

SERVICES MARKETING SKILLS, SERVICE QUALITY  
ATTITUDES AND PROFESSIONAL DEVELOPMENT  
NEEDS OF NON-TRADITIONAL  
DIETITIANS

By

MANDY RENEE CAID-JEFFERSON

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Thesis Approved:

*Lee L. Bro*

Thesis Advisor

*Janice R. Hermann*

*U. M. Ward*

*Alfred Saluzzi*

Dean of the Graduate College

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## CHAPTER I

### INTRODUCTION

In a study of employment trends for dietitians in business and industry, most current employers (72%) indicated that the tendency to hire dietitians is increasing. More than 40 percent of employers stated that their organizations were creating new positions for dietitians (Finn, 1998). The demand for services and expertise of dietetic professionals is growing throughout the American business and industry from food companies to advertising agencies to professional sports teams. One in five registered dietitians (RDs) and dietetic technicians, registered is employed by for-profit businesses other than contract food management or managed care organizations (ADA Annual Report 1998-1999). Major reasons cited for adding RDs to the staff were to increase the company's credibility, promote the health and nutrition of customers, and to increase the understanding of customer needs. RDs are not necessarily being hired for positions in dietetics but also for positions in sales, marketing and communications (Finn, 1998). Unlike the "old days" when more than 80% of the dietitians worked in hospitals, the current trend is away from hospital work and into other practice areas or endeavors such as consulting, public health/community nutrition, business/industry/communication, entrepreneurship and nutrition education/wellness/fitness, just to name a few (Caesar, 2000).

Boudreaux and associates (1988) identified marketing skills as one of the two most important skills needed to succeed in business and industry. Over the years, dietitians have become more aware of the need for marketing skills. Having good credentials and licensure will not necessarily attract the customers. “Clients must need or want what we have to sell” (Helm, 1991, pg. 67). We have to make them believe that our product or service is better than the competitor’s. You need to be aggressive and willing to not only market your product, service, company, but also yourself. Customers will identify the product or service with you and if they like you, they like the product (Caesar, 2000). While some dietitians are selling a tangible product, the majority of dietitians are delivering an intangible service. This creates a need for dietitians to possess service marketing skills (Helm, 1991).

Service marketing differs from physical goods marketing. Physical goods marketing is thought to be the simplest form of marketing whereas services marketing is more complex and requires managing more variables (Fisk, Grove, & John, 2000). Services are performances rather than objects (Zeithaml & Bitner, 1996). Services possess four key distinguishing characteristics: intangibility, inseparability, variability and perishability. The service provider is trying to sell something that the potential customer cannot see, feel, taste or evaluate before purchasing. Unlike goods that are produced first, then stored and sold, a service is first sold, then produced and consumed simultaneously. The quality of a service may vary depending on who provides the service as well as how and when it is provided. Also, services cannot be stored for later use (Mudie & Cottam 1999).

The single most important difference between goods and services is intangibility. Intangibility presents several marketing challenges. Services cannot be inventoried, which makes fluctuations in demand more difficult to manage. Services cannot be patented legally therefore, new service concepts can be easily copied by competitors. Services are not readily displayed or easily communicated to customers making it difficult for consumers to assess quality (Zeithaml & Bitner, 1996). Consumers expectations differ between products and services. Consumers evaluate services in regards to those elements that they actually experience in the course of their service delivery and on the perceived service outcome (Lovelock, 1991). Service characteristics (intangibility, inseparability, variability and perishability) create problems of definition and measurement of service quality for marketers. Marketers have not been able to define the exact nature of the problem of purchasing and producing services and therefore are unable to develop a standard set of guidelines on the delivery of service quality. (Garvin, 1982; Tse & Wilton, 1988). The key to delivering service quality is understanding consumers' service quality expectations (Gronroos, 1982; Oliver, 1980).

Expectations are formed before the use of the service while perceptions are the customer's evaluation of the service after it has been provided. After consuming the service, the customer compares the perceived service with the expected service. If the perceived service meets or exceeds the expected service, the customer is satisfied (Mudie & Cottam, 1999). Because expectations play such a major role in determining consumers' post-consumption service quality evaluations, the service marketer must understand consumer's service expectations. When marketers know the consumer's quality expectations, they will be able to develop marketing strategies for service delivery

(Bebko, 2000). "Success will come to those and only those who are obsessed with looking after customers and creating products and services that meet or exceed their customers' needs" (Szablowski, 2000, pg. 12).

### Purpose and Objectives

The purpose of this study is to evaluate non-traditional dietitians' perceptions of their knowledge about services marketing skills, attitudes toward service quality, and professional development needs and preferred continuing education methods. Specific objectives are:

1. To identify the perceptions of service marketing skills of dietitians working in the non-traditional setting.
2. To discover the non-traditional dietitians' attitude towards service quality.
3. To determine what areas of professional development are needed by the non-traditional dietitians and how they would prefer to obtain this knowledge.

### Hypotheses

Specific hypotheses are:

H<sub>1</sub>: There will be no significant association between the perceptions of marketing skills of non-traditional dietitians and selected personal/institutional demographic variables: gender, age, degree, output of organization, salary, and practice group.

H<sub>2</sub>: There will be no significant association between the attitude of service quality scores and selected personal/institutional demographic variables: gender, age, degree, output of organization, salary, and practice group.

H<sub>3</sub>: There will be no significant association between the professional development needs and selected personal/institutional demographic variables: gender, age, degree, output of organization, salary, and practice group.

H<sub>4</sub>: There will be no significant association between the continuing education methods and selected personal/institutional demographic variables: gender, age, degree, output of organization, salary, and practice group.

