
Low Level Intrinsic (L)	48.1	46.5	15.32	.001	.33
Extrinsic Purchasing (P)	42.8	43.2	21.80	.001	-1.00

III. Proportion of cases correctly classified by the discriminant function: 65.10% ($C_{max.}$ = 77.6%)

IV. Estimate of the amount of variance explained by the discriminant function: $\hat{w}^2_{multi}$ = .084

   * N = 182
  ** N = 308
*** Mean computed values aggregated by attribute classes

P attributes about three times as important as L attributes.

Table XVI provides the results of different position levels within the firm. H and P attributes are considered more important by those in lower positions within the firm. No significant difference was found in the way the groups view the L attributes. H attributes were about three times more important than the P attributes.

The next analysis divided the respondents by education levels (Table XVII). Those with 15 or fewer years of education were grouped together and those with 16 or more years of education were grouped together. The only significant difference between the groups was that H attributes were considered as more important by those at lower education levels.

The last background variable analyzed by discriminant analysis was male and female responses. Table XVIII shows that females give more consideration to all attribute classes than do males. H and P attributes are considered about twice as important as L attributes.

From the above analysis, several program experience, employment, and demographic variables do have an impact upon the amount of consideration given to attribute classes. Although many significant differences were noted, the amount of variance explained and the per cent of cases properly classified by the discriminant functions were low. In an effort to profile these differences, respondents who are female, who have less education, who are at lower firm position levels, who work for larger firms, and who

TABLE XVI

DISCRIMINANT ANALYSIS - POSITION LEVEL IN FIRM

| | Position Level | | | | Standardized |
| | Lower | Higher | | | Discriminant |
Item	Level*	Level**	F-Ratio	P$\leq$F	Coefficients
I. Overall significance of function			23.69	.001	
II. High Level Intrinsic (H)	34.5***	38.3	22.05	.001	1.17
Low Level Intrinsic (L)	45.6	47.8	.66	--	--
Extrinsic Purchasing (P)	42.2	43.4	12.14	.001	- .38

III. Proportion of cases correctly classified by the discriminant function: 58.9% ($C_{max.}$ = 66.5%)

IV. Extimate of the amount of variance explained by the discriminant function: $\hat{w}^2_{multi}$ = .045

* N = 164
** N = 326
*** Mean computed values aggregated by attribute classes

TABLE XVII

DISCRIMINANT ANALYSIS - EDUCATION LEVEL

Item	Years of Education		F-Ratio	$P \leq F$	Standardized Discriminant Coefficients
	≤ 15*	≥ 16**			
I. Overall significance of function			29.37	.001	
II. High Level Intrinsic (H)	34.4***	38.6	30.30	.001	1.00
Low Level Intrinsic (L)	45.6	48.1	.69	--	--
Extrinsic Purchasing (P)	41.8	43.8	.66	--	--

III. Proportion of cases correctly classified by the discriminant function: 62.0% ($C_{max.}$ = 60.6%)

IV. Estimate of the amount of variance explained by the discriminant function: $\hat{w}^2_{multi}$ = .056

* N = 193
** N = 297
*** Mean computed values aggregated by attribute classes

TABLE XVIII

DISCRIMINANT ANALYSIS - SEX

Item	Sex		F-Ratio	P$\leq$F	Standardized Discriminant Coefficients
	Male*	Female**			
I. Overall significance of function			29.25	.001	
II. High Level Intrinsic (H)	38.6***	34.8	24.18	.001	.73
Low Level Intrinsic (L)	48.0	45.8	14.09	.001	-.37
Extrinsic Purchasing (P)	44.5	41.0	10.04	.001	.64

III. Proportion of cases correctly classified by the discriminant function: 59.8% ($C_{max.}$ = 57.6%)

IV. Estimate of the amount of variance explained by the discriminant function: $\hat{w}^2_{multi}$ = .056

* N = 282
** N = 208
***Mean computed values aggregated by attribute classes

attend fewer programs per year give more consideration to all the attribute classes than do their opposites. The same hierarchical arrangement of attribute types was demonstrated in each analysis although some were not significant. H attributes were considered the most important and in several analyses seen as two or three times as important as P and L attributes.

When this same analysis was performed using the Quality Scale, very similar results were obtained. Some of the exceptions were that H and L attributes helped discriminate between program attendance groups rather than H and P attributes. H and P attributes helped discriminate between the firm size groups rather than H, L, and P attributes using the Consideration Scale. H attributes discriminated between position levels using the Quality Scale, where H and P attributes were significant using the Consideration Scale. H and P attributes were significant discriminators of education level, where only H attributes were significant using the Consideration Scale. H, P, and L attributes were significant using the Quality Scale on the sex variable. This was consistent with the Consideration Scale analysis. The direction of H, P, and L attribute mean values was similar for both scales. H attributes contributed more quality to the programs than P attributes, and P attributes contributed more quality than L attributes.

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this study was to generate a conceptual framework for/and measure empirically determinant professional service attributes. The research was exploratory and served to provide preference model formulation implications for professional service attribute research. The study outlined a procedure for identifying attributes and attribute classes of a professional service and determine the importance of each. Through testing, the study revealed that a hierarchy of attribute classes is perceived to exist. High level intrinsic attributes are considered more important in the selection of professional development programs, followed by extrinsic purchasing attributes and low level intrinsic attributes, respectively. It was also discovered that there is little meaningful interpretation of the relationship between these attribute classes. The ideas that extrinsic attributes serve as surrogates of intrinsic attributes and that low level attributes form to explain the service received in the form of high level attributes was weakly supported by this analysis.

Other outcomes of this study provide useful input for future model construction efforts involving professional

services attributes. The number of attributes can be reduced to several meaningful dimensions while retaining the hierarchical attribute structure. Prior purchase experience, employment, and demographic variables do make a difference in the manner that respondents consider attributes when selecting professional development programs. The results of this study provide understanding to attribute identification and structure for a professional service. The results also suggest marketing strategy implications for the seller of professional development programs.

Overview of the Study

The development of marketing concepts and models for services and particularly professional services is vague and fragmented. In many studies, the finding related to understanding professional services marketing resulted as secondary outcomes in the analyses of other concepts. The lack of empirical evidence concerning professional services marketing provided the motivation for this study. Since buyers value goods and services for the attributes they possess, professional services attributes were considered as the focal point of the study.

The framework for conceptualizing professional services attributes relates to a recent stream of economic thought regarding product characteristics. The attributes which directly or indirectly influence a buyer's evaluation of a specific professional service were identified at two levels.

Basic identifiable (physical) features were classified as low level intrinsic attributes, and abstractions of the basic attributes to higher levels of performance or service performed for the buyer were classified as high level intrinsic attributes. Another group of attributes that are important to buyer decision making are those supplier attributes not intrinsic to the professional service itself. These attributes were identified as extrinsic purchasing (supplier) attributes.

Six research objectives were identified and guided in the accomplishment of the stated purpose of the study.

1. A comprehensive listing of attributes for professional development programs was generated that included high level intrinsic attributes, low level intrinsic attributes, and extrinsic supplier attributes.

2. The attributes buyers consider when selecting a professional development program were identified, and the quality contribution of each attribute to the program was measured.

3. Individually and collectively, high level intrinsic attributes were found to be more important to the purchase decision, followed by extrinsic purchasing attributes and low level intrinsic attributes, respectively. A hierarchical arrangement of the attribute classes was apparent in this study.

4. High level attributes correlate with low
   level attributes but it was difficult to
   find a meaningful explanation for this
   relationship from those attributes forming
   the complex. Similarly, intrinsic
   attributes correlated with extrinsic
   attributes but the complex provided little
   interpretive meaning.

5. The complete listing of attributes was
   reduced to meaningful dimensions and the
   three classifications and levels of
   attributes retained their groupings and
   order.

6. Professional program purchase experience, size
   of employer, position level, educational level,
   and sex variables were important in the evalu-
   ation of attribute determinance.

The methodology of the study consisted of gathering data
from three groups of respondents. Initially, a group of
eight judges generated the comprehensive listing of attri-
butes and later provided the classification for each attri-
bute. In the second phase, a group of eighteen past program
purchasers completed the pretest instrument. The third
phase of the study resulted in 490 completed self-
administered mail questionnaires. The respondents consisted
of past purchasers of Oklahoma State University's profes-
sional development programs offered through the Office of

Business Extension. From analysis of the background and
demographic variables, the respondents were found to attend
3 professional development programs per year and spend an
average of one to two days in each of these programs.
Seventy-five to 100 per cent of the program registration fee
is paid by the employer. A majority of the respondents work
for firms in the service industry that employ fewer than 50
employees. Most of the respondents are in middle to higher
levels of management, are between 31 and 50 years of age,
and average 16 years of education. The sample contained 58
per cent males and 42 per cent females.

The questionnaire obtained two measures of the profes-
sional development program attribute listing. One measure
asked respondents to indicate the degree of consideration
they give each attribute when evaluating whether to attend a
professional development program, the Consideration Scale.
The second measure, the Quality Scale, requested respondents
to indicate the degree of quality they felt each attribute
contributed to the overall program. Two other portions of
the questionnaire obtained measures of program buying
experiences, employment, and demographic information. Tests
of the data were conducted using means, frequency, t tests,
correlations, analysis of variance, canonical correlation
analysis, factor analysis, and discriminant analysis.

The Research Results

The first research objective was accomplished through the use of eight experts. They assisted in the generation of over 100 attributes that might be used by potential purchasers in the selection of professional development programs. After refinement and editing, this same group classified 81 attributes as high level intrinsic (H), low level intrinsic (L), and extrinsic purchasing (P) attributes, according to definitions provided by the author. These 81 attributes were also used in the pretest instrument. From these two activities, 48 attributes were identified for inclusion in the survey instrument. Two criteria were instrumental in deciding the attributes that remained:

1. six or more judges had to agree upon the classification level; and,

2. no attributes considered of major importance in the pretest were eliminated.

The Consideration Scale and Quality Scale were found to provide very similar results in determining the attributes that buyers use and value in selecting professional development programs (r_s = .85 at the .01 level of significance). Because of straight line responsing, the Consideration Scale was used as the basis for answering the remainder of the research questions. The Quality Scale was also analyzed and referenced with each analysis. In the rankings of mean response values on both scales, H attributes tended to dominate the higher rankings. P attributes, although spread

through the rankings, tended toward the middle rankings and L attributes dominated the lower rankings.

This hierarchical arrangement of the attribute classes was tested further in research objective three by an analysis of variance. The means for H, L, and P attribute computed values were found to be significantly different at the .0001 level for each group. H attributes were given more consideration by respondents, followed by P attributes and L attributes, confirming a hierarchical classification scheme for viewing professional development program attributes. When adding the buyer experience, employment, and demographic variables to the analysis, no interactive effects were found to exist.

A canonical analysis of H and L attributes produced five significant (at the .0001 level) canonical correlation roots. The first linear combination explained 50.2 per cent of the variation in complex of H and L attributes. This weak relationship was difficult to explain, given the three H attributes and four L attributes principally involved. The L attributes involved social and interactive aspects, and these correlated positively to H attributes of building business contacts and behavioral change and negatively to skill development. Although weak and vague, there is some evidence that L attributes do form to represent the H attributes that are valued by buyers. Other canonical roots were not explained because of little explanatory power and meaningful explanation.

H and L intrinsic attributes were then combined and correlated with extrinsic purchasing attributes using canonical analysis. Nine canonical roots were found significant at the .001 level. The first root explained 64.7 per cent of the variation in two sets of attributes, slightly stronger than with H and L attributes. Extrinsic purchasing attributes do form to explain some of the intrinsic attributes. The strongest combination relates L attributes and P attributes, although weights of these attributes were very low. The only explanation for the relationship between L and P attributes involved university program attributes. The idea that P attributes are surrogate for H and L attributes cannot be interpreted from this analysis. If P attributes such as registration fee, sponsor's reputation, and the marketing variables had related to H and L attributes, there would be more reason to believe that supplier characteristics represent attributes intrinsic to professional development programs. The other canonical roots were not formally examined, but cursory examination found these to be as confusing as the analysis of the most related linear combination. Very little can be concluded from this phase of the study other than that H, L, and P attributes are related.

The factor analysis of the 48 attributes resulted in thirteen factors that explained 60.4 per cent of the variation. The first two factors explained 15.1 per cent of the variation and were H attributes. These factors seemed to explain a career dimension and a knowledge dimension. P

attributes dominated three factors and accounted for 13.5
per cent of the variation. These dimensions were identifed
as sponsor, cost, and promotion. L attributes clearly domi-
nated three factors and seemed to relate to program loca-
tion, timing, and material. These three factors accounted
for 13.1 per cent of the variation. The remaining five fac-
tors represented combinations of H, L, and P attributes and
accounted for 18.7 per cent of the explained variance.
These factors were identified as instruction method, program
audience, social, certification, and instruction. The eight
factors that grouped around H, L, and P attributes provide
further evidence of the existence of levels of program
attributes and that they are considered differently in the
purchasing decision.

The final analysis examined respondents' attribute
evaluations, given program buying experience, employment,
and demographic variables using discriminant analysis. Five
of the nine variables were used in this analysis because of
significant differences found in overall attribute evalua-
tions when these variables were added to the analysis of
variance tested previously. Significant differences were
found to exist in the degree of consideration given by
respondents to H, L, and P when the respondents were grouped
by varying number of programs attended, employment size of
firm, position level, education, and sex. Basically, those
who attend fewer programs, work for larger firms, are in
lower level positions, have less education, and are female

give more consideration to all three attribute classes in making their program selection decision. The hierarchical direction of the three attributes is the same over all groups, e.g., H is given the most consideration followed by P and L, respectively.

Implications of the Study

The research effort offers several implications related to services attributes, multi-attribute professional services models, and the marketing strategy for professional development programs.

The concept of goods and services attributes has traditionally been defined in terms of consumer subjective judgments directed toward features possessed by a product or service. Attributes have ranged from abstract and subjective perceptions of features to specific purchasing criteria. The results of this study lend support to the conceptualization of different classifications implied by Lancaster (1966, 1971, 1976), Cowling and Cubbins (1971), Maynes (1976), and Geistfeld, Sproles, and Badenhop (1977). Lower level intrinsic attributes were differentiated from higher level intrinsic attributes, and intrinsic attributes were differentiated from extrinsic attributes. A hierarchical arrangement of these attribute classes was found to exist for a professional service. Buyers gave more consideration in their purchase decision to higher level intrinsic attributes, followed by consideration to extrinsic attributes

and lower level intrinsic attributes. These results are consistent with Geistfeld, Sproles, and Badenhop's (1977) goods classification study, although their analysis included only intrinsic attributes. The addition of a second place position in the hierarchy for the extrinsic attributes is a unique contribution of this research effort.

The conceptualization of a hierarchy of professional services attributes has buyer information program implications. Attention should be given to stress higher level intrinsic attributes, e.g., those higher level abstract performance or service characteristics which give rise to utility. This contention is in opposition to Shostack (1977) who suggests that service marketers' highest priorities should be the management and manipulation of tangible evidence. Since there does appear to be some relationship between lower level and higher level intrinsic attributes and intrinsic and extrinsic attributes, information programs should not overlook the less important attributes, but see that the lower level and extrinsic attributes support the higher level information content.

The evidence of this study also suggests that the more unsophisticated buyer gives more consideration to all attributes than does the more sophisticated buyer. More attribute information may be called for in reaching these markets. The hierarchical arrangement of attribute consideration was similar for both groups.

In terms of multi-attribute service models, this study

outlined a procedure for attribute identification and classification when little is known about the number of attributes or attribute structures of a service. The procedure demonstrated that the intangibility of a service can be handled in multi-attribute model formation, although not as neatly as in the physical goods models.

A number of implications are available for the marketer of professional development programs. The examination of the consideration given various attributes by buyers of professional development programs gives specific clues as to what attributes these buyers value in making their purchase decision.

Future Research Directions

This study has provided an exploratory examination into multi-attribute model formulation of a professional service. Many fruitful areas of research are available for further study. This was only the second attempt to test empirically the concept of different levels or classifications of attributes. The other study viewed a physical product and considered only intrinsic levels of attributes. This study focused on a professional service and included the extrinsic attributes. Direct comparisons are difficult to make other than that the concept of classes of attributes seems useful in multi-attribute models of buyer behavior. Other studies with different products or services seem needed to clarify the hierarchical framework. In addition, the

interrelationships of the classes of attributes need to be clarified. Research would also be valuable where buyer demographics and psychographics could be studied in conjunction with attribute classes and class structure, since different buyers seem to process attribute class information differently.

Lastly, a logical extension of this study would be to formulate the reduced attribute list and class set into an information processing model. This methodology would be of great value in tracing the sequential search of attributes and implications associated with class and hierarchical attribute structure.

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112

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APPENDIXES

APPENDIX A

PROFESSIONAL DEVELOPMENT PROGRAM

PLANNING SURVEY

Oklahoma State University

COLLEGE OF BUSINESS ADMINISTRATION

STILLWATER, OKLAHOMA 74078
(405) 624-5064

November 16, 1981

As a former participant in our
professional development programs...

Please help us provide you better
programs by completing this...

PROFESSIONAL DEVELOPMENT PROGRAM PLANNING SURVEY

The Office of Business Extension seeks your assistance in completing the following brief
questionnaire related to your attending continuing education or professional development
programs, seminars, workshops and conferences. Your name was selected from among
the many individuals who have attended one of our professional development programs
during the past several years.

We are interested in your opinions regarding the items you feel are important when making
your decision to attend these short duration noncredit programs. Your responses will
be treated confidentially and the aggregated results used to assist our office in planning future
professional development programs that better meet your needs. In addition, the results
will be used as part of a graduate research project.

If you'll take five minutes to complete the next three pages, we will appreciate it very much. A
postage paid, return envelope is enclosed for your convenience in returning the completed
questionnaire.

Thank you.

James Hromas
Director

I.

Listed below are a number of items that you might consider in deciding whether or not to attend a professional development program. Please indicate the "degree of consideration" you give each item when deciding whether to attend a program by checking the appropriate description provided. If you "always consider" the item, mark the far left space. If you "never consider" the item, mark the far right space. If your consideration differs from either of the extremes, mark the appropriate space. For example, if you "usually consider" this item in deciding to attend a program, mark:

_____ ;	__X__ ;	_____ ;	_____ ;	_____ ;
Always consider	Usually consider	Sometimes consider	Seldom consider	Never consider

Always Consider ←——————→ Never Consider

THE PROGRAM:

	Always Consider				Never Consider
-is presented in a lecture format	___ ;	___ ;	___ ;	___ ;	___ ;
-has social hours	___ ;	___ ;	___ ;	___ ;	___ ;
-is taught by industrial specialists	___ ;	___ ;	___ ;	___ ;	___ ;
-promotes participant interaction	___ ;	___ ;	___ ;	___ ;	___ ;
-is advertised in a newspaper	___ ;	___ ;	___ ;	___ ;	___ ;
-is held at resort location	___ ;	___ ;	___ ;	___ ;	___ ;
-length - one day, two day, etc.	___ ;	___ ;	___ ;	___ ;	___ ;
-is offered on weekends or evenings	___ ;	___ ;	___ ;	___ ;	___ ;
-has meals provided	___ ;	___ ;	___ ;	___ ;	___ ;
-is an established program	___ ;	___ ;	___ ;	___ ;	___ ;
-is advertised in personal letter	___ ;	___ ;	___ ;	___ ;	___ ;
-time of year, month, week	___ ;	___ ;	___ ;	___ ;	___ ;
-provides refund policy	___ ;	___ ;	___ ;	___ ;	___ ;
-increases personal status	___ ;	___ ;	___ ;	___ ;	___ ;
-has exhibitors present	___ ;	___ ;	___ ;	___ ;	___ ;
-helps build business contacts	___ ;	___ ;	___ ;	___ ;	___ ;
-is sponsored by a university	___ ;	___ ;	___ ;	___ ;	___ ;
-is an informational update	___ ;	___ ;	___ ;	___ ;	___ ;
-is taught by a university professor(s)	___ ;	___ ;	___ ;	___ ;	___ ;
-increases job knowledge	___ ;	___ ;	___ ;	___ ;	___ ;
-is advertised in catalogue or brochure	___ ;	___ ;	___ ;	___ ;	___ ;
-is held in a hotel	___ ;	___ ;	___ ;	___ ;	___ ;
-enhances skill development	___ ;	___ ;	___ ;	___ ;	___ ;
-administrative efficiency	___ ;	___ ;	___ ;	___ ;	___ ;
-improves job efficiency	___ ;	___ ;	___ ;	___ ;	___ ;
-awards college credit, certificates, CEU's	___ ;	___ ;	___ ;	___ ;	___ ;
-provides idea exchange	___ ;	___ ;	___ ;	___ ;	___ ;
-uses case method	___ ;	___ ;	___ ;	___ ;	___ ;
-sponsor's reputation	___ ;	___ ;	___ ;	___ ;	___ ;
-is held on university campus	___ ;	___ ;	___ ;	___ ;	___ ;
-increases general ability	___ ;	___ ;	___ ;	___ ;	___ ;
-offers discounts for multiple enrollments	___ ;	___ ;	___ ;	___ ;	___ ;
-assists in getting a salary increase	___ ;	___ ;	___ ;	___ ;	___ ;
-provides a workbook or textbook	___ ;	___ ;	___ ;	___ ;	___ ;
-type of audience attending	___ ;	___ ;	___ ;	___ ;	___ ;
-increases general knowledge	___ ;	___ ;	___ ;	___ ;	___ ;
-is taught by consultants	___ ;	___ ;	___ ;	___ ;	___ ;
-uses role playing exercises	___ ;	___ ;	___ ;	___ ;	___ ;
-has attractive brochure design	___ ;	___ ;	___ ;	___ ;	___ ;
-increases promotion potential	___ ;	___ ;	___ ;	___ ;	___ ;
-has comfortable classrooms	___ ;	___ ;	___ ;	___ ;	___ ;
-registration fee	___ ;	___ ;	___ ;	___ ;	___ ;
-is held on a work day	___ ;	___ ;	___ ;	___ ;	___ ;
-is recommended by an associate	___ ;	___ ;	___ ;	___ ;	___ ;
-instructor's credentials	___ ;	___ ;	___ ;	___ ;	___ ;
-assists in career change	___ ;	___ ;	___ ;	___ ;	___ ;
-uses audio-visual presentations	___ ;	___ ;	___ ;	___ ;	___ ;
-offers potential behavioral change	___ ;	___ ;	___ ;	___ ;	___ ;

II.

Listed below are the same items you encountered in question one. Please indicate how you feel each item affects the overall quality of the program. If you feel the item "greatly increases" the quality of the program, mark the far left space. If you feel the item "slightly decreases" the quality of the program, mark the far right space. If you feel the effect on quality differs from either of the extremes, mark the appropriate space. For example, if you feel the item "slightly increases" the quality of the program mark:

____ ;	____ ;	__X__ ;	____ ;	____ ;
Greatly increases quality	Somewhat increases quality	Slightly increases quality	No effect on quality	Slightly decreases quality

Greatly increases quality ←————————→ Slightly decreases quality

THE PROGRAM:

- has meals provided .... ___ ; ___ ; ___ ; ___ ; ___
- increases personal status.................. ___ ; ___ ; ___ ; ___ ; ___
- is advertised in a newspaper............... ___ ; ___ ; ___ ; ___ ; ___
- awards college credit, certificates, CEU's ..... ___ ; ___ ; ___ ; ___ ; ___
- offers potential behavioral change .... ___ ; ___ ; ___ ; ___ ; ___
- increases general ability .... ___ ; ___ ; ___ ; ___ ; ___
- increases job knowledge .... ___ ; ___ ; ___ ; ___ ; ___
- is advertised in personal letter .... ___ ; ___ ; ___ ; ___ ; ___
- length-one day, two day, etc. .... ___ ; ___ ; ___ ; ___ ; ___
- is presented in a lecture format .... ___ ; ___ ; ___ ; ___ ; ___
- promotes participant interaction .... ___ ; ___ ; ___ ; ___ ; ___
- is an informational update .... ___ ; ___ ; ___ ; ___ ; ___
- provides refund policy .... ___ ; ___ ; ___ ; ___ ; ___
- uses role playing exercises .... ___ ; ___ ; ___ ; ___ ; ___
- is held on a work day..................... ___ ; ___ ; ___ ; ___ ; ___
- increases promotion potential .... ___ ; ___ ; ___ ; ___ ; ___
- provides a workbook or textbook .... ___ ; ___ ; ___ ; ___ ; ___
- increases general knowledge .... ___ ; ___ ; ___ ; ___ ; ___
- enhances skill development .... ___ ; ___ ; ___ ; ___ ; ___
- is taught by industrial specialists .... ___ ; ___ ; ___ ; ___ ; ___
- sponsor's reputation .... ___ ; ___ ; ___ ; ___ ; ___
- instructor's credentials .... ___ ; ___ ; ___ ; ___ ; ___
- helps build business contacts .... ___ ; ___ ; ___ ; ___ ; ___
- provides idea exchange .... ___ ; ___ ; ___ ; ___ ; ___
- is advertised in catalogue or brochure .... ___ ; ___ ; ___ ; ___ ; ___
- is offered on weekends or evenings .... ___ ; ___ ; ___ ; ___ ; ___
- has comfortable classrooms .... ___ ; ___ ; ___ ; ___ ; ___
- is held at resort location .... ___ ; ___ ; ___ ; ___ ; ___
- improves job efficiency................... ___ ; ___ ; ___ ; ___ ; ___
- assists in getting a salary increase .... ___ ; ___ ; ___ ; ___ ; ___
- uses audio-visual presentations .... ___ ; ___ ; ___ ; ___ ; ___
- is an established program .... ___ ; ___ ; ___ ; ___ ; ___
- is taught by a university professor(s) .... ___ ; ___ ; ___ ; ___ ; ___
- administrative efficiency .... ___ ; ___ ; ___ ; ___ ; ___
- has social hours......................... ___ ; ___ ; ___ ; ___ ; ___
- is taught by consultants .... ___ ; ___ ; ___ ; ___ ; ___
- assists in career change .... ___ ; ___ ; ___ ; ___ ; ___
- has attractive brochure design .... ___ ; ___ ; ___ ; ___ ; ___
- uses case method........................ ___ ; ___ ; ___ ; ___ ; ___
- is held in a hotel........................ ___ ; ___ ; ___ ; ___ ; ___
- time of year, month, week .... ___ ; ___ ; ___ ; ___ ; ___
- is recommended by an associate .... ___ ; ___ ; ___ ; ___ ; ___
- registration fee.......................... ___ ; ___ ; ___ ; ___ ; ___
- type of audience attending .... ___ ; ___ ; ___ ; ___ ; ___
- is held on university campus .... ___ ; ___ ; ___ ; ___ ; ___
- has exhibitors present .... ___ ; ___ ; ___ ; ___ ; ___
- offers discounts for multiple enrollments ..... ___ ; ___ ; ___ ; ___ ; ___
- is sponsored by a university .... ___ ; ___ ; ___ ; ___ ; ___

III.

Please answer these questions about your attendance at professional development programs *excluding* in-house programs sponsored by your firm. Please check the appropriate space.

1. Approximately how many professional development programs do you attend per year?

    ____1;   ____2;   ____3;   ____4;   ____5;   ____6 or more

2. Approximately how many days are spent attending professional development programs per year?

    ____1-2;   ____3-4;   ____5-6;   ____7-8;   ____9-10;   ____11-12;   ____13-14;   ____15 or more

3. Approximately what percentage of the professional development program registration fee is paid by your firm?

    ____0;   ____1-25%;   ____26-50%;   ____51-75%;   ____76-100%

IV.

Please answer these questions related to your firm and your background.

1. What is the approximate number of employees your firm employs?

    ____0-10;   ____11-50;   ____51-100;   ____101-200;   ____201-500;   ____501 or more

2. What type of industry is your firm representing?

    ____service   ____manufacturing   ____wholesaling   ____retailing   ____extractive industries   ____other

3. What is your position level in your firm?

    ____nonsupervisory;   ____supervisory;   ____mid-management;   ____top level management

4. What is your age group?

    under 21;   22-30;   31-40;   41-50;   51-60;   60 or more

5. Circle the number of years of education which you have completed.

    12   13   14   15   16   17   18   19   20 or more

6. Sex: ____Male   ____Female

Thank you very much for taking the time to answer these questions. Please return in the postage paid, return envelope or send to: Business Extension, 215 College of Business Administration, Stillwater, OK 74078.

APPENDIX B

TEMPORAL ORDER T TEST OF 106

QUESTIONNAIRE VARIABLES

TTEST PROCEDURE

VARIABLE: H1

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.60816327	1.12421862	0.07182369	1.00000000	5.00000000	UNEQUAL	1.9246	487.0	0.0549
2	245	2.40816327	1.17554255	0.07510265	1.00000000	5.00000000	EQUAL	1.9246	488.0	0.0549

FOR H0: VARIANCES ARE EQUAL, F'=   1.09 WITH 244 AND 244 DF   PROB > F'= 0.4861

VARIABLE: H2

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.06122449	0.99506115	0.06363601	1.00000000	5.00000000	UNEQUAL	1.9080	484.4	0.0570
2	245	1.88163265	1.08561259	0.06935724	1.00000000	5.00000000	EQUAL	1.9080	488.0	0.0570

FOR H0: VARIANCES ARE EQUAL, F'=   1.19 WITH 244 AND 244 DF   PROB > F'= 0.1794

VARIABLE: H3

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.80000000	1.28866432	0.08232974	1.00000000	5.00000000	UNEQUAL	2.2457	486.4	0.0252
2	245	2.53061224	1.36559062	0.08724438	1.00000000	5.00000000	EQUAL	2.2457	488.0	0.0252

FOR H0: VARIANCES ARE EQUAL, F'=   1.12 WITH 244 AND 244 DF   PROB > F'= 0.3657

VARIABLE: H4

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.16326531	1.26664231	0.08092281	1.00000000	5.00000000	UNEQUAL	2.5289	487.6	0.0118
2	245	2.86938779	1.30544322	0.08340171	1.00000000	5.00000000	EQUAL	2.5289	488.0	0.0118

FOR H0: VARIANCES ARE EQUAL, F'=   1.06 WITH 244 AND 244 DF   PROB > F'= 0.6377

VARIABLE: H5

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.92244898	0.90880603	0.05806149	1.00000000	5.00000000	UNEQUAL	0.8883	487.9	0.3748
2	245	1.84897959	0.92198166	0.05890325	1.00000000	5.00000000	EQUAL	0.8883	488.0	0.3748

FOR H0: VARIANCES ARE EQUAL, F'=   1.03 WITH 244 AND 244 DF   PROB > F'= 0.8223

TTEST PROCEDURE

VARIABLE: H6

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.28163265	0.56382529	0.03602148	1.00000000	5.00000000	UNEQUAL	-0.2394	488.0	0.8109
2	245	1.29367755	0.56843478	0.03631597	1.00000000	5.00000000	EQUAL	-0.2394	488.0	0.8109

FOR H0: VARIANCES ARE EQUAL, F'=   1.02 WITH 244 AND 244 DF   PROB > F'= 0.8989

VARIABLE: H7

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.39183673	0.59500542	0.03801350	1.00000000	3.00000000	UNEQUAL	0.2243	487.6	0.8226
2	245	1.37959134	0.61303451	0.03916534	1.00000000	4.00000000	EQUAL	0.2243	488.0	0.8226

FOR H0: VARIANCES ARE EQUAL, F'=   1.06 WITH 244 AND 244 DF   PROB > F'= 0.6413

VARIABLE: H8

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.40408163	0.59711025	0.03814797	1.00000000	3.00000000	UNEQUAL	2.1468	487.6	0.0323
2	245	1.28979592	0.58121019	0.03713216	1.00000000	5.00000000	EQUAL	2.1468	488.0	0.0323

FOR H0: VARIANCES ARE EQUAL, F'=   1.06 WITH 244 AND 244 DF   PROB > F'= 0.6736

VARIABLE: H9

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.10612245	0.95651523	0.06110952	1.00000000	5.00000000	UNEQUAL	1.1706	487.9	0.2423
2	245	2.00408163	0.97298745	0.06216189	1.00000000	5.00000000	EQUAL	1.1706	488.0	0.2423

FOR H0: VARIANCES ARE EQUAL, F'=   1.03 WITH 244 AND 244 DF   PROB > F'= 0.7899

VARIABLE: H10

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.59183673	0.78192615	0.04995543	1.00000000	5.00000000	UNEQUAL	1.4729	480.1	0.1414
2	245	1.49387755	0.68723972	0.04390613	1.00000000	4.00000000	EQUAL	1.4729	488.0	0.1414

FOR H0: VARIANCES ARE EQUAL, F'=   1.29 WITH 244 AND 244 DF   PROB > F'= 0.0443

TTEST PROCEDURE

VARIABLE: H11

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.42448980	1.42266931	0.09089101	1.00000000	5.00000000	UNEQUAL	2.2524	487.6	0.0247
2	245	3.13061224	1.46519792	0.09360606	1.00000000	5.00000000	EQUAL	2.2524	488.0	0.0247

FOR H0: VARIANCES ARE EQUAL, F' =   1.06 WITH 244 AND 244 DF   PROB > F' = 0.6458

VARIABLE: H12

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.55510204	1.13532353	0.07253316	1.00000000	5.00000000	UNEQUAL	0.0388	486.7	0.9691
2	245	2.55102041	1.19529859	0.07636483	1.00000000	5.00000000	EQUAL	0.0388	488.0	0.9691

FOR H0: VARIANCES ARE EQUAL, F' =   1.11 WITH 244 AND 244 DF   PROB > F' = 0.4219

VARIABLE: H13

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.65714296	0.81280732	0.05192835	1.00000000	5.00000000	UNEQUAL	2.2208	474.9	0.0268
2	245	1.50612245	0.68723972	0.04390613	1.00000000	4.00000000	EQUAL	2.2208	488.0	0.0268

FOR H0: VARIANCES ARE EQUAL, F' =   1.40 WITH 244 AND 244 DF   PROB > F' = 0.0090

VARIABLE: H14

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.11020408	1.42866510	0.09127407	1.00000000	5.00000000	UNEQUAL	1.3656	487.3	0.1727
2	245	2.93061224	1.48188572	0.09467421	1.00000000	5.00000000	EQUAL	1.3656	488.0	0.1727

FOR H0: VARIANCES ARE EQUAL, F' =   1.08 WITH 244 AND 244 DF   PROB > F' = 0.5682

VARIABLE: H15

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.57551020	1.37878103	0.08808739	1.00000000	5.00000000	UNEQUAL	0.1645	488.0	0.8694
2	245	3.55510204	1.36781824	0.08738670	1.00000000	5.00000000	EQUAL	0.1645	488.0	0.8694

FOR H0: VARIANCES ARE EQUAL, F' =   1.02 WITH 244 AND 244 DF   PROB > F' = 0.9009

TTEST PROCEDURE

VARIABLE: H16

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.35102041	1.23443132	0.07886492	1.00000000	5.00000000	UNEQUAL	0.6069	486.9	0.5442
2	245	3.28163255	1.29559048	0.08277224	1.00000000	5.00000000	EQUAL	0.6069	488.0	0.5442

FOR HO: VARIANCES ARE EQUAL, F'=   1.10 WITH 244 AND 244 DF   PROB > F'= 0.4506

VARIABLE: L1

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.53877551	1.10305394	0.07047153	1.00000000	5.00000000	UNEQUAL	0.9735	487.8	0.3308
2	245	2.44081633	1.12423350	0.07182464	1.00000000	5.00000000	EQUAL	0.9735	488.0	0.3308

FOR HO: VARIANCES ARE EQUAL, F'=   1.04 WITH 244 AND 244 DF   PROB > F'= 0.7666

VARIABLE: L2

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	4.20408163	1.03977440	0.06642875	1.00000000	5.00000000	UNEQUAL	1.6019	482.6	0.1098
2	245	4.04489795	1.15677993	0.07390396	1.00000000	5.00000000	EQUAL	1.6019	488.0	0.1098