### Assumptions

1. The non-traditional dietitian will provide reliable and valid assessment of their knowledge about services marketing skills/knowledge level.
2. The non-traditional dietitians' job description includes marketing and service quality.
3. The non-traditional dietitian has a customer/client and is able to identify the customer/client.
4. The non-traditional dietitian will objectively evaluate the service quality needs of their customers.
5. The questions taken from the SERVQUAL instrument are valid for use in this study.

### Limitations

A major limitation of this study is that the survey will only be administered to dietitians who are members of two Dietetic Practice Groups: 1. Dietitians in Business and Communications (DBC) and 2. Nutrition Entrepreneurs (NE). A random sample of

members from both practice groups will be surveyed. Due to financial constraints, only two mailings, the survey and a reminder/thank you postcard, will be sent.

### Definitions

The following definitions will be accepted in this study:

Assurance: knowledge and courtesy of employees and their ability to inspire trust and confidence (Parasuraman, Zeithaml, & Berry, 1988).

Customer: any influencer, decision maker, or actual buyer of a product or service (Bennington & Cummane, 1998).

Customer satisfaction: person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to his or her expectations (Kotler, 1997).

Empathy: caring, individualized attention the firm provides its customers (Parasuraman *et al.*, 1988 ).

Marketing: process of perceiving, understanding, stimulating and satisfying the needs of specially selected target markets by channeling an organization's resources to meet these needs (Payne, 1993).

Non-traditional dietitian: a member of one of the following two American Dietetic Association's Practice Groups: 1. Dietitians in Business and Communications, or 2. Nutrition Entrepreneurs.

Service: a deed, a performance, an effort (Fisk, Grove, and John, 2000).

Service quality: from the provider's perspective, the degree to which the

service's features conform to the organization's specifications and requirements; from the customer's perspective, how well the service meets or exceeds expectations and how much satisfaction it provides (Fisk, Grove, and John, 2000). The difference between customer's expectations for service performance prior to the service encounter and their perceptions of the service received (Asubonteng, McClearly, and Swan, 1996).

Reliability: ability to perform the promised service dependably and accurately (Parasuraman *et al.*, 1988 ).

Responsiveness: willingness to help customers and provide prompt service (Parasuraman *et al.*, 1988 ).

Tangibles: the appearance of physical facilities, equipment, personnel and communications material (Parasuraman *et al.*, 1988).



## CHAPTER II

### REVIEW OF LITERATURE

A review of the literature will focus on the core concepts of marketing, marketing mix, service marketing, service quality, historical review of service marketing (SERVQUAL), customer satisfaction/customer loyalty, the two American Dietetic Association practice groups targeted for the study: Dietitians in Business & Communications and Nutrition Entrepreneurs, career opportunities and the environment for non-traditional dietitians. This study was undertaken to determine the services marketing skills, service quality attitudes and professional development needs of dietitians working in non-traditional settings.

#### Core Concepts of Marketing

Marketing is a social and managerial process by which individuals and groups obtain what they need and want through creating, offering, and exchanging products of value with others. There are 10 types of entities which are marketed: goods, services, experiences, events, persons, places, properties, organizations, information, and ideas (Kotler, 2000). The definition of marketing is based on six core concepts (Kotler, 1997, Figure 1-2 pg. 9):



**Needs, Wants and Demands.** Marketing begins with human needs and wants. People need food, water, air, clothing and shelter for survival. Beyond this, people have a strong desire for recreation, education, and other services. They have strong preferences for certain versions and brands of basic goods and services.

It is important to distinguish among needs, wants and demands. A human *need* is a state of deprivation of some basic satisfaction. For instance, people require food, clothing, shelter, safety, belonging, and esteem. These needs are not created by society or by marketers. They exist in the very texture of human biology and the human condition.

*Wants* are desires for specific satisfiers of needs. For example, a hungry American teenager will purchase hamburger, french fries and a coke. In another society, a hungry person may want mangos, rice and beans. Although people's needs are few, their wants are many. Human wants are shaped and reshaped by social forces and institutions, including churches, schools, families and business corporations.

*Demands* are wants for specific products that are backed by an ability and willingness to buy them. Wants become demands when supported by purchasing power. For instance, many people want a Mercedes but only a few are willing and able to purchase one. Companies must measure not only how many people want their product but, more importantly, how many people would be willing and able to buy it.

The distinctions among needs, wants and demands may explain the frequent criticism that "marketers create needs" or "marketers get people to purchase things they don't want." Marketers do not create needs; needs preexist marketers. Marketers influence demand by making the product appropriate, attractive, affordable, and easily available to target consumers (Kotler, 1997).

**Products (Goods, Services, and Ideas).** People satisfy their needs and wants with products. A *product* is anything that can be offered to satisfy a need or want. A product can consist of as many as three components: physical good(s), service(s), and idea(s). The importance of physical products is not owning them but rather in receiving the service they provide. Physical goods are really vehicles that deliver services to us. Services are also supplied by other vehicles such as people, places, organizations and ideas. The explosion of services and service organizations is a major trend in the United States. Over 70% of the nation's gross national product and employment occurs in the

service sector. A physical object is a means of packaging a service. The marketer's job is to sell the benefits or services that are built into the physical product rather than just describe their physical features.

**Value, Costs and Satisfaction.** Many products are available for consumers to choose from in order to satisfy a given need. All of the possible alternatives compose a product choice set and each product has a different capacity to satisfy the need set. *Value* is the consumer's estimate of the product's overall capacity to satisfy his or her needs. According to DeRose, value is "the satisfaction of customer requirements at the lowest possible cost of acquisition, ownership, and use" (DeRose, 1994, pg. 12).