FOR HO: VARIANCES ARE EQUAL, F'=   1.24 WITH 244 AND 244 DF   PROB > F'= 0.0964

VARIABLE: L3

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.89387755	1.08121215	0.06907611	1.00000000	5.00000000	UNEQUAL	0.5599	484.6	0.5758
2	245	3.83673459	1.17604050	0.07513447	1.00000000	5.00000000	EQUAL	0.5599	488.0	0.5758

FOR HO: VARIANCES ARE EQUAL, F'=   1.18 WITH 244 AND 244 DF   PROB > F'= 0.1898

VARIABLE: L4

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.83673469	0.99067245	0.06329174	1.00000000	5.00000000	UNEQUAL	0.3184	488.0	0.7503
2	245	1.80816327	0.99585961	0.06362314	1.00000000	5.00000000	EQUAL	0.3184	488.0	0.7503

FOR HO: VARIANCES ARE EQUAL, F'=   1.01 WITH 244 AND 244 DF   PROB > F'= 0.9350

TTEST PROCEDURE

VARIABLE: L5

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.77551020	1.42669665	0.09114831	1.00000000	5.00000000	UNEQUAL	0.2212	488.0	0.8250
2	245	2.74693378	1.43193982	0.09148328	1.00000000	5.00000000	EQUAL	0.2212	488.0	0.8250

FOR H0: VARIANCES ARE EQUAL, F'= 1.01 WITH 244 AND 244 DF   PROB > F'= 0.9543

VARIABLE: L6

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.47755102	1.28217050	0.08191467	1.00000000	5.00000000	UNEQUAL	1.5658	485.8	0.1180
2	245	3.28979592	1.37058920	0.08757012	1.00000000	5.00000000	EQUAL	1.5658	488.0	0.1180

FOR H0: VARIANCES ARE EQUAL, F'= 1.14 WITH 244 AND 244 DF   PROB > F'= 0.2977

VARIABLE: L7

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.63673469	0.91137931	0.05822589	1.00000000	5.00000000	UNEQUAL	0.2506	487.8	0.8023
2	245	1.61632653	0.89152359	0.05695735	1.00000000	5.00000000	EQUAL	0.2506	488.0	0.8023

FOR H0: VARIANCES ARE EQUAL, F'= 1.05 WITH 244 AND 244 DF   PROB > F'= 0.7310

VARIABLE: L8

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.63673469	1.19196316	0.07615173	1.00000000	5.00000000	UNEQUAL	3.1252	487.4	0.0019
2	245	3.29387735	1.23513759	0.07897393	1.00000000	5.00000000	EQUAL	3.1252	488.0	0.0019

FOR H0: VARIANCES ARE EQUAL, F'= 1.08 WITH 244 AND 244 DF   PROB > F'= 0.5701

VARIABLE: L9

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.59591837	1.18216930	0.07552603	1.00000000	5.00000000	UNEQUAL	0.6970	485.0	0.4862
2	245	3.51836735	1.27903548	0.08171458	1.00000000	5.00000000	EQUAL	0.6970	488.0	0.4862

FOR H0: VARIANCES ARE EQUAL, F'= 1.17 WITH 244 AND 244 DF   PROB > F'= 0.2193

TTEST PROCEDURE

VARIABLE: L10

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.81632653	1.01774158	0.06502112	1.00000000	5.00000000	UNEQUAL	1.3491	477.0	0.1780
2	245	2.69163265	1.18592730	0.07576612	1.00000000	5.00000000	EQUAL	1.3491	488.0	0.1779

FOR H0: VARIANCES ARE EQUAL, F'=   1.36 WITH 244 AND 244 DF   PROB > F'= 0.0172

VARIABLE: L11

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.54693878	1.17471692	0.07504991	1.00000000	5.00000000	UNEQUAL	0.4507	487.0	0.6524
2	245	3.49795918	1.23016889	0.07859261	1.00000000	5.00000000	EQUAL	0.4507	488.0	0.6524

FOR H0: VARIANCES ARE EQUAL, F'=   1.10 WITH 244 AND 244 DF   PROB > F'= 0.4717

VARIABLE: L12

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.21224490	1.06540854	0.06606645	1.00000000	5.00000000	UNEQUAL	1.4446	488.0	0.1492
2	245	2.07346939	1.06100314	0.06778500	1.00000000	5.00000000	EQUAL	1.4446	488.0	0.1492

FOR H0: VARIANCES ARE EQUAL, F'=   1.01 WITH 244 AND 244 DF   PROB > F'= 0.9484

VARIABLE: L13

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.69387755	1.10520530	0.07050898	1.00000000	5.00000000	UNEQUAL	-0.1551	483.1	0.8768
2	245	3.71020408	1.22210597	0.07807749	1.00000000	5.00000000	EQUAL	-0.1551	488.0	0.8768

FOR H0: VARIANCES ARE EQUAL, F'=   1.22 WITH 244 AND 244 DF   PROB > F'= 0.1170

VARIABLE: L14

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.61224490	1.22166788	0.07804950	1.00000000	5.00000000	UNEQUAL	1.8228	487.6	0.0689
2	245	2.40815327	1.25643210	0.08027050	1.00000000	5.00000000	EQUAL	1.8228	488.0	0.0689

FOR H0: VARIANCES ARE EQUAL, F'=   1.06 WITH 244 AND 244 DF   PROB > F'= 0.6615

TTEST PROCEDURE

VARIABLE: L15

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.31836735	1.25966322	0.08047693	1.00000000	5.00000000	UNEQUAL	-0.8412	487.2	0.4006
2	245	2.41224490	1.21020806	0.07731736	1.00000000	5.00000000	EQUAL	-0.8412	488.0	0.4006

FOR HO: VARIANCES ARE EQUAL, F'= 1.08 WITH 244 AND 244 DF   PROB > F'= 0.5320

VARIABLE: L16

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.08979592	1.22478585	0.07824870	1.00000000	5.00000000	UNEQUAL	1.8024	488.0	0.0721
2	245	2.88979592	1.23146003	0.07867510	1.00000000	5.00000000	EQUAL	1.8024	488.0	0.0721

FOR HO: VARIANCES ARE EQUAL, F'= 1.01 WITH 244 AND 244 DF   PROB > F'= 0.9324

VARIABLE: S1

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.28571429	1.00000000	0.06388766	1.00000000	5.00000000	UNEQUAL	1.6894	480.4	0.0918
2	245	2.12244898	1.13499933	0.07251245	1.00000000	5.00000000	EQUAL	1.6894	488.0	0.0918

FOR HO: VARIANCES ARE EQUAL, F'= 1.29 WITH 244 AND 244 DF   PROB > F'= 0.0485

VARIABLE: S2

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	4.14693878	1.01769227	0.06501797	1.00000000	5.00000000	UNEQUAL	-0.7694	487.2	0.4420
2	245	4.21632653	0.97831953	0.06250255	1.00000000	5.00000000	EQUAL	-0.7694	488.0	0.4420

FOR HO: VARIANCES ARE EQUAL, F'= 1.08 WITH 244 AND 244 DF   PROB > F'= 0.5381

VARIABLE: S3

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.73061224	1.26462009	0.08079361	1.00000000	5.00000000	UNEQUAL	2.1204	487.8	0.0345
2	245	2.48571429	1.29184073	0.08253268	1.00000000	5.00000000	EQUAL	2.1204	488.0	0.0345

FOR HO: VARIANCES ARE EQUAL, F'= 1.04 WITH 244 AND 244 DF   PROB > F'= 0.7396

TTEST PROCEDURE

VARIABLE: S4

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.71836735	1.35738319	0.08672C03	1.00000000	5.00000000	UNEQUAL	-0.0673	487.7	0.9463
2	245	2.72653051	1.32547169	0.08468128	1.00000000	5.00000000	EQUAL	-0.0673	488.0	0.9463

FOR HO: VARIANCES ARE EQUAL, F'=   1.05 WITH 244 AND 244 DF   PROB > F'= 0.7104

VARIABLE: S5

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.57959134	1.14465608	0.07312939	1.00000000	5.00000000	UNEQUAL	0.9825	488.0	0.3263
2	245	2.47755102	1.15433349	0.07374766	1.00000000	5.00000000	EQUAL	0.9825	488.0	0.3263

FOR HO: VARIANCES ARE EQUAL, F'=   1.02 WITH 244 AND 244 DF   PROB > F'= 0.8955

VARIABLE: S6

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.84489796	1.10532638	0.07061671	1.00000000	5.00000000	UNEQUAL	-1.0436	482.6	0.2972
2	245	2.95510204	1.22893083	0.07851351	1.00000000	5.00000000	EQUAL	-1.0436	488.0	0.2972

FOR HO: VARIANCES ARE EQUAL, F'=   1.24 WITH 244 AND 244 DF   PROB > F'= 0.0984

VARIABLE: S7

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.19591837	1.12824381	0.07208C85	1.00000000	5.00000000	UNEQUAL	-0.4427	477.1	0.6582
2	245	3.24489796	1.31402604	0.08395004	1.00000000	5.00000000	EQUAL	-0.4427	488.0	0.6582

FOR HO: VARIANCES ARE EQUAL, F'=   1.36 WITH 244 AND 244 DF   PROB > F'= 0.0176

VARIABLE: S8

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.82857143	0.92506092	0.05909597	1.00000000	5.00000000	UNEQUAL	2.2638	487.9	0.0240
2	245	1.64081633	0.91075504	0.05818601	1.00000000	5.00000000	EQUAL	2.2638	488.0	0.0240

FOR HO: VARIANCES ARE EQUAL, F'=   1.03 WITH 244 AND 244 DF   PROB > F'= 0.8078

TTEST PROCEDURE

VARIABLE: S9

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.76326531	1.47418967	0.09418252	1.00000000	5.00000000	UNEQUAL	-0.8755	487.2	0.3817
2	245	2.87755102	1.41468662	0.09038101	1.00000000	5.00000000	EQUAL	-0.8755	488.0	0.3817

FOR HO: VARIANCES ARE EQUAL, F'=   1.09 WITH 244 AND 244 DF   PROB > F'= 0.5203

VARIABLE: S10

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.90612245	0.95135972	0.06078014	1.00000000	5.00000000	UNEQUAL	0.1791	482.1	0.8579
2	245	1.88979592	1.06360139	0.05795103	1.00000000	5.00000000	EQUAL	0.1791	488.0	0.8579

FOR HO: VARIANCES ARE EQUAL, F'=   1.25 WITH 244 AND 244 DF   PROB > F'= 0.0821

VARIABLE: S11

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.62040816	1.21752564	0.07778486	1.00000000	5.00000000	UNEQUAL	1.8544	478.2	0.0643
2	245	3.40000000	1.40665864	0.08986812	1.00000000	5.00000000	EQUAL	1.8544	488.0	0.0643

FOR HO: VARIANCES ARE EQUAL, F'=   1.33 WITH 244 AND 244 DF   PROB > F'= 0.0245

VARIABLE: S12

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.50612245	1.08876682	0.06955876	1.00000000	5.00000000	UNEQUAL	2.0247	488.0	0.0434
2	245	2.30612245	1.09776378	0.07013356	1.00000000	5.00000000	EQUAL	2.0247	488.0	0.0434

FOR HO: VARIANCES ARE EQUAL, F'=   1.02 WITH 244 AND 244 DF   PROB > F'= 0.8978

VARIABLE: S13

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	4.00000000	1.07123339	0.06843859	1.00000000	5.00000000	UNEQUAL	0.3721	487.3	0.7100
2	245	3.96325531	1.11375415	0.07115514	1.00000000	5.00000000	EQUAL	0.3721	488.0	0.7100

FOR HO: VARIANCES ARE EQUAL, F'=   1.08 WITH 244 AND 244 DF   PROB > F'= 0.5436

TTEST PROCEDURE

VARIABLE: S14

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.07755132	1.13716380	0.07265073	1.00000000	5.00000000	UNEQUAL	1.1541	485.2	0.2490
2	245	1.96326531	1.05323348	0.06728862	1.00000000	5.00000000	EQUAL	1.1541	488.0	0.2490

FOR HO: VARIANCES ARE EQUAL, F'=   1.17 WITH 244 AND 244 DF   PROB > F'= 0.2317

VARIABLE: S15

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.36326531	1.09145224	0.06973033	1.00000000	5.00000000	UNEQUAL	-0.6392	486.3	0.5230
2	245	2.42448990	1.02799555	0.06567623	1.00000000	5.00000000	EQUAL	-0.6392	488.0	0.5230

FOR HO: VARIANCES ARE EQUAL, F'=   1.13 WITH 244 AND 244 DF   PROB > F'= 0.3501

VARIABLE: S16

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.93061224	0.96627646	0.06173314	1.00000000	5.00000000	UNEQUAL	1.0630	485.8	0.2883
2	245	1.84081533	0.90261877	0.05766620	1.00000000	5.00000000	EQUAL	1.0630	488.0	0.2883

FOR HO: VARIANCES ARE EQUAL, F'=   1.15 WITH 244 AND 244 DF   PROB > F'= 0.2877

VARIABLE: I1

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.37142857	1.02669292	0.06559300	1.00000000	5.00000000	UNEQUAL	1.4590	488.0	0.1452
2	245	2.23673469	1.01680427	0.06496124	1.00000000	5.00000000	EQUAL	1.4590	488.0	0.1452

FOR HO: VARIANCES ARE EQUAL, F'=   1.02 WITH 244 AND 244 DF   PROB > F'= 0.8799

VARIABLE: I2

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.04489796	0.92883261	0.05934094	1.00000000	5.00000000	UNEQUAL	1.7081	488.0	0.0883
2	245	1.90204082	0.92250767	0.05893685	1.00000000	4.00000000	EQUAL	1.7081	488.0	0.0883

FOR HO: VARIANCES ARE EQUAL, F'=   1.01 WITH 244 AND 244 DF   PROB > F'= 0.9151

TTEST PROCEDURE

VARIABLE: I3

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.78775510	1.12891081	0.07212347	1.00000000	5.00000000	UNEQUAL	1.8776	487.2	0.0610
2	245	2.60000000	1.08416320	0.06926465	1.00000000	5.00000000	EQUAL	1.8776	488.0	0.0610

FOR H0: VARIANCES ARE EQUAL, F'=   1.08 WITH 244 AND 244 DF   PROB > F' = 0.5280

VARIABLE: I4

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.84897959	1.08153702	0.06909687	1.00000000	5.00000000	UNEQUAL	3.6935	486.5	0.0002
2	245	2.47755102	1.14363264	0.07306401	1.00000000	5.00000000	EQUAL	3.6935	488.0	0.0002

FOR H0: VARIANCES ARE EQUAL, F'=   1.12 WITH 244 AND 244 DF   PROB > F' = 0.3838

VARIABLE: I5

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.95510204	0.99281460	0.06342860	1.00000000	5.00000000	UNEQUAL	2.6952	475.8	0.0073
2	245	1.73061224	0.84499590	0.05398481	1.00000000	5.00000000	EQUAL	2.6952	488.0	0.0073

FOR H0: VARIANCES ARE EQUAL, F'=   1.38 WITH 244 AND 244 DF   PROB > F' = 0.0121

VARIABLE: I6

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.41632653	0.58213351	0.04357991	1.00000000	4.00000000	UNEQUAL	1.1036	484.5	0.2703
2	245	1.35102041	0.62663637	0.04003433	1.00000000	4.00000000	EQUAL	1.1036	488.0	0.2703

FOR H0: VARIANCES ARE EQUAL, F'=   1.18 WITH 244 AND 244 DF   PROB > F' = 0.1857

VARIABLE: I7

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.51836735	0.68702061	0.04389214	1.00000000	4.00000000	UNEQUAL	1.4567	487.9	0.1459
2	245	1.42857143	0.67750749	0.04328437	1.00000000	4.00000000	EQUAL	1.4567	488.0	0.1459

FOR H0: VARIANCES ARE EQUAL, F'=   1.03 WITH 244 AND 244 DF   PROB > F' = 0.8277

TTEST PROCEDURE

VARIABLE: I8

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.67346939	0.82947137	0.05295298	1.00000000	5.00000000	UNEQUAL	2.6456	481.6	0.0084
2	245	1.48571429	0.73885157	0.04720350	1.00000000	4.00000000	EQUAL	2.6456	488.0	0.0084

FOR H0: VARIANCES ARE EQUAL, F'= 1.26 WITH 244 AND 244 DF   PROB > F'= 0.0713

VARIABLE: I9

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.02040816	0.91189309	0.05825871	1.00000000	5.00000000	UNEQUAL	3.4611	484.3	0.0006
2	245	1.74693878	0.83545954	0.05337555	1.00000000	4.00000000	EQUAL	3.4611	488.0	0.0006

FOR H0: VARIANCES ARE EQUAL, F'= 1.19 WITH 244 AND 244 DF   PROB > F'= 0.1722

VARIABLE: I10

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.67755102	0.82860373	0.05293755	1.00000000	5.00000000	UNEQUAL	2.1586	477.9	0.0314
2	245	1.52653051	0.71596991	0.04574164	1.00000000	4.00000000	EQUAL	2.1586	488.0	0.0314

FOR H0: VARIANCES ARE EQUAL, F'= 1.34 WITH 244 AND 244 DF   PROB > F'= 0.0229

VARIABLE: I11

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.68979592	1.23544724	0.07892563	1.00000000	5.00000000	UNEQUAL	0.8042	488.0	0.4216
2	245	2.60000000	1.23606992	0.07896961	1.00000000	5.00000000	EQUAL	0.8042	488.0	0.4216

FOR H0: VARIANCES ARE EQUAL, F'= 1.00 WITH 244 AND 244 DF   PROB > F'= 0.9937

VARIABLE: I12

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.44081633	1.02906897	0.06574480	1.00000000	5.00000000	UNEQUAL	-0.0890	487.6	0.9291
2	245	2.44897959	1.00125381	0.06396776	1.00000000	5.00000000	EQUAL	-0.0890	488.0	0.9291

FOR H0: VARIANCES ARE EQUAL, F'= 1.06 WITH 244 AND 244 DF   PROB > F'= 0.6685

TTEST PROCEDURE

VARIABLE: I13

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.59183673	0.73880629	0.04720060	1.00000000	4.00000000	UNEQUAL	2.4264	477.2	0.0156
2	245	1.44081633	0.63501593	0.04056968	1.00000000	4.00000000	EQUAL	2.4264	488.0	0.0156

FOR HO: VARIANCES ARE EQUAL, F'= 1.35 WITH 244 AND 244 DF   PROB > F'= 0.0184

VARIABLE: I14

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.64489796	1.18409217	0.07564887	1.00000000	5.00000000	UNEQUAL	1.2307	487.9	0.2190
2	245	2.51428571	1.16506526	0.07443329	1.00000000	5.00000000	EQUAL	1.2307	488.0	0.2190

FOR HO: VARIANCES ARE EQUAL, F'= 1.03 WITH 244 AND 244 DF   PROB > F'= 0.8004

VARIABLE: I15

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.12244898	1.12775443	0.07204959	1.00000000	5.00000000	UNEQUAL	1.3255	488.0	0.1856
2	245	2.98775510	1.12152657	0.07165809	1.00000000	5.00000000	EQUAL	1.3255	488.0	0.1856

FOR HO: VARIANCES ARE EQUAL, F'= 1.01 WITH 244 AND 244 DF   PROB > F'= 0.9322

VARIABLE: I16

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.88979592	1.12356373	0.07178185	1.00000000	5.00000000	UNEQUAL	-0.1628	487.7	0.8707
2	245	2.90612245	1.09552145	0.06999030	1.00000000	5.00000000	EQUAL	-0.1628	488.0	0.8707

FOR HO: VARIANCES ARE EQUAL, F'= 1.05 WITH 244 AND 244 DF   PROB > F'= 0.6933

VARIABLE: O1

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.77551020	1.20220607	0.07680613	1.00000000	5.00000000	UNEQUAL	1.2732	486.6	0.2036
2	245	2.64081633	1.13872203	0.07275028	1.00000000	5.00000000	EQUAL	1.2732	488.0	0.2036

FOR HO: VARIANCES ARE EQUAL, F'= 1.11 WITH 244 AND 244 DF   PROB > F'= 0.3973

TTEST PROCEDURE

VARIABLE: 02

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.80408163	0.91121410	0.05821533	1.00000000	5.00000000	UNEQUAL	1.5623	487.5	0.1189
2	245	3.67755102	0.88133312	0.05630631	1.00000000	5.00000000	EQUAL	1.5623	488.0	0.1189

FOR H0: VARIANCES ARE EQUAL, F'=   1.07 WITH 244 AND 244 DF   PROB > F'= 0.6029

VARIABLE: 03

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.58775510	0.94817181	0.06057647	1.00000000	5.00000000	UNEQUAL	2.0200	485.5	0.0439
2	245	3.40815327	1.01854518	0.06507885	1.00000000	5.00000000	EQUAL	2.0200	488.0	0.0439

FOR H0: VARIANCES ARE EQUAL, F'=   1.15 WITH 244 AND 244 DF   PROB > F'= 0.2634

VARIABLE: 04

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.53061224	1.16474934	0.07441311	1.00000000	5.00000000	UNEQUAL	2.1278	487.5	0.0339
2	245	2.31020408	1.12793241	0.07206096	1.00000000	5.00000000	EQUAL	2.1278	488.0	0.0339

FOR H0: VARIANCES ARE EQUAL, F'=   1.07 WITH 244 AND 244 DF   PROB > F'= 0.6162

VARIABLE: 05

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.76734694	1.02377231	0.06540641	1.00000000	5.00000000	UNEQUAL	2.6337	487.9	0.0087
2	245	3.52244898	1.03450022	0.06609179	1.00000000	5.00000000	EQUAL	2.6337	488.0	0.0087

FOR H0: VARIANCES ARE EQUAL, F'=   1.02 WITH 244 AND 244 DF   PROB > F'= 0.8708

VARIABLE: 06

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.14693878	1.09152885	0.06973522	1.00000000	5.00000000	UNEQUAL	0.8776	485.5	0.3806
2	245	3.05714286	1.17207956	0.07488142	1.00000000	5.00000000	EQUAL	0.8776	488.0	0.3806

FOR H0: VARIANCES ARE EQUAL, F'=   1.15 WITH 244 AND 244 DF   PROB > F'= 0.2667

TTEST PROCEDURE

VARIABLE: O7

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.51835735	1.21325897	0.07751227	1.00000000	5.00000000	UNEQUAL	2.8181	487.0	0.0050
2	245	2.21632653	1.15860058	0.07402028	1.00000000	5.00000000	EQUAL	2.8181	488.0	0.0050

FOR HO: VARIANCES ARE EQUAL, F'= 1.10 WITH 244 AND 244 DF   PROB > F'= 0.4720

VARIABLE: O8

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.43673469	1.02882511	C.06572922	1.00000000	5.00000000	UNEQUAL	3.4471	487.9	0.0006
2	245	3.11428571	1.04175136	0.06655505	1.00000000	5.00000000	EQUAL	3.4471	488.0	0.0006

FOR HO: VARIANCES ARE EQUAL, F'= 1.03 WITH 244 AND 244 DF   PROB > F'= 0.8455

VARIABLE: O9

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.58367347	0.89060371	0.05685658	1.00000000	5.00000000	UNEQUAL	1.3593	484.6	0.1747
2	245	3.46938776	0.96881795	0.06189551	1.00000000	5.00000000	EQUAL	1.3593	488.0	0.1747

FOR HO: VARIANCES ARE EQUAL, F'= 1.18 WITH 244 AND 244 DF   PROB > F'= 0.1892

VARIABLE: O10

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.79183673	1.03698743	0.06625070	1.00000000	5.00000000	UNEQUAL	-0.7289	487.5	0.4664
2	245	2.86122449	1.06985833	0.05835074	1.00000000	5.00000000	EQUAL	-0.7289	488.0	0.4664

FOR HO: VARIANCES ARE EQUAL, F'= 1.06 WITH 244 AND 244 DF   PROB > F'= 0.6263

VARIABLE: O11

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.49387755	0.93922015	0.06000457	1.00000000	5.00000000	UNEQUAL	0.8971	487.4	0.3701
2	245	3.41632653	0.97412149	0.06223434	1.00000000	5.00000000	EQUAL	0.8971	488.0	0.3701

FOR HO: VARIANCES ARE EQUAL, F'= 1.08 WITH 244 AND 244 DF   PROB > F'= 0.5691

TTEST PROCEDURE

VARIABLE: 012

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.84489796	0.94110617	0.06012507	1.00000000	4.00000000	UNEQUAL	1.7249	481.4	0.0852
2	245	1.70612245	0.83575999	0.05345863	1.00000000	4.00000000	EQUAL	1.7249	488.0	0.0852

FOR HO: VARIANCES ARE EQUAL, F'=   1.26 WITH 244 AND 244 DF   PROB > F'= 0.0670

VARIABLE: 013

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.28979592	1.06821532	0.06824577	1.00000000	5.00000000	UNEQUAL	-1.1157	487.0	0.2651
2	245	3.40000000	1.11756735	0.07140515	1.00000000	5.00000000	EQUAL	-1.1157	488.0	0.2651

FOR HO: VARIANCES ARE EQUAL, F'=   1.09 WITH 244 AND 244 DF   PROB > F'= 0.4801

VARIABLE: 014

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.35510204	1.05989893	0.06771446	1.00000000	5.00000000	UNEQUAL	2.9594	485.3	0.0032
2	245	2.08163265	0.98423505	0.06288047	1.00000000	5.00000000	EQUAL	2.9594	488.0	0.0032

FOR HO: VARIANCES ARE EQUAL, F'=   1.16 WITH 244 AND 244 DF   PROB > F'= 0.2480

VARIABLE: 015

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.97959184	1.15747386	0.07394829	1.00000000	5.00000000	UNEQUAL	-2.5840	487.3	0.0101
2	245	3.24489795	1.11492505	0.07122995	1.00000000	5.00000000	EQUAL	-2.5840	488.0	0.0101

FOR HO: VARIANCES ARE EQUAL, F'=   1.08 WITH 244 AND 244 DF   PROB > F'= 0.5589

VARIABLE: 016

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.46938776	1.05391621	0.06733224	1.00000000	5.00000000	UNEQUAL	1.5393	486.6	0.1244
2	245	2.32653061	0.99974905	0.06387162	1.00000000	5.00000000	EQUAL	1.5393	488.0	0.1244

FOR HO: VARIANCES ARE EQUAL, F'=   1.11 WITH 244 AND 244 DF   PROB > F'= 0.4104

TTEST PROCEDURE

VARIABLE: J1

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.14285714	1.02028604	0.06518368	1.00000000	5.00000000	UNEQUAL	2.3165	487.9	0.0209
2	245	1.93061224	1.00779830	0.06438587	1.00000000	5.00000000	EQUAL	2.3165	488.0	0.0209

FOR H0: VARIANCES ARE EQUAL, F'= 1.02 WITH 244 AND 244 DF   PROB > F'= 0.8476

VARIABLE: U2

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.84489796	0.79472163	0.05077290	1.00000000	5.00000000	UNEQUAL	0.1153	487.6	0.9082
2	245	3.83673459	0.77213083	0.04932963	1.00000000	5.00000000	EQUAL	0.1153	488.0	0.9082

FOR H0: VARIANCES ARE EQUAL, F'= 1.06 WITH 244 AND 244 DF   PROB > F'= 0.6527

VARIABLE: J3

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.24489795	1.03880867	0.06636705	1.00000000	5.00000000	UNEQUAL	3.3550	483.8	0.0009
2	245	2.91428571	1.14017543	0.07284314	1.00000000	5.00000000	EQUAL	3.3550	488.0	0.0009

FOR H0: VARIANCES ARE EQUAL, F'= 1.20 WITH 244 AND 244 DF   PROB > F'= 0.1465

VARIABLE: U4

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.13877551	1.18266445	0.07555766	1.00000000	5.00000000	UNEQUAL	1.6730	487.3	0.0950
2	245	2.96326531	1.13922138	0.07278218	1.00000000	5.00000000	EQUAL	1.6730	488.0	0.0950

FOR H0: VARIANCES ARE EQUAL, F'= 1.08 WITH 244 AND 244 DF   PROB > F'= 0.5592

VARIABLE: J5

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.67346939	1.15566593	0.07383279	1.00000000	5.00000000	UNEQUAL	1.4889	486.3	0.1372
2	245	2.52244898	1.08835170	0.06954502	1.00000000	5.00000000	EQUAL	1.4889	488.0	0.1372

FOR H0: VARIANCES ARE EQUAL, F'= 1.13 WITH 244 AND 244 DF   PROB > F'= 0.3506

TTEST PROCEDURE

VARIABLE: J5

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.74693878	1.11676899	0.07134775	1.00000000	5.00000000	UNEQUAL	-0.1985	487.3	0.8428
2	245	2.76734694	1.15896148	0.07404333	1.00000000	5.00000000	EQUAL	-0.1985	488.0	0.8428

FOR H0: VARIANCES ARE EQUAL, F'=   1.08 WITH 244 AND 244 DF   PROB > F'= 0.5628

VARIABLE: U7

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.53877551	0.83194822	0.05315122	1.00000000	5.00000000	UNEQUAL	2.7339	465.5	0.0065
2	245	3.30612245	1.04025694	0.06645958	1.00000000	5.00000000	EQUAL	2.7339	488.0	0.0065

FOR H0: VARIANCES ARE EQUAL, F'=   1.56 WITH 244 AND 244 DF   PROB > F'= 0.0005

VARIABLE: U8

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.16734594	1.02856492	0.06571260	1.00000000	5.00000000	UNEQUAL	1.9655	487.4	0.0499
2	245	1.98775510	0.99375770	0.06348885	1.00000000	5.00000000	EQUAL	1.9655	488.0	0.0499

FOR H0: VARIANCES ARE EQUAL, F'=   1.07 WITH 244 AND 244 DF   PROB > F'= 0.5911

VARIABLE: U9

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.37959184	1.18338560	0.07560373	1.00000000	5.00000000	UNEQUAL	-0.4776	485.4	0.6331
2	245	2.43265306	1.27417407	0.08140400	1.00000000	5.00000000	EQUAL	-0.4776	488.0	0.6331

FOR H0: VARIANCES ARE EQUAL, F'=   1.16 WITH 244 AND 244 DF   PROB > F'= 0.2489

VARIABLE: U10

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.96734694	0.95329191	0.06090359	1.00000000	5.00000000	UNEQUAL	1.0281	487.6	0.3044
2	245	1.87755102	0.97997683	0.06260842	1.00000000	5.00000000	EQUAL	1.0281	488.0	0.3044

FOR H0: VARIANCES ARE EQUAL, F'=   1.06 WITH 244 AND 244 DF   PROB > F'= 0.6666

TTEST PROCEDURE

VARIABLE: U11

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.55102041	0.98474480	0.06291304	1.00000000	5.00000000	UNEQUAL	3.3001	477.3	0.0010
2	245	3.23265306	1.14472915	0.07313406	1.00000000	5.00000000	EQUAL	3.3001	488.0	0.0010

FOR HO: VARIANCES ARE EQUAL, F'=   1.35 WITH 244 AND 244 DF   PROB > F'= 0.0191

VARIABLE: U12

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.42448980	1.00379007	0.06412980	1.00000000	5.00000000	UNEQUAL	2.0826	485.6	0.0378
2	245	2.22857143	1.07733734	0.06882855	1.00000000	5.00000000	EQUAL	2.0826	488.0	0.0378

FOR HO: VARIANCES ARE EQUAL, F'=   1.15 WITH 244 AND 244 DF   PROB > F'= 0.2700

VARIABLE: J13

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.73877551	0.75553052	0.04826907	1.00000000	5.00000000	UNEQUAL	1.9414	471.6	0.0528
2	245	3.59183673	0.91253492	0.05829972	1.00000000	5.00000000	EQUAL	1.9414	488.0	0.0528

FOR HO: VARIANCES ARE EQUAL, F'=   1.46 WITH 244 AND 244 DF   PROB > F'= 0.0033

VARIABLE: U14

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.96326531	1.16413161	0.07437364	1.00000000	5.00000000	UNEQUAL	0.6316	487.4	0.5279
2	245	2.89795918	1.12433765	0.07183130	1.00000000	5.00000000	EQUAL	0.6316	488.0	0.5279

FOR HO: VARIANCES ARE EQUAL, F'=   1.07 WITH 244 AND 244 DF   PROB > F'= 0.5873

VARIABLE: U15

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.81224490	1.08899726	0.06957348	1.00000000	5.00000000	UNEQUAL	2.0822	486.8	0.0378
2	245	2.61224490	1.03535179	0.06622285	1.00000000	5.00000000	EQUAL	2.0822	488.0	0.0378

FOR HO: VARIANCES ARE EQUAL, F'=   1.10 WITH 244 AND 244 DF   PROB > F'= 0.4412

TTEST PROCEDURE

VARIABLE: J16

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.75510204	0.87615526	0.05597551	1.00000000	5.00000000	UNEQUAL	0.3702	486.7	0.7114
2	245	1.72653061	0.83144539	0.05311910	1.00000000	4.00000000	EQUAL	0.3702	488.0	0.7114

FOR H0: VARIANCES ARE EQUAL, F'=   1.11 WITH 244 AND 244 DF   PROB > F'= 0.4138

VARIABLE: C1

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.70204082	1.29508684	0.08274006	1.00000000	6.00000000	UNEQUAL	-0.9217	487.1	0.3571
2	245	2.81224490	1.35102157	0.08631360	1.00000000	6.00000000	EQUAL	-0.9217	488.0	0.3571

FOR H0: VARIANCES ARE EQUAL, F'=   1.09 WITH 244 AND 244 DF   PROB > F'= 0.5094

VARIABLE: C2

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.95510204	1.58954850	0.10155253	1.00000000	8.00000000	UNEQUAL	-1.1020	486.2	0.2710
2	245	3.11836735	1.68839742	0.10786775	1.00000000	8.00000000	EQUAL	-1.1020	488.0	0.2710

FOR H0: VARIANCES ARE EQUAL, F'=   1.13 WITH 244 AND 244 DF   PROB > F'= 0.3466

VARIABLE: C3

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	4.32244898	1.41931427	0.09067666	1.00000000	5.00000000	UNEQUAL	0.4342	486.8	0.6643
2	245	4.26530612	1.49281764	0.09537262	1.00000000	6.00000000	EQUAL	0.4342	488.0	0.6643

FOR H0: VARIANCES ARE EQUAL, F'=   1.11 WITH 244 AND 244 DF   PROB > F'= 0.4308

VARIABLE: D1

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.92653061	1.97180698	0.12597413	1.00000000	6.00000000	UNEQUAL	1.4364	486.5	0.1515
2	245	2.67755102	1.86372460	0.11906900	1.00000000	6.00000000	EQUAL	1.4364	488.0	0.1515

FOR H0: VARIANCES ARE EQUAL, F'=   1.12 WITH 244 AND 244 DF   PROB > F'= 0.3791

TTEST PROCEDURE

VARIABLE: D2

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.63265305	2.13570234	0.13644502	1.00000000	6.00000000	UNEQUAL	0.1264	488.0	0.8995
2	245	2.60816327	2.15237543	0.13751022	1.00000000	6.00000000	EQUAL	0.1264	488.0	0.8995

FOR HO: VARIANCES ARE EQUAL, F'=   1.02 WITH 244 AND 244 DF   PROB > F'= 0.9034

VARIABLE: D3

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	2.97142857	1.10661202	0.07069885	1.00000000	5.00000000	UNEQUAL	0.0803	487.5	0.9360
2	245	2.96326531	1.14281323	0.07301166	1.00000000	5.00000000	EQUAL	0.0803	488.0	0.9360

FOR HO: VARIANCES ARE EQUAL, F'=   1.07 WITH 244 AND 244 DF   PROB > F'= 0.6154

VARIABLE: D4

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	3.80816327	1.24133666	0.07930609	1.00000000	6.00000000	UNEQUAL	0.7125	486.1	0.4765
2	245	3.73061224	1.16685862	0.07454786	1.00000000	6.00000000	EQUAL	0.7125	488.0	0.4765

FOR HO: VARIANCES ARE EQUAL, F'=   1.13 WITH 244 AND 244 DF   PROB > F'= 0.3344

VARIABLE: D5

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	15.90204082	2.36578149	0.15114424	12.00000000	20.00000000	UNEQUAL	1.9415	488.0	0.0528
2	245	15.48571429	2.38093521	0.15211237	12.00000000	20.00000000	EQUAL	1.9415	488.0	0.0528

FOR HO: VARIANCES ARE EQUAL, F'=   1.01 WITH 244 AND 244 DF   PROB > F'= 0.9206

VARIABLE: D6

TIME	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > |T|
1	245	1.36734694	0.48306898	0.03086214	1.00000000	2.00000000	UNEQUAL	-2.5712	487.4	0.0104
2	245	1.48163265	0.50068538	0.03198762	1.00000000	2.00000000	EQUAL	-2.5712	488.0	0.0104

FOR HO: VARIANCES ARE EQUAL, F'=   1.07 WITH 244 AND 244 DF   PROB > F'= 0.5762

APPENDIX C

ATTRIBUTE CLASSIFICATION

ATTRIBUTE CLASSIFICATION

Attached is a listing of attributes that might be considered by a buyer when considering attending a professional development program such as we continually offer. I need your assistance in classifying these attributes into three categories: (1) low level program attributes, (2) high level program attributes, and (3) supplier attributes. Definitions for these items are as follows:

(1) LOW LEVEL PROGRAM ATTRIBUTES: Lower level program attributes are often uni-dimensional and measurable features of the program that may include features related to the physical composition or representation of the professional development program.