**Exchange and Transactions.** People can obtain products in one of four ways: (1) self-production, (2) coercion, (3) begging, and (4) exchange. Marketing emerges when people decide to satisfy needs and wants through exchange.

*Exchange* is the act of obtaining a desired product from someone by offering something in return. For exchange potential to exist, five conditions must be satisfied (Kotler, 1997):

1. There are at least two parties
2. Each party has something that might be of value to the other party.
3. Each party is capable of communication and delivery
4. Each party is free to accept or reject the exchange offer.
5. Each party believes it is appropriate or desirable to deal with the other party.

Exchange is a process rather than an event. Two parties are engaged in exchange if they are moving toward an agreement. When an agreement is reached, a transaction takes place. A *transaction* is a trade of values between two or more parties.

To effect successful exchanges, marketers analyze what each party expects to give and get from the transaction. Marketing consists of the actions undertaken to derive desired responses from a target audience.

**Relationships and Networks.** Relationship marketing is the practice of building long-term satisfying relations with key parties (customers, suppliers, distributors) in order to retain their long-term preference and business. Smart marketers try to establish “win-win” relationships with valued customers. They do this by promising and delivering high quality, good service and fair prices to the other party. Relationship marketing results in strong economic, technical and social ties among parties. The ultimate outcome of relationship marketing is the building of a unique company asset called a marketing network. A marketing network consists of the company and all its supporting stakeholders: customers, employees, suppliers, distributors, retailers, ad agencies and others with whom it has built mutually profitable business relationships. The operating principle is: build a good network of relationships with key stakeholders, and profits will follow (Anderson, Hakansson, and Johanson, 1994).

**Markets.** The concept of exchange leads to the concept of a market. A market consists of all the potential customers sharing a particular need or want who might be willing and able to engage in exchange to satisfy that need or want. The size of the market depends on the number of people who express the need or want, have resources that interest others, and are willing and able to offer these resources in exchange for what they want. Sellers and buyers are connected by four flows: the sellers send goods and services and communications(ads, direct mail) to the direct market, in return, they receive money and information (attitudes, sales data) from the buyers.

**Marketers and Prospects.** When one party is more actively seeking an exchange than the other party, the first party is referred to as a marketer and the second party a prospect. A *marketer* is someone seeking one or more prospects who might engage in an exchange of values. A *prospect* is someone whom the marketer identifies as potentially willing and able to engage in an exchange of values. The marketer can be a seller or a buyer. In most cases, the marketer is a company serving a market in the face of competitors. The company and the competitors send their particular products and messages directly through marketing intermediaries to end users. Their relative effectiveness is influenced by their respective suppliers as well as major environmental forces (demographic, economic, physical, technological, political/legal, social/cultural) (Kotler, 1997).

### The Marketing Mix

Marketing mix is one of the key concepts in modern marketing theory. The marketing mix is the set of marketing tools that the firm uses to pursue its marketing objectives in the target market. The most common version of the marketing mix, known as the four Ps of marketing, emphasizes the key role of product, price, promotion, and place in the development of a marketing strategy (Kotler, 1997 & Fisk, Grove, & John, 2000).

- **Product** is the most basic marketing mix tool. Product refers to the firm's tangible offer to the market: physical good features, quality level, accessories, packaging, warranties, product lines and branding.
- **Price** is the amount of money that customers pay for the product. For the average business, pricing skills are the single most crucial skill driving bottom line performance (Alexander, Dull, & Pegg, 1999). Price refers to flexibility, price level, terms, differentiation, discounts and allowances.

- **Promotion** includes all of the activities and people the company undertakes to communicate and promote its products to the target market. These activities and people consist of: sales promotion, salespeople, advertising, public relations and direct marketing.
- **Place** includes the various activities the company undertakes to make the product accessible and available to target customers. Place refers to channels, coverage, assortments, locations, inventory and transport.

In addition to the traditional four Ps, the services marketing mix includes three additional Ps: people, physical evidence and process (Zeithaml & Bitner, 1996 & Fisk, Grove & John, 2000).

- **People** refer to all human actors, whether customers or workers, who are involved in the service production. This includes the recruiting, training, motivation rewards and teamwork of employees; the training and education of customers; employee research, and communicating of culture and values.
- **Physical Evidence** consists of the environment in which the service is delivered and other tangible aspects of the service that facilitate or communicate the nature of the service. Factors composing physical evidence include: facility design, equipment, signage, employee dress and other tangibles such as reports, business cards, statements and guarantees.
- **Process** of service assembly refers to the procedures and flow of activities that contribute to the delivery of the service. The process is composed of the number of steps in the process and the level of customer involvement.

Alexander *et al* (1999) identifies a marketing mix consisting of 8 marketing Ps.

Additional Ps in this mix include: partnering, position, and packaging.

- **Partnering** refers to the companies ability to work with the customers and suppliers to discover ways to effect customer savings.
- **Positioning** is the act of designing the company's offering and image so that they occupy a meaningful and distinct competitive position in the target customers' minds (Kotler, 1997). The end result of positioning is a clear statement of why the target market should buy the product.
- **Packaging** includes the activities of designing and producing the container or wrapper for a product. Packaging has become a potent marketing tool. The importance of packaging cannot be overemphasized, considering the functions it

performs in attracting and satisfying customers. The package is the buyer's first encounter with the product and is capable of turning the buyer on or off (Kotler, 2000).

Alexander *et al* (1999) also identifies the following components for each of the eight marketing Ps as well as the components for marketing strategy:

**Product**

- Develop new products and services
- Manage product mix
- Ensure competitive, consistent products

**Price**

- Understand strategic price management
- Price products to maximize return
- Maximize realized net price for each transaction

**Place**

- Develop and execute an effective channel strategy

**Partnering**

- Develop and execute an effective partnering strategy
- Develop effective partnerships with customers and suppliers

**People**

- Develop and execute an effective sales force strategy
- Provide sales force with effective support
- Ensure an effective and well-trained sales force

**Promotion**

- Develop and execute an effective promotion strategy
- Use electronic multimedia in promotions

**Position**

- Develop and execute an effective brand strategy

**Packaging**

- Develop and execute an effective packaging strategy

**Strategy**

- Possess basic knowledge of customers
- Understand how customers make purchase decisions
- Develop a strategic segmentation
- Define a "value proposition" or promise to the customer

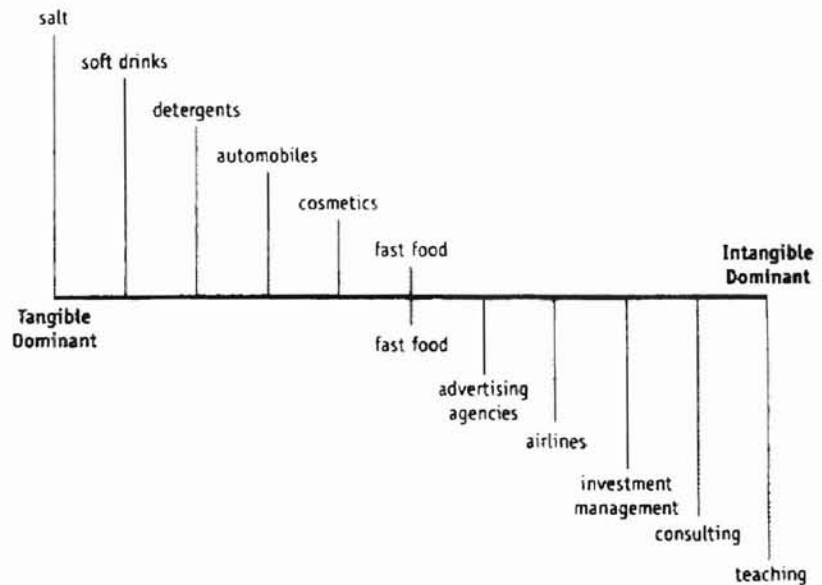


## Services Marketing

“Services permeate every aspect of our lives. In fact, most of us enter life via one service encounter and spend the rest of our lives experiencing a multitude of other service encounters” (Hoffman & Bateson, 1997, pg. 4). Services are everywhere. Since 1900, the United States has had more jobs in the service sector than in manufacturing. Between 1980 and 1990, 80% of all new jobs were developed in service industries. Estimates suggest that 90% of all new jobs between 1990 and 2000 will be service related. Over the years, practitioners in the services field have learned that traditional marketing strategies and managerial models do not always apply to their unique service industries. The recent demand for services marketing knowledge has been fueled by (1) the enormous growth in service-sector employment, (2) increasing service-sector contributions to the world economy, (3) the deregulation of many service industries, and (4) a revolutionary change of perspective in how service firms should organize their companies (Hoffman & Bateson, 1997).

The distinction between goods and services is often unclear. The following scale of marketing entities distinguishes between physical goods and services along a continuum from intangible dominant services to tangible dominant physical goods (see Figure 1.1) (Shostack, 1977 in Fisk, Grove & John 2000). According to this scale, goods are tangible dominant. Goods possess physical properties that can be felt, tasted, and seen prior to the consumer’s purchase decision. The same cannot be said for the purchase of services. Services are intangible dominant. Some services may however have tangible aspects, while some physical goods may have intangible ones. (Hoffman & Bateson, 1997, Fisk, Grove, & John, 2000).

**Figure 1.1**  
**Degree of Tangibility**



Source: From "Breaking Free from Product Marketing" by Lynn G. Shostack. From *Journal of Marketing*, 41, April 1977, pp. 73-80. Reprinted by permission from the American Marketing Association.

Because services lack the physical properties that can be sensed by consumers prior to purchase, a number of marketing challenges arise. For instance, how would you (1) advertise a service that no one could see; (2) price a service that has no cost of goods sold; (3) inventory a service that could not be stored; and (4) mass-merchandise a service that needs to be performed by an individual (Hoffman & Bateson, 1997)? These challenges are primarily attributed to the four unique characteristics of services: intangibility, inseparability, heterogeneity, and perishability.

Of the four unique characteristics that distinguish goods from services, intangibility is the primary source from which the other three characteristics emerge. Services are said to be intangible because they are performances rather than objects.

Services are experienced and consumers' judgements about them tend to be more subjective than objective. The marketing challenges that arise due to the intangibility of services include: lack of service inventories, lack of patent protection, difficulties involved in displaying and communicating the attributes of the service to its intended target market, and the special challenges involved in the pricing of services.

**Lack of Ability to Be Stored.** Because services are intangible, they cannot be inventoried. As a result, supplies of services cannot be stored as buffers against periods of high demand. Customers therefore are commonly forced to wait for desired services, and service providers are limited in how much they can sell by how much they can produce. The inability to maintain an inventory creates constant supply and demand problems.

**Lack of Protection by Patents.** Due to the property of intangibility, services are not patentable. Human labor and effort cannot be patented. One challenge faced by the lack of patent protection is that new or existing services may easily be copied.