(2) HIGH LEVEL PROGRAM ATTRIBUTES: High level program attributes are often abstract and multi-dimensional characteristics that give rise to personal or professional utility. These attributes are difficult to measure, dependent upon lower level attributes and reflect the overall character of a professional development program.

(3) SUPPLIER ATTRIBUTES: Supplier attributes are any purchasing criterion or seller characteristic that influences a buyer's evaluation of a specific program, but is not a characteristic of the program itself.

Please place a check mark in the column you feel best classifies the attribute. Also, feel free to add any attribute that you feel has been omitted.

PROFESSIONAL DEVELOPMENT PROGRAM ATTRIBUTES	(1) Low Level Program Attributes	(2) High Level Program Attributes	(3) Supplier Attributes		
1. Provides job knowledge	0	8	0	2*	
2. Is held in a hotel	7	0	1	1	
3. Is sponsored by a university	0	1	7	3	
4. Is an informational update	0	8	0	2	
5. Provides financial security	1	5	2	-	2**
6. Costs fifty dollars per day	2	0	6	3	
7. Is taught by a university professor	1	1	6	3	
8. Draws attendees from one industry	2	2	4	-	
9. Is presented in a lecture format	6	2	0	1	
10. Is one day long	7	0	1	1	
11. Is held on a work day	6	0	2	1	
12. Provides a workbook of materials	7	0	1	1	
13. Has luncheons provided	4	0	4	-	
14. Is advertised on a brochure	2	2	4	-	
15. Is an established program	1	5	2	-	2
16. Sponsor's reputation	0	3	5	-	3
17. Provides refund policy	2	0	6	3	
18. Provides skill development	0	8	0	2	
19. Provides personal status	0	7	1	2	
20. Has dinners provided	5	0	3	-	1
21. Is taught by consultants	1	1	6	3	
22. Attendees from various industries	2	4	2	-	2
23. Attendees will be local	2	4	2	-	
24. Uses case method	7	1	0	1	
25. Is offered on non-work days	6	0	2	1	
26. Costs one hundred dollars per day	2	1	5	-	
27. Awards continuing education units	1	2	5	-	
28. Is advertised in catalogue	1	1	6	3	
29. Is recommended by friend	0	3	5	-	
30. Is three days long	7	0	1	1	X
31. Has social hours	6	1	1	1	
32. Awards college credit	0	3	5	-	3
33. Offers behavioral change	1	7	0	2	
34. Is taught by industrial specialists	1	1	6	3	
35. Attracts regional audience	3	3	2	-	
36. Uses role plays	7	0	1	1	
37. Improves job efficiency	0	8	0	2	
38. Is held on university campus	3	0	5	-	1
39. Provides textbooks	5	0	3	-	
40. Is advertised on radio	2	1	5	-	

PROFESSIONAL DEVELOPMENT PROGRAM ATTRIBUTES	(1) Low Level Program Attributes	(2) High Level Program Attributes	(3) Supplier Attributes		
41. Offers discounts for multiple enrollments	1	0	7	3*	
42. Costs one hundred fifty dollars per day	2	0	6	3	X**
43. Increases general ability	0	8	0	2	
44. Promotes participant interaction	0	8	0	2	
45. Attracts national audience	1	2	5	-	
46. Awards certificates	5	1	2	-	
47. Is two days long	7	0	1	1	X
48. Is advertised in newspaper	2	1	5	-	3
49. Is recommended by business associate	0	2	6	3	
50. Is one week long	7	0	1	1	
51. Attendance is required by company	1	2	5	-	
52. Assists in career change	0	8	0	2	
53. Increases promotion potential	0	7	1	2	
54. Brochure design is attractive	1	1	6	3	
55. Increases general knowledge	0	8	0	2	
56. Advertised in personal letter	1	1	6	3	
57. Is held in the evenings	7	0	1	1	X
58. Is held at resort location	5	0	3	-	1
59. Is a new program	4	1	3	-	
60. Provides social environment	5	2	1	-	
61. Is combined with vacation	3	1	4	-	
62. Helps build business contacts	0	6	2	2	
63. Provides idea exchange	0	8	0	2	
64. Uses audio-visual presentations	8	0	0	1	
65. Presented close to work location	5	0	3	-	
66. Includes recreational activities	4	1	3	-	
67. Brochure graphics	1	1	6	3	X
68. Reputation of the program	1	2	5	-	
69. Reputation of instructor	2	2	4	-	3
70. Taught by men	6	0	2	1	X
71. Taught by women	6	0	2	1	X
72. Service provided at program facility	3	1	4	-	
73. Time of year	7	0	1	1	
74. Time of month	7	0	1	1	X
75. Tuition credit plan	2	1	5	-	
76. Tuition tax deductible	2	0	6	3	X

PROFESSIONAL DEVELOPMENT PROGRAM ATTRIBUTES	(1) Low Level Program Attributes	(2) High Level Program Attributes	(3) Supplier Attributes	
77. Comfort of classroom	7	0	1	1[*]
78. Exhibitors present	5	2	1	- 1[**]
79. Previous participant testimonials	3	2	3	-
80. Efficiency of course coordinators	1	1	6	3
81. Ease and efficiency of enrollment	3	0	5	-

[*]First Classification.
[**]Adjusted Classification.

ANALYSIS OF ATTRIBUTE CLASSIFICATION CHANGES

Attribute Number	Number of Experts Agreeing	Classification H L P			Description
--	6 or more	13	19	15	--At least six of eight experts agreed on the classification of 47 attributes.
5	5	+			--Financial security
15	5	+			--Establish program
16	5			+	--Sponsors reputation
20	5		+		--Dinners to meals
22	4	+			--Combined all referring to program audience
30	7		-		--Combined under program length
32	5			+	--Combined with others to form credit, certificates, etc.
38	5		+		--University campus
42	6			-	--Combined with registration fee
47	7		-		--Combined under program length
48	5			+	--Advertised in newspaper
50	7		-		--Combined under program length
57	7		-		--Combined with weekends
58	5		+		--Resort location
67	6			-	--Combined with brochure attractiveness
69	4			+	--Instructor credibility
70	6		-		--Eliminated sex of instructor
71	6		-		--Eliminated sex of instructor
74	7		-		--Combined with year
76	6			-	--Eliminated tax deductible
78	5		+		--Added exhibitors
Total		16	16	16	Included in study

APPENDIX D

PRETEST SURVEY

PLEASE ASSIST US IN PROVIDING FUTURE PROFESSIONAL DEVELOP-
MENT PROGRAMS THAT MEET YOUR NEEDS BY COMPLETING THE
FOLLOWING FOUR QUESTIONS.

I. Listed below are a number of items that you might con-
    sider in deciding whether or not to attend a profes-
    sional development program. Please indicate the
    "degree of consideration" you give each attribute when
    deciding whether to attend a program by checking the
    appropriate description provided. If you "always con-
    sider" the item, mark the far left space. If you
    "never consider" the item, mark the far right space.
    If your consideration differs from either of the
    extremes, mark the appropriate space. For example, if
    you "usually consider": this item in deciding to
    attend a program, mark:

_____;   __X__;   _____;   _____;   _____;
Always   Usually   Sometimes Seldom   Never
Consider Consider Consider Consider Consider

PROFESSIONAL DEVELOPMENT PROGRAM:

	Always Consider ←←←←←			→→→→→ Never Consider	
1 - increases job knowledge	16	2	__	__	__	1.1*
2 - is held in a hotel	__	__	4	5	9	4.3
3 - is sponsored by a university	1	7	5	4	1	2.8
4 - is an informational update	5	9	3	__	__	1.9
5 - provides opportunity for salary increase	3	6	4	3	2	2.7
6 - costs fifty dollars per day	3	4	4	4	3	3.0
7 - is taught by a university professor	__	8	5	2	3	3.0
8 - attracts attendees from one industry	1	11	1	4	1	2.6
9 - is presented in a lecture format	__	8	4	6	__	2.9
10 - is one day long	2	7	5	4	__	2.6
11 - is held on a work day	7	4	6	1	__	2.1
12 - provides a workbook of materials	5	4	5	3	__	2.4
13 - has luncheons provided	__	__	5	8	5	1.0
14 - is advertised on a brochure	__	6	4	5	3	3.3
15 - is an established program	6	8	2	1	1	2.1
16 - sponsor's reputation	13	4	1	__	__	1.3
17 - provides refund policy	2	4	2	8	2	3.2
18 - provides skill development	11	6	1	__	__	1.4

PROFESSIONAL DEVELOPMENT PROGRAM:

Item						Avg
19 - provides personal status	2	7	4	4	1	2.7
20 - has dinners provided	__	2	4	5	7	3.9
21 - is taught by consultants	1	9	5	3	__	2.6
22 - attendees from various industries	2	9	3	3	1	2.6
23 - attracts local audience	2	5	3	4	4	3.2
24 - uses case method	2	5	5	5	1	2.9
25 - is offered on non-work days	3	6	6	2	1	2.5
26 - costs one hundred dollars per day	7	4	3	3	1	2.3
27 - awards continuing education units	1	8	6	2	1	2.7
28 - is advertised in catalog	__	5	3	6	4	3.5
29 - is recommended by a friend	5	11	2	__	__	1.8
30 - is three days long	4	5	6	3	__	2.4
31 - has social hours	__	1	5	4	8	4.1
32 - awards college credit	4	6	5	3	__	2.4
33 - offers behavioral change	3	9	1	5	__	2.4
34 - is taught by industrial specialists	4	8	2	3	1	2.4
35 - attracts regional audience	__	9	6	2	1	2.7
36 - uses role plays	__	5	7	4	2	3.2
37 - improves job efficiency	1.4	4	__	__	__	1.2
38 - is held on university campus	__	5	3	8	2	3.4
39 - provides textbooks	3	4	5	6	__	2.7
40 - is advertised on radio	__	1	1	8	8	4.3
41 - offers discounts for multiple enrollments	1	4	4	4	5	3.4
42 - costs one hundred fifty dollars per day	7	4	2	3	2	2.9
43 - increases general ability	10	6	2	__	__	1.6
44 - promotes participant interaction	6	7	4	1	__	2.0
45 - attracts national audience	4	7	5	2	__	2.3
46 - awards certificates	__	4	4	3	7	3.7
47 - is two days long	4	6	2	5	1	2.6
48 - is advertised in newspaper	__	4	3	6	5	3.7
49 - is recommended by business associate	6	10	2	__	__	1.8
50 - is one week long	5	4	2	5	2	2.7
51 - attendance is required by company	10	6	2	__	__	1.5
52 - assists in career change	7	6	3	2	__	2.0
53 - increases promotion potential	7	7	3	1	__	1.9

PROFESSIONAL DEVELOPMENT PROGRAM:

						*Mean
54 - brochure design is attractive	1	3	4	8	2	3.4
55 - increases general knowledge	6	10	2	__	__	1.8
56 - advertised in personal letter	1	5	5	7	__	3.0
57 - is held in the evenings	3	5	6	3	1	2.7
58 - is held at resort location	4	5	2	6	1	2.7
59 - is a new program	4	9	2	2	1	2.7
60 - provides social environment	1	2	8	5	2	3.3
61 - is combined with vacation	1	6	4	6	1	3.0
62 - helps build business contacts	8	8	__	1	1	1.8
63 - provides idea exchange	14	2	2	__	__	1.3
64 - uses audio-visual presentations	3	5	6	3	1	2.7
65 - presented close to work location	7	6	3	__	__	2.0
66 - includes recreational activities	1	1	2	10	4	3.8
67 - brochure graphics	__	1	4	9	4	3.4
68 - reputation of the program	10	7	1	__	__	1.5
69 - credentials of instructor(s)	12	6	__	__	__	1.3
70 - taught by men	__	__	2	7	9	4.4
71 - taught by women	__	__	2	7	9	4.4
72 - facility services	1	3	8	5	1	3.1
73 - time of year	4	10	3	__	1	2.1
74 - time of month	4	5	5	2	2	2.6
75 - tuition credit plan	2	5	3	6	2	3.1
76 - tuition tax deductible	3	4	4	5	2	2.9
77 - comfort of classroom	1	7	6	2	2	2.8
78 - exhibitors present	2	4	5	5	2	3.1
79 - previous participant testimonials	3	7	4	3	1	2.6
80 - efficiency of course administration	2	10	5	1	__	2.3
81 - ease of enrollment	2	10	5	__	1	2.3

*Mean values.

II. Listed below are the same items you encountered in question one. Please indicate how each item affects the overall quality of the program. If you feel the item "greatly increases" the quality of the program, mark the far left space. If you feel the item "greatly decreases" the quality of the program, mark the far right space. If you feel the effect on quality differs from either of the extremes, mark the appropriate space. For example, if you feel the item "slightly decreases" the quality of the program, mark:

____;	____;	____;	____;	X ;	____;	____;
Greatly increases quality	Somewhat decreases quality	Slightly increases quality	No affect on quality	Slightly decreases quality	Somewhat decreases quality	Greatly decreases quality

PROFESSIONAL DEVELOPMENT PROGRAM:

Item	Greatly increases quality						Greatly decreases quality	
1 - increases job knowledge	13	4	1	__	__	__	__	1.3*
2 - is held in a hotel	__	1	1	14	2	__	__	3.9
3 - is sponsored by a university	4	3	5	5	1	__	__	2.8
4 - is an informational update	7	9	2	__	__	__	__	1.7
5 - provides opportunity for salary increase	5	4	2	7	__	__	__	2.6
6 - costs fifty dollars per day	__	1	1	13	3	__	__	4.0
7 - is taught by a university professor	1	2	8	6	1	__	__	3.2
8 - attracts attendees from one industry	1	5	4	4	4	__	__	3.3
9 - is presented in a lecture format	1	__	4	7	6	__	__	3.9
10 - is one day long	__	__	4	11	3	__	__	3.9
11 - is held on a work day	__	2	1	13	2	__	__	3.8
12 - provides a workbook of materials	5	6	6	1	__	__	__	2.2
13 - has luncheons provided	__	__	1	3	13	__	__	3.9
14 - is advertised on a brochure	__	__	1	17	__	__	__	3.9
15 - is an established program	5	8	4	1	__	__	__	2.1
16 - sponsor's reputation	10	4	3	1	__	__	__	1.7
17 - provides refund policy	__	1	2	13	1	1	1	4.0
18 - provides skill development	10	5	1	1	__	__	__	1.8
19 - provides personal status	4	2	6	6	__	__	__	2.8
20 - has dinners provided	__	1	4	11	1	__	__	3.8
21 - is taught by consultants	__	4	10	4	__	__	__	3.0

PROFESSIONAL DEVELOPMENT PROGRAM:

#	Item	1	2	3	4	5	6	7	Mean
22	attendees from various industries	___	6	8	3	1	___	___	2.9
23	attracts local audience	___	1	5	10	1	1	___	3.8
24	uses case method	1	4	6	6	1	___	___	3.2
25	is offered on non-work days	___	___	2	12	1	1	2	4.4
26	costs one hundred dollars per day	___	___	5	13	___	___	___	3.7
27	awards continuing education units	___	3	7	8	___	___	___	3.3
28	is advertised in catalog	___	___	1	16	1	___	___	4.0
29	is recommended by a friend	3	6	4	5	___	___	___	2.6
30	is three days long	1	1	5	11	___	___	___	3.4
31	has social hours	___	2	3	11	1	___	1	3.8
32	awards college credit	2	4	5	6	1	___	___	3.0
33	offers behavioral change	3	9	3	3	___	___	___	2.3
34	is taught by industrial specialists	3	7	6	1	1	___	___	2.4
35	attracts regional audience	___	8	4	6	___	___	___	2.9
36	uses role plays	2	3	7	4	___	1	1	3.2
37	improves job efficiency	14	2	2	___	___	___	___	1.3
38	is held on university campus	___	2	2	14	___	___	___	3.7
39	provides textbooks	5	3	7	2	1	___	___	2.5
40	is advertised on radio	___	___	___	16	1	___	1	4.2
41	offers discounts for multiple enrollments	___	___	3	14	___	___	___	3.7
42	costs one hundred fifty dollars per day	___	4	1	13	___	___	___	3.5
43	increases general ability	8	8	1	1	___	___	___	1.7
44	promotes participant interaction	5	6	4	3	___	___	___	2.8
45	attracts national audience	7	2	5	3	1	___	___	2.4
46	awards certificates	___	2	4	12	___	___	___	3.6
47	is two days long	___	2	4	11	1	___	___	3.6
48	is advertised in newspaper	___	___	2	16	___	___	___	3.9
49	is recommended by business associate	6	3	3	6	___	___	___	2.5
50	is one week long	1	2	2	9	4	___	___	3.7
51	attendance is required by company	2	2	2	10	2	___	___	3.4
52	assists in career change	3	10	3	1	1	___	___	2.3
53	increases promotion potential	8	6	3	1	___	___	___	1.8
54	brochure design is attractive	1	2	14	1	___	___	___	3.8
55	increases general knowledge	7	7	2	1	1	___	___	2.0

PROFESSIONAL DEVELOPMENT PROGRAM:

#	Item								Mean*
56	advertised in personal letter	___	2	4	12	___	___	___	3.6
57	is held in the evenings	___	___	4	10	3	___	___	4.1
58	is held at resort location	___	3	5	9	1	___	___	3.4
59	is a new program	1	2	6	6	3	___	___	3.4
60	provides social environment	___	___	___	6	12	___	___	3.7
61	is combined with vacation	___	___	1	14	3	___	___	4.1
62	helps build business contacts	2	8	5	3	___	___	___	2.5
63	provides idea exchange	7	8	2	1	___	___	___	1.8
64	uses audio-visual presentations	4	2	7	4	1	___	___	2.8
65	presented close to work location	2	1	4	10	1	___	___	3.4
66	includes recreational activities	___	___	6	12	___	___	___	3.7
67	brochure graphics	1	___	2	15	___	___	___	3.7
68	reputation of the program	8	3	3	4	___	___	___	2.2
69	credentials of instructor(s)	13	2	2	___	___	___	___	1.4
70	taught by men	___	___	1	17	___	___	___	3.9
71	taught by women	___	___	1	17	___	___	___	3.9
72	facility services	___	6	5	7	___	___	___	3.1
73	time of year	___	2	5	9	1	1	___	3.7
74	time of month	___	2	3	12	___	1	___	3.7
75	tuition credit plan	___	1	3	14	___	___	___	3.7
76	tuition tax deductible	___	2	2	14	___	___	___	3.7
77	comfort of classroom	2	6	7	3	___	___	___	2.6
78	exhibitors present	2	3	6	7	___	___	___	3.0
79	previous participant testimonials	3	3	3	7	2	___	___	3.1
80	efficiency of course administration	6	5	6	___	1	___	___	2.2
81	ease of enrollment	2	4	5	7	___	___	___	3.0

*Mean values.

III. Please answer these questions about your attendance at Professional Development Programs excluding in-house programs sponsored by your firm.

1. Approximately how many Professional Development Programs do you attend per year?

___ 0 ___ 1 ___ 2 _3.3_ 3 ___ 4 ___ 5 ___ over 5

2. Approximately how many days are spent attending Professional Development Programs?

_____ 0-2   _____ 9-11
_2.2_ 3-5   _____ 12-14
_____ 6-8   _____ 15 and over

3. Approximately what percentage of the Professional Development Program fee is paid by your firm?

_____ 0-25%   _3.1_ 51-75%
_____ 26-50%   _____ 76-100%

IV. Please answer these questions related to your firm and your background.

1. What is the approximate number of employees your firm employs?

_____ 0-10   _4.0_ 101-200
_____ 11-50   _____ 201-500
_____ 51-100   _____ 501 and over

2. What type of industry is your firm representing?

_1.3_ service _____ manufacturing _____ wholesaling

_____ retailing _____ extractive industries

3. Your age _32.3_

4. Circle the number of years of education completed by you.

12   13   14   15   16   17   18   19   20
                              (16.2)

5. Sex: _1.5_ Male _____ Female

Thank you very much for taking the time to answer these questions.

APPENDIX E

ANOVA AND DUNCAN'S MULTIPLE RANGE

TEST OF ATTRIBUTE CLASSES

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M   23:32 TUESDAY, JANUARY 12, 1982   95

ANALYSIS OF VARIANCE PROCEDURE

CLASS LEVEL INFORMATION

CLASS   LEVELS   VALUES

GROUP   3   H L S

NUMBER OF OBSERVATIONS IN DATA SET = 1470

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: SECT1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	2	25301.06666667	12650.53333333	165.15	0.0001	0.183773	20.6626
ERROR	1457	112374.71836735	76.60171668		STD DEV		SECT1 MEAN
CORRECTED TOTAL	1459	137675.78503401			8.75224067		42.35782313

SOURCE	DF	ANOVA SS	F VALUE	PR > F
GROUP	2	25301.06666667	165.15	0.0001

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: SECT2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	2	43521.89523809	21760.94761905	334.07	0.0001	0.312923	19.2299
ERROR	1457	95559.84693878	65.13963663		STD DEV		SECT2 MEAN
CORRECTED TOTAL	1459	139081.74217687			8.07091300		41.97074830

SOURCE	DF	ANOVA SS	F VALUE	PR > F
GROUP	2	43521.89523809	334.07	0.0001

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M   23:32 TUESDAY, JANUARY 12, 1982   98

ANALYSIS OF VARIANCE PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE SECT1

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05   DF=1467   MS=76.6017

GROUPING	MEAN	N	GROUP
A	47.077551	490	L
B	43.016327	490	S
C	36.979592	490	H

ANALYSIS OF VARIANCE PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE SECT2

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05   DF=1467   MS=65.1396

GROUPING	MEAN	N	GROUP
A	47.414286	490	L
B	43.959184	490	S
C	34.538776	490	H

APPENDIX F

GLM AND DUNCAN'S MULTIPLE RANGE TEST FOR

PROGRAM EXPERIENCE, EMPLOYMENT, AND

DEMOGRAPHIC VARIABLES

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M   23:32 TUESDAY, JANUARY 12, 1982 101

GENERAL LINEAR MODELS PROCEDURE

CLASS LEVEL INFORMATION

CLASS	LEVELS	VALUES
GROUP	3	F L S
CI	6	1 2 3 4 5 6

NUMBER OF OBSERVATIONS IN DATA SET = 1470

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SECT1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	17	26908.71105253	1562.86535603	20.75	0.0001	0.195450	20.6200
ERROR	1452	110767.07398148	76.28586362		STD DEV		SECT1 MEAN
CORRECTED TOTAL	1469	137675.78503401			8.73417790		42.35782313

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
GROUP	2	25301.06666667	165.83	0.0001	2	15010.30492555	98.38	0.0001
C1	5	1286.52695155	3.37	0.0051	5	1286.52695155	3.37	0.0051
GROUP*C1	10	321.11743431	0.42	0.9371	10	321.11743431	0.42	0.9371

GENERAL LINEAR MODELS PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE SECT1

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05   DF=1452   MS=76.2859

GROUPING		MEAN	N	C1
	A	44.933333	75	5
	A			
	A	43.384615	234	4
B	A	42.825000	360	3
B	A			
B	A	41.960000	75	6
B				
B		41.602881	486	2
B				
B		41.504167	240	1

GENERAL LINEAR MODELS PROCEDURE

MEANS

GROUP	C1	N	SECT1	SECT2
H	1	80	36.2000000	34.2875000
H	2	162	35.8024691	33.8086420
H	3	120	37.3083333	34.1833333
H	4	78	38.5769231	35.5769231
H	5	25	40.6000000	36.6800000
H	6	25	36.9200000	36.4000000
L	1	80	45.6500000	47.5625000
L	2	162	46.6234568	47.6111111
L	3	120	47.5166667	47.0750000
L	4	78	47.6025641	47.2692308
L	5	25	50.1200000	47.8400000
L	6	25	47.8600000	47.3200000
S	1	80	42.6625000	44.0000000
S	2	162	42.3827160	43.8827160
S	3	120	43.6500000	43.7250000
S	4	78	43.9743590	43.9743590
S	5	25	44.0800000	45.4400000
S	6	25	41.1600000	43.9200000

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M   23:32 TUESDAY, JANUARY 12, 1982   109

GENERAL LINEAR MODELS PROCEDURE

CLASS LEVEL INFORMATION

CLASS	LEVELS	VALUES
GROUP	3	H L S
C	8	1 2 3 4 5 6 7 8

NUMBER OF OBSERVATIONS IN DATA SET = 1470

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SECT1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	23	26259.90210778	1141.73487425	14.82	0.0001	0.190737	20.7232
ERROR	1446	111415.88292624	77.05109469		STD DEV		SECT1 MEAN
CORRECTED TOTAL	1469	137675.78503401			8.77787529		42.35782313

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
GROUP	2	25301.06666667	164.16	0.0001	2	10926.63534350	70.91	0.0001
C2	7	744.93823805	1.38	0.2082	7	744.93823805	1.38	0.2082
GROUP*C2	14	213.89720306	0.20	0.9994	14	213.89720306	0.20	0.9994

GENERAL LINEAR MODELS PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE SECT1

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05   DF=1446   MS=77.0511

GROUPING	MEAN	N	C2
A	44.111111	36	8
A			
A	43.040100	399	3
A			
A	42.536424	453	2
A			
A	42.098039	51	7
A			
A	41.985185	135	5
A			
A	41.951515	165	4
A			
A	41.263682	201	1
A			
A	40.166667	30	6

GENERAL LINEAR MODELS PROCEDURE

MEANS

GROUP	C2	N	SECT1	SECT2
H	1	67	35.7164179	33.2089552
H	2	151	36.9536424	34.8476821
H	3	133	37.9022556	34.9624060
H	4	55	36.4000000	34.0000000
H	5	45	37.3111111	34.6666667
H	6	10	35.8000000	34.1000000
H	7	17	35.5294118	34.8823529
H	8	12	38.5833333	35.2500000
L	1	67	45.9104478	47.9104478
L	2	151	47.6291391	47.8344371
L	3	133	47.2631579	47.4436090
L	4	55	46.7454545	47.3636364
L	5	45	46.2666667	44.2666667
L	6	10	44.9000000	47.5000000
L	7	17	47.7647059	48.0000000
L	8	12	50.0000000	50.1666667
S	1	67	42.1641791	42.9552239
S	2	151	43.0264901	43.9271523
S	3	133	43.9548872	44.6992481
S	4	55	42.7090909	44.0909091
S	5	45	42.3777778	42.1777778
S	6	10	35.8000000	45.6000000
S	7	17	43.0000000	44.7058824
S	8	12	43.7500000	45.4166667

GENERAL LINEAR MODELS PROCEDURE

CLASS LEVEL INFORMATION

CLASS	LEVELS	VALUES
GROUP	3	H L S
C3	6	1 2 3 4 5 6

NUMBER OF OBSERVATIONS IN DATA SET = 1470

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SECT1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	17	26371.88056742	1551.28709220	20.24	0.0001	0.191551	20.6659
ERROR	1452	111303.90446659	76.65558159		STD DEV		SECT1 MEAN
CORRECTED TOTAL	1459	137675.78503401			8.75531733		42.35782813

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
GROUP	2	25301.06666667	165.03	0.0001	2	983.41270956	6.41	0.0017
C3	5	495.38268222	1.29	0.2636	5	495.38268222	1.29	0.2636
GROUP*C3	10	575.43121854	0.75	0.6768	10	575.43121854	0.75	0.6768

GENERAL LINEAR MODELS PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE SECTI

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05   DF=1452   MS=76.6556

GROUPING	MEAN	N	C3
A	44.666667	3	6
A			
A	43.285024	207	1
A			
A	42.962963	27	4
A			
A	42.294574	1161	5
A			
A	40.666667	42	2
A			
A	40.000000	30	3

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M   23:32 TUESDAY, JANUARY 12, 1982   125

GENERAL LINEAR MODELS PROCEDURE

CLASS LEVEL INFORMATION

CLASS	LEVELS	VALUES
GROUP	3	F L S
D1	6	1 2 3 4 5 6

NUMBER OF OBSERVATIONS IN DATA SET = 1470

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SECT1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	17	28132.09342890	1654.82902523	21.93	0.0001	0.204336	20.5058
ERROR	1452	109543.69160512	75.44331278			STD DEV		SECT1 MEAN
CORRECTED TOTAL	1469	137675.78503401				8.68581106		42.35782313

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
GROUP	2	25301.06666967	157.68	0.0001	2	17993.94157673	119.25	0.0001
D1	5	1372.66186531	3.64	0.0030	5	1372.66186531	3.64	0.0030
GROUP*D1	10	1458.36489692	1.93	0.0371	10	1458.36489692	1.93	0.0371

STATISTICAL ANALYSIS SYSTEM   23:32 TUESDAY, JANUARY 12, 1982   130

GENERAL LINEAR MODELS PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE SECT1

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05   DF=1452   MS=75.4433

GROUPING		MEAN	N	D1
	A	43.412088	546	1
	A			
B	A	42.517544	114	3
B	A			
B	A	42.261649	279	6
B	A			
B	A	41.777778	81	5
B				
B		41.540123	324	2
B				
B		40.333333	126	4

GENERAL LINEAR MODELS PROCEDURE

MEANS

GROUP	D1	N	SECT1	SECT2
H	1	182	35.4120879	34.7692308
H	2	108	35.6111111	35.0370370
H	3	38	35.0526316	33.0526316
H	4	42	33.9285714	33.8095238
H	5	27	37.1851852	36.4074074
H	6	93	35.9139785	33.9032258
L	1	182	48.0769231	46.6098901
L	2	108	48.2518519	48.1018519
L	3	38	48.8157895	48.5263158
L	4	42	45.1666667	46.7857143
L	5	27	44.2962963	46.1851852
L	6	93	46.9247312	48.3763441
S	1	182	42.7472527	42.4780220
S	2	108	42.6574074	44.3703704
S	3	38	43.6842105	44.4736842
S	4	42	41.9047619	45.3809524
S	5	27	43.8518519	44.8688889
S	6	93	43.9462366	45.2580645

185

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M   2J:32 TUESDAY, JANUARY 12, 1982   133

GENERAL LINEAR MODELS PROCEDURE

CLASS LEVEL INFORMATION

CLASS	LEVELS	VALUES
GROUP	3	H L S
D2	6	1 2 3 4 5 6

NUMBER OF OBSERVATIONS IN DATA SET = 1470

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SECT1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	17	26269.59421820	1545.27024813	20.14	0.0001	0.190808	20.6794
ERROR	1452	111406.19081581	76.72602673		STD DEV		SECT1 MEAN
CORRECTED TOTAL	1469	137675.78503401			8.75933940		42.35782313

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
GROUP	2	25301.06666667	164.88	0.0001	2	8153.89773520	53.14	0.0001
D2	5	651.44284655	1.70	0.1307	5	651.44284655	1.70	0.1307
GROUP*D2	10	317.08470498	0.41	0.9409	10	317.08470498	0.41	0.9409

S T A T I S T I C A L A N A L Y S I S S Y S T E M   23:32 TUESDAY, JANUARY 12, 1982   138

GENERAL LINEAR MODELS PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE SECT 1

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05   DF=1452   MS=76.726

GROUPING		MEAN	N	D2
	A	45.300000	30	3
	A	43.670370	54	4
	A	43.680556	72	5
	A	42.344125	834	1
	A	42.037879	132	2
	A	41.750000	348	6

GENERAL LINEAR MODELS PROCEDURE

MEANS

GROUP	D2	N	SECT1	SECT2
H	1	278	37.1798561	34.4676259
H	2	44	36.5000000	35.9545455
H	3	10	40.4000000	36.8000000
H	4	18	39.3888889	37.3333333
H	5	24	37.5416667	34.9166667
H	6	116	35.8965517	33.4655172
L	1	278	46.9388489	46.7553957
L	2	44	45.7500000	47.2954545
L	3	10	49.6000000	49.2000000
L	4	18	49.3888889	49.9444444
L	5	24	45.7916667	49.7500000
L	6	116	46.7758621	48.0086207
S	1	278	42.9136691	43.2014388
S	2	44	43.8636364	46.0681818
S	3	10	45.9000000	47.6000000
S	4	18	42.8333333	43.6111111
S	5	24	43.7083333	47.0416667
S	6	116	42.5775862	44.0775862

STATISTICAL ANALYSIS SYSTEM   23:32 TUESDAY, JANUARY 12, 1982   141

GENERAL LINEAR MODELS PROCEDURE

CLASS LEVEL INFORMATION

CLASS	LEVELS	VALUES
GROUP	3	H L S
L3	5	1 2 3 4 5

NUMBER OF OBSERVATIONS IN DATA SET = 1470

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SECT1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	14	28045.58835714	2003.25631122	26.59	0.0001	0.203707	20.4927
ERROR	1455	109630.19667687	75.34721421			STD DEV	SECT1 MEAN
CORRECTED TOTAL	1459	137675.78503401				8.68027731	42.35782313

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
GROUP	2	25301.06666667	167.90	0.0001	2	8339.94196723	55.34	0.0001
D3	4	1987.24843808	6.59	0.0001	4	1987.24843808	6.59	0.0001
GROUP*D3	8	757.27325240	1.26	0.2625	8	757.27325240	1.26	0.2625

STATISTICAL ANALYSIS SYSTEM   23:32 TUESDAY, JANUARY 12, 1982   146

GENERAL LINEAR MODELS PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE SECT1

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05   DF=1455   MS=75.3472

	GROUPING	MEAN	N	D3
	A	43.373591	621	4
	A			
B	A	42.857143	21	5
E	A			
B	A	42.794643	336	3
B				
B		40.912086	273	2
B				
B		40.561644	219	1

GENERAL LINEAR MODELS PROCEDURE

MEANS

GROUP	D3	N	SECT 1	SECT 2
H	1	73	34.5068493	32.5616438
H	2	91	34.4175824	33.2417582
H	3	112	36.8214286	34.2946429
H	4	207	39.0676329	36.1111111
H	5	7	36.8571429	29.4285714
L	1	73	45.4931507	47.5068493
L	2	91	45.7582418	46.1648352
L	3	112	47.6517857	48.5089286
L	4	207	47.8164251	47.3623188
L	5	7	49.7142857	46.7142857
S	1	73	41.6849315	43.6301370
S	2	91	42.5604396	42.8351648
S	3	112	43.9107143	44.8571429
S	4	207	43.2367150	44.2028986
S	5	7	42.0000000	40.4285714

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M   23:32 TUESDAY, JANUARY 12, 1982   149

GENERAL LINEAR MODELS PROCEDURE

CLASS LEVEL INFORMATION

CLASS   LEVELS   VALUES

GROUP   3   H L S

DA   6   1 2 3 4 5 6

NUMBER OF OBSERVATIONS IN DATA SET = 1470

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SECT1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	17	26912.95103223	1583.11476660	20.75	0.0001	0.195481	20.6196
ERROR	1442	110762.83400178	76.26294353		STD DEV		SECT1 MEAN
CORRECTED TOTAL	1459	137675.78503401			8.73401074		42.35782313

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
GROUP	2	25301.06666667	165.84	0.0001	2	6432.13325352	42.16	0.0001
DA	5	774.18666414	2.03	0.0710	5	774.18666414	2.03	0.0710
GROUP*DA	10	837.69770143	1.10	0.3598	10	837.69770143	1.10	0.3598