**Difficulty of Displaying or Communicating Services.** The promotion of services presents a very big problem for marketers. How do you get customers to take notice to your product when they cannot see it?

**Difficulty of Pricing Services.** Products' prices are often based on cost-plus pricing. The firm figures the cost of producing the product and adds a markup to that figure. With services, there is no cost of goods sold. The primary cost of producing a service is labor.

One of the most fascinating characteristics of the service experience involves the concept of inseparability. Inseparability refers to (1) the service provider's physical

connection to the service being provided; (2) the customer's involvement in the service production process; and (3) the involvement of other customers in the service production process (Hoffman & Bateson, 1997). Service providers are often in constant contact with their customers and must construct their service operations with the customer's physical presence in mind. This interaction between the customer and the service provider is very critical due to the fact that it represents the greatest opportunity for both gains and losses in regard to customer satisfaction and retention. Like the characteristic intangibility, inseparability also creates marketing problems.

**Physical Connection of the Service Provider to the Service.** For many services to occur, the service provider must be physically present to deliver the service. Due to the intangibility of the services, the service provider becomes a tangible clue upon which at least part of the customer's evaluation of the service experience becomes based. As tangible clues, service providers are often evaluated based on their used of language, clothing, personal hygiene, and personal interaction skills. Face-to face interactions with customers makes employee satisfaction crucial. Dissatisfied employees are often visible to customers, and their unhappiness often translates into lower consumer perceptions of the firm's performance. For this reason, employee satisfaction within service firms is extremely important.

**Involvement of the Customer in the Production Process.** Another characteristic of inseparability is that the customer is involved in the production process. The customer's involvement in the process may vary from (1) a requirement that the customer be physically present to receive the service; (2) a need for the customer to be present only to start and stop the service; and (3) a need for the customer to be only

mentally present. Unlike goods, which are produced, sold, and then consumed, services are first sold and then produced and consumed simultaneously because of inseparability. For this reason, service firms must design their operations to accommodate the customer's presence. This makes the service factory become another tangible clue that consumers consider when making service quality evaluations (Hoffman & Bateson, 1997).

**Involvement of Other Customers in the Production Process.** A third characteristic of inseparability is the presence of other customers during the service encounter. Since production and consumption occur at the same time, several customers often share a common service experience. This shared experience can be negative or positive.

**Special Challenges in Mass Production of Services.** The final problem presented by inseparability is how to successfully mass produce services. The problems pertaining to mass production are twofold. First, since the service provider is directly linked to the service being produced, an individual service provider can produce only a limited supply. The second problem relates to the consumer's involvement in the production process. Due to the inseparability characteristic inherent in the production of services, the problem for service firm becomes how to sell to a geographically widespread target market.

Heterogeneity is one of the most frequently stressed differences between goods and services. This is the lack of ability to control service quality before it reaches the consumer. Service encounters occur in realtime, and consumers are already involved in the factory, so if something goes wrong during the service process, it is too late to

institute quality-control measures before the service reaches the customer. Heterogeneity makes it impossible for a service operation to achieve 100% perfect quality on an ongoing basis. Another challenge presented by heterogeneity is that not only does the consistency of service vary from firm to firm and among personnel within a single firm, but it also varies when interacting with the same service provider on a daily basis (Hoffman & Bateson, 1997).

Heterogeneity also causes problems for marketers due to the fact that service standardization and quality control are difficult to achieve. As previously mentioned, the service provider must be present to provide the service. As an individual, each employee has a different personality and interacts with customers differently. Employees also may act differently from one day to the next due to mood changes and other factors. The marketing problems created by heterogeneity are especially frustrating. A firm may possess the best product in the world but if an employee is having a “bad day”, a customer’s perceptions may be adversely affected, and the firm may never have another chance to serve that customer.

The final characteristic distinguishing goods from services is perishability. Perishability refers to the trait that services cannot be inventoried. Services cannot be stored and sold at a later date. Services that are not sold when they become available cease to exist. This inability to inventory creates the following profound difficulties for marketing services (Hoffman & Bateson, 1997).

**Higher Demand than Maximum Available Supply.** Due to the inability of carrying an inventory, matching demand and supply within most services firms is a major challenge. When consumer demand outpaces what the firm can supply, the result is long

waiting periods and in many cases, unhappy customers. Business may be lost to competitors as waiting times become too excessive for consumers to bear.

**Higher Demand than Optimal Supply Level.** In many cases, the consequences associated with demand exceeding optimal supply may be worse than when demand exceeds maximum available capacity. By accepting the customer's business, the firm inherently promises to provide the same level of service that it always provides, regardless of the quantity demanded. When the demand exceeds optimal levels, the service provided is generally at inferior levels. Because of this, customer expectations are not met therefore, customer dissatisfaction and negative work-of-mouth publicity results. This creates the temptation to accept the additional business (Hoffman & Bateson, 1997).

**Lower Demand than Optimal Supply Level.** During times when demand is below optimal capacity, resources are underutilized. When this occurs, operating costs are needlessly increased.

**Demand and Supply at Optimal Levels.** The optimal scenario is to have demand match supply. Since services cannot be stored, a buffer to ease excess demand cannot be developed and service providers cannot produce a limitless supply. Service demand and supply rarely balance. At times, customers do have to experience lengthy waits, and service providers are sometimes faced with no one to serve (Hoffman & Bateson, 1997).