GENERAL LINEAR MODELS PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE SECT1

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05   DF=1452   MS=76.2629

GROUPING	MEAN	N	D4
A	43.333333	9	1
A			
A	43.103448	435	4
A			
A	42.606061	264	5
A			
A	42.304348	138	6
A			
A	42.222222	396	3
A			
A	40.877193	228	2

GENERAL LINEAR MODELS PROCEDURE

MEANS

GROUP	DA	N	SECT 1	SECT 2
H	1	3	31.6666667	31.3333333
H	2	76	34.6578947	34.0263158
H	3	132	36.6666667	34.3181818
H	4	145	37.5586207	34.9586207
H	5	88	37.5340909	34.4431818
H	6	46	39.1739130	35.0869565
L	1	3	53.6666667	56.3333333
L	2	76	45.9605263	47.2631579
L	3	132	47.3106061	47.7348485
L	4	145	47.4344828	47.4344828
L	5	88	47.0113636	47.4204545
L	6	46	46.8260870	46.0869565
S	1	3	44.6666667	44.3333333
S	2	76	42.0131579	43.1710526
S	3	132	42.6893939	44.2727273
S	4	145	44.3172414	44.8965517
S	5	88	43.2727273	43.7159091
S	6	46	40.9130435	41.8478261

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M   23:32 TUESDAY, JANUARY 12, 1982   157

GENERAL LINEAR MODELS PROCEDURE

CLASS LEVEL INFORMATION

CLASS	LEVELS	VALUES
GROUP	3	H L S
DS	9	12 13 14 15 16 17 18 19 20

NUMBER OF OBSERVATIONS IN DATA SET = 1470

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SECT1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	26	30668.67953547	1179.56459752	15.91	0.0001	0.222760	20.3301
ERROR	1443	107007.10549854	74.15599827			STD DEV		SECT1 MEAN
CORRECTED TOTAL	1459	137675.78503401				8.61138771		42.35782313

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
GROUP	2	25301.06665667	170.59	0.0001	2	18770.11287860	126.56	0.0001
D5	8	4613.13904282	7.78	0.0001	8	4613.13904282	7.78	0.0001
GROUP*D5	16	754.47382599	0.64	0.8567	16	754.47382599	0.64	0.8567

GENERAL LINEAR MODELS PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE SECT1

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05   DF=1443   MS=74.156

GROUPING		MEAN	N	D5
	A	44.066667	60	19
	A			
	A	43.730864	405	16
	A			
	A	43.666667	135	20
	A			
	A	43.136905	168	17
	A			
	A	42.918699	123	18
	A			
	A	42.194444	216	12
	A			
B	A	41.076190	405	15
B				
B	C	39.735849	159	14
	C			
	C	37.828283	99	13

GENERAL LINEAR MODELS PROCEDURE

MEANS

GROUP	DS	N	SECT1	SECT2
H	12	72	35.2361111	31.8472222
H	13	33	31.5454545	30.5757576
H	14	53	34.1132075	33.2641509
H	15	35	35.8000000	32.6000000
H	16	135	38.6444444	35.5851852
H	17	56	37.9464286	35.7321429
H	18	41	37.7073171	36.4146341
H	19	20	40.6000000	36.4500000
H	20	45	39.5777778	37.5777778
L	12	72	46.9861111	45.6111111
L	13	33	42.3939394	44.6060606
L	14	53	45.2641509	46.4528302
L	15	35	46.0571429	46.5428571
L	16	135	48.2888889	47.6444444
L	17	56	48.1607143	49.9285714
L	18	41	47.3170732	48.0487805
L	19	20	47.6000000	47.9000000
L	20	45	48.1555556	49.5555556
S	12	72	44.3611111	41.6805556
S	13	33	39.5454545	41.0909091
S	14	53	39.8301887	42.8679245
S	15	35	41.3714286	41.0285714
S	16	135	44.2592593	44.8740741
S	17	56	43.3035714	45.0892857
S	18	41	43.7317073	45.9024390
S	19	20	44.0000000	46.6500000
S	20	45	43.2666667	46.1555556

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M   23:32 TUESDAY, JANUARY 12, 1982   165

GENERAL LINEAR MODELS PROCEDURE

CLASS LEVEL INFORMATION

CLASS	LEVELS	VALUES
GROUP	3	H L S
LO	2	1 2

NUMBER OF OBSERVATIONS IN DATA SET = 1470

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SECT1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	5	29000.35373969	5800.07074794	78.13	0.0001	0.210642	20.3405
ERROR	1464	108675.43129433	74.23185198		STD DEV		SECT1 MEAN
CORRECTED TOTAL	1469	137675.78503401			8.61579085		42.35782313

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
GROUP	2	25301.06666667	170.42	0.0001	2	25301.11973940	170.42	0.0001
D6	1	3519.75644927	47.42	0.0001	1	3519.75644927	47.42	0.0001
GROUP*D6	2	179.53062375	1.21	0.2987	2	179.53062375	1.21	0.2987

STATISTICAL ANALYSIS SYSTEM   23:32 TUESDAY, JANUARY 12, 1982   170

GENERAL LINEAR MODELS PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE SECT1

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05   DF=1464   MS=74.2319

GROUPING	MEAN	N	DG
A	43.686761	846	1
E	40.556050	624	2

GENERAL LINEAR MCCELS PROCEDURE

MEANS

GROUP	DS	N	SECT 1	SECT 2
H	1	282	38.5851064	36.4929078
H	2	208	34.8028846	31.8894231
L	1	282	47.5893617	48.1312057
L	2	208	45.8413462	46.4423077
S	1	282	44.4858156	45.8120567
S	2	208	41.0240385	41.4471154

APPENDIX G

CANONICAL ANALYSIS OF ATTRIBUTE CLASSES

CANONICAL CORRELATION ANALYSIS

490 OBSERVATIONS
16 'VAR' VARIABLES
16 'WITH' VARIABLES

CANONICAL CORRELATIONS AND TESTS OF H0: THE CANONICAL CORRELATION IN THE CURRENT ROW AND ALL THAT FOLLOW ARE ZERO

	CANONICAL CORRELATION	ADJUSTED CAN CORR	APPROX STD ERROR	VARIANCE RATIO	CANONICAL R-SQUARED	LIKELIHOOD RATIO	F STATISTIC	NUM DF	DEN DF	PROB>F
1	0.708396138	0.681452987	0.022528248	1.0073	0.501825088	0.140617868	3.8584	256	5244.9	0.0001
2	0.559894274	0.512992645	0.031045435	0.4566	0.313481558	0.282266058	2.7578	225	4928	0.0001
3	0.467552054	0.405613786	0.035335907	0.2798	0.218604923	0.411155851	2.1949	196	4610.4	0.0001
4	0.408562802	0.343430811	0.037673026	0.2004	0.166923400	0.526181778	1.8235	169	4292.1	0.0001
5	0.356324825	0.299040097	0.039479900	0.1454	0.126967381	0.631612721	1.5217	144	3973.2	0.0001
6	0.296094055	.	0.041256912	0.0961	0.087671689	0.723469784	1.2697	121	3653.7	0.0263
7	0.286484696	.	0.041510072	0.0894	0.082073481	0.792992803	1.0977	100	3334	0.2406
8	0.201512954	.	0.043385230	0.0423	0.040607471	0.863895733	0.8520	81	3014	0.8239
9	0.194832640	.	0.043504964	0.0395	0.037959758	0.900461184	0.7723	64	2694.3	0.9082
10	0.154238297	.	0.044001747	0.0277	0.026974218	0.935991182	0.6358	49	2375.3	0.9772
11	0.131577733	.	0.044438656	0.0176	0.017312700	0.961938727	0.5074	36	2057.9	0.9936
12	0.116244953	.	0.044620958	0.0135	0.013261399	0.978885885	0.4018	25	1743.8	0.9963
13	0.067551535	.	0.045015208	0.0046	0.004563210	0.992061854	0.2345	16	1436.5	0.9993
14	0.053861427	.	0.045090375	0.0029	0.002901053	0.996609593	0.1779	9	1146.4	0.9957
15	0.022105069	.	0.045199466	0.0005	0.000488634	0.999509223	0.0579	4	944	0.9938
16	0.001464368	.	0.045221466	0.0000	0.000002144	0.999997856	0.0010	1	473	0.9746

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS

STATISTIC	VALUE	F	NUM DF	DEN DF	PROB>F
WILKS' LAMBDA	0.1406179	3.858449	256	5244.858	0.0001
PILLAI'S TRACE	1.641638	3.379977	256	7568	0.0001
HOTELLING-LAWLEY TRACE	2.423594	4.31821	256	7298	0.0001
ROY'S GREATEST ROOT	1.007327	29.77911	16	473	0.0001

NOTE: F STATISTIC FOR ROY'S GREATEST ROOT IS AN UPPER BOUND

CANONICAL CORRELATION ANALYSIS

STANDARDIZED CANONICAL COEFFICIENTS FOR THE 'VAR' VARIABLES

	V1	V2	V3	V4	V5	V6	V7	V8
H1	0.2293131198	-0.3177103501	0.2257672020	-.1617405656	-.0183800254	0.1869079277	-.5165348903	0.1405946766
H2	0.0286700147	-0.2735241763	-.3660202619	-.4557826421	-.2131296569	-.2057607711	0.1451809641	0.0024534753
H3	0.1073514396	0.0043011273	-.2746591410	0.0175267369	0.1223903463	-.0733124575	0.4596205027	.4385650998
H4	0.2612226147	-.3321008096	-.2828401346	0.0887188706	-0.5194346294	-.5922515710	-.0546674466	0.2976372647
H5	0.1142211573	-0.3131598137	0.3084061616	0.3021949901	-.0921776722	-.4443425373	-.0546046188	.0414743760
H6	-.3453756505	-0.0979523652	0.3744898021	-.2762064837	0.1815050222	-.3770546803	-.3534303778	-.7394944487
H7	-.2522273525	0.1172034460	0.0280323463	0.4132663199	0.0654438199	-.1089242520	0.1497669773	0.2736972799
H8	0.1450298274	0.0801185637	-.3205175120	-.0203453307	0.1203723914	0.3136617590	0.3072819179	0.2142788013
H9	0.1222900559	0.1748111166	-.0399644869	-.0163172494	-0.6315554933	0.4803520150	-.1285738121	-.0337198060
H10	-.0795794978	0.1765165554	-.0872821331	0.1127783766	-.0720226551	-.3727133019	0.3399765108	0.3959452166
H11	0.1510435962	0.0627549220	-.5126273552	0.0634235676	-.7716158106	-.0068046802	-.3664535771	-.0103637287
H12	0.1112161400	0.1786588428	0.1160423674	-.0522946277	-.2359441858	-.2232892266	-.1806562641	0.4802048272
H13	0.0534912144	0.0778572562	0.1388040547	0.0427282663	-.2150248336	0.0003335455	0.0778562204	.2105956906
H14	-.0259604228	-.0938334579	0.0900442615	-0.9041953975	-.0390465886	0.1576021442	-.3206773686	-.2991068043
H15	0.0873966154	-.2551191920	-0.5600031673	-.2245111057	0.1027149544	-.0000429874	0.2671713242	0.5661640414
H16	0.4298085040	-.1175882668	-0.4263059641	-.3513024322	-.0916159895	0.0520061729	0.4648346068	.4129341742

	V9	V10	V11	V12	V13	V14	V15	V16
H1	-.3332320857	-.4081719884	0.1870615300	-.4056092200	-.0354551034	0.4377332186	0.2190626506	0.3799718237
H2	-.1703005831	0.0595399649	0.0387905249	0.0186763992	0.5948356260	-.5247646795	0.2342384796	0.0765304389
H3	-.3869260711	-0.445279836	-.1320211442	-.4548785988	-.5492717824	-0.2596524523	-0.2638167825	-.4061024654
H4	0.3289672723	-.2385028348	0.2690927438	-.0016835513	-.0794217832	-.0746789657	-.1860866039	0.3867533627
H5	-.0905964191	-.4624226661	0.2565957318	0.2837286129	-.0641229952	0.0592115503	-.024345035E	-.0315001571
H6	0.7032404372	0.2633299020	-.1182753168	-.2856909187	0.0225492505	0.2007685366	0.0382518691	0.0646054967
H7	-.8867912425	0.5471503265	0.3653640623	-.1466732017	0.0461175754	-.1101514662	-.5429849939	0.3835444983
H8	0.0920760678	-.3820603318	-.4838345909	0.4747653822	0.5178224687	0.7962368186	0.1557232250	-.0560630441
H9	0.2111949642	0.4816387887	0.1652316918	0.4035982421	0.0502481896	-.3951769369	-.1283502300	-.3658958234
H10	0.5549609135	-.3264331247	0.0810214332	-.9538278525	0.0739113472	-.3046693874	-.3160547647	-.1709765466
H11	-.2842964692	0.3008094238	0.5007288990	0.1662109356	-.1351316745	-.4140951582	-.4942505466	.0235725725
H12	0.1083869769	0.1653134390	-.7807730664	0.0004025186	-.2703911506	-.0236027651	-.1621076760	-.0134371225
H13	0.0239186040	0.1611994664	0.1524589150	0.6571784077	-.6519145548	-.0225070920	0.5981561868	0.7351436116
H14	-.1160050733	-.0443207353	-.5048376659	-.0378251406	0.4039678192	-.5219577692	0.4595999348	0.0517188639
H15	0.0048977395	-.3171239599	0.3730870193	-.1871579059	0.3189984658	0.2417509943	-.5401729637	-.2296145813
H16	-.1595007089	-.3064400215	-.1953416418	0.1851639538	0.0022601605	-.2785445678	-.6570929199	0.0936475732

CANONICAL CORRELATION ANALYSIS

STANDARDIZED CANONICAL COEFFICIENTS FOR THE 'WITH' VARIABLES

	W1	W2	W3	W4	W5	W6	W7	W8
_1	-.0509872493	-0.3967510879	-.1023416126	0.0380154129	-.0483966323	-.1341469137	-.0832279250	0.1626127610
_2	0.2800905159	-.242896299	-.1554550761	0.0263510169	0.1797558180	0.2277667714	-.4897794496	-.2635726675
L3	-.0072998119	-.0595218169	-.0933962010	-.1024585932	0.1040334652	-.1422274890	-.1853118843	-.0997734545
L4	-.0617206814	-0.3639723055	0.1412456627	-.2083603215	-.0539669230	-.1262627694	-.0780812805	-.3576077526
L5	0.0948960825	0.0901876196	0.0289872509	0.0551472189	-.3502291871	0.1278658096	-.0806624591	0.0254159779
L6	0.0565523765	0.0099785165	-.3062693534	-.6442705822	-.3964446860	0.2888534108	0.0946913006	0.0403784051
_7	0.0419089424	0.224793656	-.1745542375	-.0777603065	-0.6715982490	-.1733250422	0.2227727867	-.2306412818
L8	0.2577655804	-.1283259340	-.558476437E	0.0594071123	0.0548218849	-.5156797068	0.3664263540	0.1728480555
_9	-.0793901100	0.1095909605	-.0560516276	-.1423514186	0.0624001789	-.5524642515	-.2645557917	0.0250029086
L10	0.1841181932	-0.3392324157	-.0976159872	-.0013512187	-0.5215975431	0.7040151669	-.0626986464	0.4833457316
L11	0.1908851410	0.0562164759	0.2593038646	-.0207871632	-.3676776216	0.0206050364	0.1279281401	0.3783441144
_12	-.0161294579	0.4893719900	0.1179253457	-.1022572340	-.4052810444	-.0814701758	-.0454698403	-.1847921097
L13	0.2793907439	-.0961703750	-0.4611228852	-.0654314415	-.0261987901	0.1640618421	-.2181225652	-.6769726723
_14	-.0701140074	0.0809367191	-.3546321517	-0.8494031518	-.2423740910	0.1355924672	-.0659285208	-.3021858573
_15	0.0651495658	-.1484574647	0.4631906766	0.3231591153	0.0147542379	-.3353051752	-.482427501E	0.5067522211
_16	0.2977644354	-.2350895067	0.4297919961	-.0668711568	0.1770939460	-.0822287188	0.7595587958	0.0505291976

	W9	W10	W11	W12	W13	W14	W15	W16
L1	-.5327725410	-.4741032883	0.1267839464	-.2263349614	0.3960502090	0.1457924678	0.1747184699	0.0038391880
_2	-.3652556200	-.0860294971	-.2638327968	0.6447682746	0.0605436752	0.4224081912	-.1304379384	-.0489044324
L3	-.0083157827	-.1139140065	-0.5272051236	-.0510095206	0.0829805205	-.9745714832	0.3722268555	0.1883881929
L4	0.3046093697	-.3406428023	-.0429435913	0.1097522029	0.1345873013	-.1420451869	-.6270531090	0.4177327536
_5	-.0379996546	-.4895208788	0.1306769562	-.117351297B	-.7397170454	-.0143073365	0.1331069851	-.3570346381
L6	0.4313466561	-.0331244701	-.0254000207	-.1772973268	0.5722221533	0.2103632461	0.1864280346	-.3801786528
L7	-.1680858879	-.1489970340	-.1232335421	-.0043631917	-.1868675259	-.2827716321	0.6205354905	0.0505012605
L8	0.0818600694	0.1426591272	0.5024610353	-.1848024129	-.2038447153	0.1965228541	-.3680497780	0.1053319700
L9	-.2634404608	0.2000036870	-.7801000132	-.4212437135	-.3664647197	-.1728088268	-.3886938706	-.2964118014
_10	0.1434629238	0.0124520216	-.086187610S	-.0026930122	-.0480927738	-.2790407887	-.3192110711	0.0718191985
L11	-.0329209216	0.1386217745	-.0542556548	0.2957314117	-.2484477514	0.1361210962	0.4154841524	0.6675719982
_12	-.1093880079	0.5825953578	0.2987119069	0.4587994297	-.2376623853	-.1642183530	-.0358997890	-.2909222497
_13	-.0954948368	0.2969923591	0.277983877E	-.5849613006	0.0706239861	0.2976131412	-.0060673204	-.0247022683
L14	0.2980224993	0.0022792245	-.2079564043	-.2857010645	0.1044841952	-.2474500449	0.1473700579	0.1393904650
L15	0.3441372989	-.0365045477	0.1639734559	0.1425981479	0.1749024233	0.2255252531	0.0188737194	-.2057641659
L16	-.0851603023	-.4341346619	-.2914267865	0.3778134357	0.2572585736	-.0753005517	0.0783098761	.3179349000

CANONICAL CORRELATION ANALYSIS

490 OBSERVATIONS
32 'VAR' VARIABLES
16 'WITH' VARIABLES

CANONICAL CORRELATIONS AND TESTS OF H0: THE CANONICAL CORRELATION IN THE CURRENT ROW AND ALL THAT FOLLOW ARE ZERO

	CANONICAL CORRELATION	ADJUSTED CAN CORR	APPROX STD ERROR	VARIANCE RATIO	CANONICAL R-SQUARED	LIKELIHOOD RATIO	F STATISTIC	NUM DF	DEN DF	PROB>F
1	0.804272405	0.780168748	0.015969810	1.8317	0.646854101	0.026344683	3.6114	512	6405.4	0.0001
2	0.657275074	0.607858195	0.025685372	0.7606	0.432010522	0.074599998	2.7529	465	6053.6	0.0001
3	0.550812668	0.459217366	0.031501584	0.4355	0.303394617	0.131340458	2.3480	420	5697.3	0.0001
4	0.528811382	.	0.033257573B	0.3882	0.279641478	0.188543559	2.1319	377	5336.3	0.0001
5	0.464982957	0.367225455	0.035444247	0.2759	0.216209151	0.261735724	1.9060	336	4970.1	0.0001
6	0.431483363	.	0.036802308	0.2288	0.186177892	0.333935672	1.7546	297	4598.2	0.0001
7	0.409602707	.	0.037634544	0.2016	0.167774378	0.410330057	1.6201	260	4220.3	0.0001
8	0.380185855	0.303876907	0.038685180	0.1690	0.144541285	0.493051459	1.4793	225	3835.7	0.0001
9	0.351449070	0.282741066	0.039635956	0.1409	0.123516449	0.576359151	1.3454	192	3444	0.0014
10	0.313521691	.	0.040776471	0.1090	0.098295851	0.657581252	1.2161	161	3044.4	0.0363
11	0.283749343	.	0.041580608	0.0876	0.080513690	0.729264973	1.1142	132	2636.5	0.1815
12	0.259371716	.	0.042179342	0.0721	0.067273687	0.793122165	1.0282	105	2219.6	0.4103
13	0.237313934	.	0.042674780	0.0597	0.056317903	0.850326783	0.9406	80	1793.4	0.6279
14	0.213451442	.	0.043161200	0.0477	0.045561518	0.901073344	0.8467	57	1357.5	0.7850
15	0.190320119	.	0.043583559	0.0376	0.036221748	0.944087400	0.7394	36	912	0.8695
16	0.142936682	.	0.044297646	0.0209	0.020430895	0.979569105	0.5607	17	457	0.9201

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS

STATISTIC	VALUE	F	NUM DF	DEN DF	PROB>F
WILKS' LAMBDA	0.02634468	3.611423	512	6405.353	0.0001
PILLAI'S TRACE	2.904735	3.167805	512	7312	0.0001
HOTELLING-LAWLEY TRACE	4.866677	4.183489	512	7042	0.0001
ROY'S GREATEST ROOT	1.831691	26.15383	32	457	0.0001

NOTE: F STATISTIC FOR ROY'S GREATEST ROOT IS AN UPPER BOUND

CANONICAL CORRELATION ANALYSIS

STANDARDIZED CANONICAL COEFFICIENTS FOR THE 'VAR' VARIABLES

	V1	V2	V3	V4	V5	V6	V7	V8
H1	-.0206440277	0.0592004531	0.1469020312	-.1047637019	-.3564980468	0.0452514896	-.1375822872	0.2979923804
H2	0.3999638952	0.2183276196	-.2950055517	-.1645726347	0.0409932911	-.0114155992	0.1156350122	-.1462879963
H3	0.1143692213	0.0405882708	0.0391071600	-.2605475731	0.0564584753	0.0795812949	-0.4603423050	-.1135887563
H4	0.116924325B	0.1397628622	0.0539617139	0.0664386818	-.2946408177	0.1441425123	-.1171605543	-.0361286630
H5	0.0806553713	-.1286007172	-.3463121731	-.0604115556	0.0488480914	-.1820361722	0.0097442482	0.3214872524
H6	-.0466414588	0.0489960459	-0.0018904815	0.0601150507	-.1235144118	0.2234580282	0.1061732849	-.3910810818
H7	0.0093690525	0.0731803353	0.1439928517	0.0715875720	0.1789401175	0.2299385201	-.0164102922	0.1360352843
H8	0.0846664320	+0.4598522214	0.2425878094	0.0652826260	-.0168944278	-.2678790979	-.1264941291	0.3537770260
H9	0.1113703785	0.1795932727	0.0922187340	-.1604555509	0.2968534623	-.1202735311	-.1204865866	-.2008032619
H10	-.0074736578	0.1235580697	-0.1817678123	0.2291521638	0.0523986541	-.1903847419	0.1475750543	-.2052600473
H11	0.0850739148	-.1903066353	-0.3303899827	-.3091556285	-.2231933983	-.4787260419	0.0162716202	-.2161997482
H12	0.0694185147	0.0171449713	-.1180768351	0.1505800285	0.1725224617	0.2706326553	-.0341940379	-.0090245497
H13	0.0154366295	-.0008106469	-.1126760070	-.1662513206	0.0501365203	-.0634311944	-.0136417165	0.1394600331
H14	0.0583426372	-0.0435143144	0.0434649668	-.5320586802	-.0517269851	0.0548949360	-.3778123843	-.1272660036
H15	-.0070806863	-.1042785822	-.1155478207	0.1624703962	-.0816164285	0.0371974819	0.2124851170	0.3037689829
H16	0.0318653237	-.1550095904	0.3137517799	0.1512199259	0.2749116773	-.0121493021	-.1694061650	0.3400400155
L1	0.0865508452	0.1583375362	-.2116860574	-.0422825840	-.2983533595	0.0054463131	-.0835653585	0.1689876275
L2	-.0192011982	-.1115526175	0.0248556644	-.0327842683	-.1873992046	-.0660076628	-.1878874053	0.3964080792
L3	0.0683385788	-.1916280193	0.1195791869	-.0254112655	0.0922826423	0.0756699751	0.0123885989	-.1614787142
L4	0.0816740618	0.0866985437	-0.0404630866	0.1617267344	0.0064388609	-.0619244503	0.0485560151	0.0003588767
L5	0.0662907089	0.0574272795	0.2670549265	-.0272986695	-.0421609092	0.0362705676	-0.5159922317	0.2574749088
L6	-.0150631036	-.1303285594	0.0538707642	-.3709614548	0.1338152139	0.0882936953	-.2926461853	-.1199536074
L7	-.0420987100	-.0230122131	0.0509286540	-.1242333586	-.2526605330	-.0804931026	0.1634723920	-.0284893508
L8	-.0567250962	-.1654448130	-.0394415461	-.2290472149	0.0997039568	0.0932527064	-.1806811605	0.2908153943
L9	-0.1698764063	-.0236651742	0.0021233185	0.3218686664	-.0999024636	0.2052157213	0.1009136789	-.1125235867
L10	-0.0560229751	0.1052319231	0.0665682850	-.1074015355	-.2576632043	-.0719121601	-.2504083469	0.0766503353
L11	-0.2175067315	-.1681195672	-.3060050108	0.2198197370	-.2026345737	-.6765965409	0.2128172050	0.0542327809
L12	0.0517636934	-.0076914814	-.1098360831	0.0673535532	-.4134963550	0.3164987260	-.1458561937	.1438099566
L13	0.1636036250	-.2058878547	-.1830579772	-.0493503115	0.3530350300	0.3261289162	0.2562988024	0.0156014209
L14	0.1721617482	0.0502000079	-.0094480158	-.3971343036	0.2177473657	0.1830246951	0.1707281104	0.0164759251
L15	0.0462469818	0.0075704515	0.2363823021	0.1049841169	-.1054752016	0.2953140873	-0.3542025031	0.0486825699
L16	0.1531755819	0.1434916212	-.2062264382	0.2743795378	-.1961401271	-.1600042976	-.1812724853	-.2070489249

CANONICAL CORRELATION ANALYSIS

STANDARDIZED CANONICAL COEFFICIENTS FOR THE 'VAR' VARIABLES

	V9	V10	V11	V12	V13	V14	V15	V16
H1	-.1999946254	0.0831296245	-.1233511442	-.0557248434	0.0732182883	-.1568757086	0.0967974095	-.0277909863
H2	0.0190451786	-.0209464410	-.1570033241	-.0853873620	0.3486269080	-.2269888544	0.4064564568	-.3139174852
H3	0.0304675146	0.1541246775	0.2977423647	-.0996944978	0.1184221175	0.0081312458	-.3808848649	0.1314259120
H4	-.1074556606	0.1785596411	-.1944614481	0.2503459201	0.0615160023	0.2494745713	0.1252630794	-.3102619097
H5	0.0334912598	-.3923075616	0.2951045282	0.4042703212	0.1348606391	0.1753599540	-.1472583613	-.0187410058
H6	0.0423823598	-.1824792049	-.1497549449	0.2384034438	-.0793149475	0.2156156307	-.4522850401	-.1789016558
H7	0.1564306583	-.2350447043	-.1639197379	-.2822663163	0.0582101862	-.5758247028	0.5284366071	-.0350819707
H8	0.0857996512	0.0406726259	0.4709924175	-.3563128189	0.0225001296	0.0920311072	-.2339469253	0.0801576191
H9	-.4950086120	0.1105392538	-.0967217099	-.0971320915	0.1787552834	0.0423885058	0.0454962687	0.5150471678
H10	-.2479299080	0.1408738273	-.0028747554	-.0661445298	-.1895191884	-.1523295829	-.1139623565	-.0512693869
H11	0.3885517097	-.0212380591	0.1027923037	0.1974756320	0.0254957821	0.0714345483	0.0057639645	-.2386473593
H12	-.0541631048	0.0172366170	-.1440777932	-.0467377266	-.1191755028	0.1143597618	0.0547545678	-.3507618161
H13	0.1509267736	0.1983621591	0.2644405472	0.2490381904	0.0751784293	0.1630542246	0.1548560883	-.1557379000
H14	0.0990709732	-.2493736713	-.3394663816	-.0049105356	0.0576449813	-.0031891110	0.1232015818	0.1225431820
H15	-.0541312967	-.3445809094	0.1185587103	-.6660454856	0.0487065200	0.1140826234	0.0271259428	0.0395065580
H16	-.0548100353	0.3052652529	0.0805299354	0.6419493700	0.0823610567	-.1278678256	-.0640927095	-.0224019064
L1	0.3897999734	0.0881055304	-.2585646354	-.0069052457	-.1151389119	-.2409737646	-.4065775874	0.1430755469
L2	-.0564063243	-.2477274782	-.0930856638	-.0540708756	0.0668692295	0.0323683969	-.2940989028	.3122652285
L3	0.0944321300	0.2051189401	0.0499060543	-.5126296646	0.1586127403	0.0745452861	-.2306849849	-.2678266100
L4	-.2589404328	0.0656957227	-.1304462525	0.0340071715	-.4170199313	0.2639554333	-.1136190667	-.3894198586
L5	0.2755678928	-.0802735385	-.2946120527	-.1027960779	-.2862914018	0.2762643368	0.3290122587	0.2653137352
L6	0.1678928343	-.4994634094	0.1793112729	0.2090940191	-.3492009227	-.4007812861	0.2754215508	-.0372533300
L7	0.1853940481	0.1599552646	-.0832881774	0.0757456564	0.2760438449	0.0394658115	0.1243688783	-.0008330236
L8	.1501751385	0.0161504572	0.3124078743	-.2016814068	-.0783361177	0.2211665095	0.2044117759	0.0694112358
L9	0.0225229407	0.3971104706	0.2548645019	-.0130151360	-.5381738309	-.0128620839	-.1096680342	0.3414085843
L10	-.3995480587	-.1098408087	-.1635790143	0.0823824026	-.3363922185	0.0572151077	-.0815688362	-.2672835235
L11	-.2994526702	0.1635877923	-.2122721083	-.1705823760	0.0695066810	-.2805642647	0.0943333283	-.0560432881
L12	-.0353504644	0.2929991414	0.1556782030	-.1591093216	-.1292640242	0.3161972831	0.2801136279	0.0984350365
L13	0.3203529853	0.0451843894	-.1083344078	0.1423464911	0.3774482410	-.0053213034	-.0751439044	0.1169610719
L14	-.3898672350	-.3810357598	-.3564307407	-.0595845475	-.0609496160	0.0478443189	-.3087333800	0.2149586251
L15	-.3139791910	-.0372320078	0.3709288793	0.2004951842	0.1805727084	-.4637831437	0.0179909188	.0059163561
L16	0.1044356143	-.3336430852	0.0706177000	0.0938959328	0.0560044729	0.1490061315	0.2760675380	0.2474251631

CANONICAL CORRELATION ANALYSIS

STANDARDIZED CANONICAL COEFFICIENTS FOR THE 'WITH' VARIABLES

	W1	W2	W3	W4	W5	W6	W7	W8
S1	0.0259222909	0.1876762249	0.0856383090	-.1777033593	-.3357102882	0.3565888608	-.1261428421	0.4455843470
S2	-0.0172637754	-.2652624408	0.0446434965	0.0715360000	-.0286674029	-.1345212764	0.2161091738	0.5634372622
S3	0.0755733524	0.0152714993	-.2013941683	-.4658853193	-.2825075906	0.0608920461	0.0356509894	0.2144097856
S4	0.0540253108	-.0022200934	0.0797319345	-.3386823491	0.0397891545	0.2310534793	0.2407294672	-.2002045956
S5	0.1448199537	0.0653323583	-.2747156795	0.2235443686	-.7611078068	-.2375643274	-.3684245035	-.1670207659
S6	-0.1490203534	-.4015715058	-.1986540002	0.0040356922	-0.4429031841	-.4748655699	0.4433347766	-0.3109150324
S7	0.0588566958	0.0034408529	-.1917236392	-C.4704299422	-.0283365122	0.4575603942	-.2837359936	.2162952308
S8	-0.2095342644	0.5800373336	0.5187498144	0.2613244145	0.1312772166	-.3531436458	-.1846007415	0.2646169835
S9	0.1752943402	0.065799950S	-.2159639666	-.1231687845	0.0246446339	-.2187295185	0.2150420638	-.5155505141
S10	0.1599265335	0.1812490045	-.1187772318	-.0015628885	0.4388863824	0.1551120500	0.0574303566	0.0096907217
S11	0.2806084471	-.2895527335	0.3257426284	-.4135899883	-.0035624135	-.3789355706	-.4233065165	-.1915724569
S12	0.1448872573	0.1870892563	-.2621549463	-.1766350495	0.4571155878	0.2139604388	0.0537542587	-.0131716359
S13	0.2569640099	-.3054849886	0.0176169552	0.1216076020	0.2895054459	0.3692206748	-.4038577075	0.0140364057
S14	0.0559541810	0.0681559813	-.1248954729	-.0971752074	-.2226543934	0.2903640480	0.6397848423	0.2325786561
S15	0.1530707677	-.1257350181	0.4481581557	0.3215779259	-.3330365039	0.2084327178	0.2679505600	.1369856366
S16	-.0363656429	0.2129737841	-.2714740844	0.3010294867	-.2287372664	-.1453251772	0.0892718898	-.2209786953

	W9	W10	W11	W12	W13	W14	W15	W16
S1	0.1424190772	-.0817021604	-.5369829925	-.1097412277	0.0923809568	-.3610913512	-.0151786873	0.3808433913
S2	-.0052813505	-.0000370674	0.2689460683	-.7373257396	0.2029137182	0.4031204238	0.2411788034	0.2006066273
S3	0.3182283673	-.0724041100	0.1356736420	-.0618439067	-.1304870672	-.2249121836	-.4545648047	-.8005508502
S4	-.0723027455	0.2305740517	-.0064963050	0.1290549723	-.1042939743	0.5517105624	-.6629133745	0.4028116712
S5	-.5324379279	0.2044873399	-.0276283713	0.1755826587	0.2820221379	0.2566775226	0.1675573124	0.2209977689
S6	0.2813011161	0.1199055441	-.3685790686	0.4005649546	-.2865977864	-.2782633456	-.2465032168	-.0444540780
S7	-.1144847096	0.2856341758	0.3638025284	-.0954628904	-.5641002761	-.4300799840	-.0562805345	-.3213572517
S8	-.0760510843	-.1838161268	0.3096106260	-.1601245800	-.0083930764	-.1411923669	-.3602179175	0.0458041602
S9	0.0529371582	-.2072633449	-.1008424310	-.4325005458	0.4742026592	-.4300113337	-.1183713870	0.1335162834
S10	-.4408773809	0.4308717595	-.4355712282	-.3655284675	-.1270037142	0.2064604709	0.1194304317	-.3858517313
S11	-.2329634417	0.0600691121	-.0770001424	-.0623314622	-.4051224361	-.0263604640	0.5025464053	0.0179583159
S12	0.2812552436	0.2872905036	0.4274616388	0.3487430115	0.5464920073	0.1653047713	0.4923254458	0.1790001431
S13	-.2414480824	-.6557160200	-.2421937788	C.2713729516	0.2107766371	0.1249406965	-.2424685416	-.1984628230
S14	-.3557837759	-.3859219204	0.2204037354	0.2055446339	-.2067634766	-.2654956084	0.3557203071	-.0574098148
S15	0.3446922272	0.4524936476	-.1280294750	0.2551644278	0.4248110772	-.1252505060	0.0049007524	.2632748855
S16	0.4970604845	-.5378865111	-.0612636712	-.2050882438	-.3659815038	0.5291582253	0.1301671480	0.0230890661

VITA

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Candidate for the Degree of

Doctor of Philosophy

Thesis: IDENTIFICATION AND MODEL FORMULATION OF
PROFESSIONAL SERVICE ATTRIBUTES

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