### Service Quality

As competition becomes more intense, the concern for service quality grows (Asubonteng, McCleary & Swan, 1996). Service quality is crucial to a service because it

is linked to customer satisfaction and customer loyalty. Service quality theory predicts that customers will judge quality as low if performance does not meet their expectations. For that reason, customers' expectations serve as the foundation on which service quality will be evaluated by the customers. As service quality increases, satisfaction with the service and intentions to reuse the service increases (Oliver, 1980).

Parasuraman, Zeithaml and Berry (1985) suggested three underlying themes for service quality:

1. service quality is more difficult for the consumer to evaluate than goods quality,
2. service quality perceptions result from a comparison of consumer expectations with actual service performance, and
3. quality evaluations are not make solely on the outcome of the service; they also involve evaluations of the process of service delivery.

Efforts to define and measure the quality of products have proved more successful than the definition and measurement of service quality. The characteristics of services have made the determination of what constitutes quality more difficult and therefore its measurement less than comprehensive (Mudie & Cottam, 1999).

Today, quality has become a major research interest (Bebko, 1993). Quality has been linked to factors such as customer satisfaction (Peyrot, Cooper & Schnapf, 1993), return behavior (John, 1992), recommendations to others (Headley & Miller, 1993), choice behavior (Richard & Allaway, 1993) and interaction with employees (John, 1991).

Service quality is important to marketers because a customer's evaluation of service quality and resulting level of satisfaction is thought to determine the likelihood of repurchase and ultimately affect bottom-line measures of business success (Iacobucci, Grayson, & Ostrom, 1994). If service quality is to become the foundation of marketing strategy, the marketer must have the means to measure it (Asubonteng et al., 1996).



## SERVQUAL

The most widely used and tested measure of service quality is SERVQUAL. The development of SERVQUAL began in 1985 when A. Parasuraman, Leonard Berry and Valerie Zeithaml jointly published, "A Conceptual Model of Service Quality and Its Implications for Future Research." In this paper, five service quality gaps were identified (Parasuraman et al., 1985):

- Gap 1: Difference between consumer expectations and management perceptions of consumer expectations.
- Gap 2: Difference between management perceptions of consumer expectations and service quality specifications.
- Gap 3: Difference between service quality specifications and the service actually delivered.
- Gap 4: Difference between service delivery and what is communicated about the service to consumers.
- Gap 5: Difference between consumer expectations and perceptions.

This article sparked the group's interest in Gap 5 and in 1988, they published their approach for defining and measuring service quality, SERVQUAL (Parasuraman et al., 1988). This article produced the famous equation:  $Quality = Performance - Expectations$  ( $Q=P-E$ ). SERVQUAL was designed to measure both perceived performance (P) and customer expectations (E). Using information from focus group interviews, Parasuramen et al (1988) identified basic dimensions that reflect service attributes that consumers use when evaluating the quality of a service. The five dimensions consumers use to evaluate service quality in order of importance are: (1) reliability, (2) responsiveness, (3) assurance (4) empathy and (5) tangibles (Bebko, 2000). The scale currently contains 21 perception items that are distributed throughout the five dimensions (Zeithaml & Bitner, 1996, pg. 152-153, Hoffman & Bateson, 1997).

Reliability reflects the consistency and dependability of a firm's performance. Reliability is the ability to perform the promised service dependably and accurately. Does the firm provide the same level of service time after time or does quality vary with each encounter? Does the firm keep its promises and perform the service correctly the first time? Of the five SERVQUAL dimensions, consumers perceive the reliability dimension to be the most important dimension of service quality. Reliability means that the company delivers on its promises about delivery, service provision, problem resolution and pricing. Failure to provide reliable service generally translates into an unsuccessful firm. Questions used to assess reliability gap are as follows:

#### RELIABILITY EXPECTATIONS:

- E1. When excellent companies promise to do something by a certain time, they will do so.
- E2. When customers have a problem, excellent companies will show a sincere interest in solving it.
- E3. Excellent companies will perform the service right the first time.
- E4. Excellent companies will provide their services at the time they promise to do so.
- E5. Employees of excellent companies will tell customers exactly when services will be performed.

#### RELIABILITY PERCEPTIONS:

- P1. When XYZ Company promises to do something by a certain time, it does so.
- P2. When you have a problem, XYZ Company shows a sincere interest in solving it.
- P3. XYZ Company performs the service right the first time.
- P4. XYZ Company provides its services at the time it promises to do so.
- P5. XYZ Company keeps customers informed about when services will be performed.

Responsiveness reflects a service firm's commitment to provide its services in a timely manner. Responsiveness concerns the willingness of employees to help customers and provide prompt service. This dimension emphasized attentiveness and promptness in

dealing with customer requests, questions, complaints and problems. The SERVQUAL expectation and perception items that address the responsiveness gap are as follows:

#### RESPONSIVENESS EXPECTATIONS:

- E6. Employees of excellent companies will give prompt service to customers.
- E7. Employees of excellent companies will always be willing to help customers.
- E8. Employees of excellent companies will never be too busy to respond to customer requests.

#### RESPONSIVENESS PERCEPTIONS:

- P6. Employees in XYZ Company give you prompt service.
- P7. Employees in XYZ Company are always willing to help you.
- P8. Employees in XYZ Company are never too busy to respond to your request.

SERVQUAL's assurance dimension addresses the competence of the firm, the courtesy it extends its customers, and the security of its operations. Competence pertains to the firm's knowledge and skill in performing its service. Courtesy refers to how the firm's personnel interact with the customer and the customer's possessions. Security reflects a customer's feeling that he or she is free from danger, risk, and doubt.

Assurance is defined as employees' knowledge and courtesy and the ability of the firm and its employees to inspire trust and confidence. Assurance is important for services that the customer perceives as involving high risk and/or about which they feel uncertain about their ability to evaluate outcomes. The SERVQUAL items used to address the assurance gap are as follows:

#### ASSURANCE EXPECTATIONS:

- E9. The behavior of employees of excellent companies will instill confidence in customers.
- E10. Customers of excellent companies will feel safe in their transactions.
- E11. Employees of excellent companies will be consistently courteous with customers.

- E12. Employees of excellent companies will have the knowledge to answer customer questions.

#### ASSURANCE PERCEPTIONS:

- P9. The behavior of employees in XYZ Company instills confidence in you.
- P10. You feel safe in your transactions with XYZ Company.
- P11. Employees in XYZ Company are consistently courteous with you.
- P12. Employees in XYZ Company have the knowledge to answer your questions.

Empathy is the ability to experience another's feelings as one's own. Empathy is treating the customers as individuals. It is the caring, individualized attention the company provides its customers. Empathetic firms have not lost touch of what it is like to be a customer of their own firm. They understand their customer's needs and make their services accessible to their customers. The SERVQUAL empathy dimension addresses the empathy gap as follows:

#### EMPATHY EXPECTATIONS:

- E13. Excellent companies will give customers individual attention.
- E14. Excellent companies will have employees who give customers personal attention.
- E15. Excellent companies will have the customer's best interest at heart.
- E16. The employees of excellent companies will understand the specific needs of their customers.

#### EMPATHY PERCEPTIONS:

- E13. XYZ Company gives you individual attention.
- E14. XYZ Company has employees who give you individual attention.
- E15. XYZ Company has your best interests at heart.
- E16. Employees of XYZ Company understand your specific needs.

Due to the absence of physical product, consumers often rely on the tangible evidence that surrounds the service in forming evaluations. The tangibles dimension compares consumer expectations and the firm's performance regarding the firm's ability to manage its tangibles. Tangibles is defined as the appearance of physical facilities,

equipment, personnel, and communication materials. These provide physical representations or images of the service that customers use to evaluate quality.

Questions that pertain to the tangibles dimension are as follows:

#### TANGIBLES EXPECTATIONS:

- E17. Excellent companies will have modern-looking equipment.
- E18. The physical facilities at excellent companies will be visually appealing.
- E19. Employees of excellent companies will be neat in appearance.
- E20. Materials associated with the service (such as pamphlets or statement) will be visually appealing in an excellent company.
- E21. Excellent companies will have operating hours convenient to all their customers.

#### TANGIBLES PERCEPTIONS:

- P17. XYZ Company has modern-looking equipment.
- P18. XYZ Company's physical facilities are visually appealing.
- P19. XYZ Company's employees appear neat.
- P20. Materials associated with the service (such as pamphlets or statements) are visually appealing at XYZ Company.
- P21. XYZ Company has convenient business hours.

SERVQUAL was developed based on information from focus group interviews.

Consumers in the focus groups discussed service quality in terms of the extent to which service performance on the dimensions matched the level of performance that consumers thought a service should provide. A service was considered as a high quality service if it performed at a level that matched the level that consumer felt should be provided. The level of performance that a high quality service should provide was termed consumer expectations. If performance was below expectations, consumers judged quality to be low (Asubonteng *et al*, 1996).

Over the years, SERVQUAL has undergone numerous improvements and revisions. Some sources list 22 service quality expectations and expectation E21 is sometimes considered to be an empathy dimension. SERVQUAL has been adapted to

measure service quality in a variety of settings such as: dental school patient clinics, business school placement center, tire store, acute care hospital, large retail chains, pest control, dry cleaning and fast food restaurants (Asubonteng *et al*, 1996).

### Customer Satisfaction/Customer Loyalty

Customer satisfaction is one of the most studied areas in marketing. Without the customer, the service firm would cease to exist. Every service business needs to define and measure customer satisfaction. The following figures were gathered from the Technical Assistance Research Program (Glanz, 1994, pg. 6):

- The average business does not hear from 96% of its unhappy customers.
- For every complaint received, 26 customers actually have the same problem.
- The average person with a problem tells 9 or 10 people. Thirteen percent will tell more than 20.
- Customers who have their complaints satisfactorily resolved tell three to five people about the treatment they received. Therefore, it takes three to four happy customer experiences to make up for one negative one.
- Complainers are more likely to do business with you again than noncomplainers: 54-70% if resolved at all, and 95% if handled quickly.

Over the years, customers have become more difficult to please. They are more informed, their expectations have increased, and they are more particular about where they spend their dollar (Hoffman & Bateson, 1997). Simply satisfying customers is no longer enough. A satisfied customer is really a neutral customer. They are just as apt to leave your organization as they are to stay. Winning their loyalty is the key to becoming a service success (Glanz & International, 1994).

Customer satisfaction is doing what your customer expects or being adequate. Most organizations provide adequate service. They do exactly what they say they are going to do, no less and no more. Unfortunately, people don't talk about adequate

service. Instead, they tell anyone who will listen about really bad service or really delightful service. “Achieving customer satisfaction is just the price of admission. Building loyalty and committing to ‘customer value’ are the keys to sustainable growth” (Szablowski, 2000). These days, even if your clients are completely satisfied with your product or service, 40 percent of them will leave you and do business with your competition. Attracting new clients can cost nearly double the amount it takes to attract repeat business from your existing client base. In order to retain your clients and increase your sales, you must go beyond client satisfaction and develop a rapport with your customers. Only then will you achieve true client loyalty (Michaud, 2000, pg. 42-43).

The following are 5 rapport-building tips to go beyond customer satisfaction:

1. Establish a Common Ground.  
Clients relate to those people most like themselves. They want to feel a connection with you beyond being a client. Placing family photos, awards, diplomas/degrees and anything else of personal importance in your office will allow your client to find something that relates to their own life. When visiting with your client on the phone, establish rapport by finding out where they are from and special events in their lives.
2. Listen and Show Concern.  
Clients always want to talk about themselves, their situations and wants or needs. Give your client your full attention and make them feel important.
3. Use Humor  
Humor is one of the quickest ways to build rapport. A good joke or funny story eases tension and breaks down mental barriers. When you get people to laugh with you, you’ve formed an instant bond.
4. Keep a Positive Attitude  
When you are positive and upbeat, people naturally want to be around you and do business with you. When you look at any situation in a positive light, everything around you becomes positive as well.
5. Treat Clients Like Family  
Your clients want to know that you have their best interests at heart. When speaking with your clients, add emotion to your voice and give them your undivided attention.



When you go beyond client satisfaction and create true client loyalty, you develop long-term relationships that lead to increased profits. Customer delight goes beyond satisfaction. It ensures that each contact with your customers reinforces their belief that your organization is truly special, one of a kind, and the best at what you do. Customer delight means knowing who your customers are, what they value, and how you can offer it before they even think to ask. Focusing daily attention on customer delight will ensure that you stand out in the crowd and become the organization of choice for your key audiences (Paul, 2000).

In this decade, successful organizations must also concentrate on customer value and on understanding the three distinct categories of value (MacStravic, 1999):

1. Search value: what can be determined before the service.
2. Experience value: what occurs during the actual service encounter.
3. Credence value: the long-term reliability of the experience.

Being able to truly understand customer values requires a new business order in which customers drive the business decisions. This new business order requires a relationship with customers based on trust, loyalty, shared expectation, and collaboration. Unlike the traditional model ( Figure 1, Szablowski, 2000, pg. 13), this new order begins with the customer instead of ending with the customer (Figure 2, Szablowski, 2000, pg. 14). The new order focuses on tailoring business decisions to meet customer expectations. This process involves:

- Identifying what customers and prospects value the most
- Grouping customers by their similar or overlapping needs and expectations
- Developing services or service nuances tailored to each group
- Communicating by expectation groups
- Seeking feedback and making refinements continuously (Figure 2, The new order)





Figure 1. The traditional way.

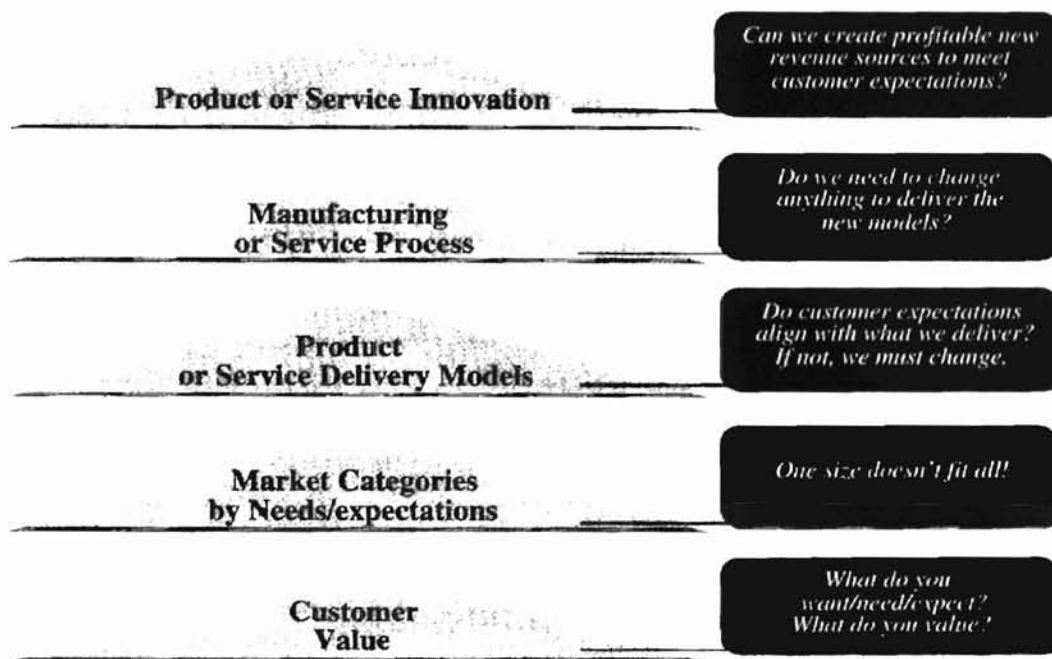


Figure 2. The new order.

Szablowski PA. Customer value and business success in the 21<sup>st</sup> century. *Managed Care Quarterly*. Spring 2000; 8(2): 13-14.

Every unhappy customer tells his story to 10 or 11 people, while a customer who has experienced good service tells only three people. Customers rarely complain directly to the source of the product or service. Instead, they take their business elsewhere. Managers will hear only one complaint for every 20 to 50 occurrences of a similar problem in the marketplace. Only 4 percent to 10 percent of dissatisfied customers even give you the chance to make things right; most would rather switch than fight. Findings suggest that compassionate care is the most important factor influencing patient intentions to recommend or return, regardless of care setting. Companies can boost profits by almost 100% by retaining just 5% more of their customers (Reicheld & Sasser, 1990). Companies that excel in creating loyal customers can command prices 4 percent to 7 percent higher than competitors and generate up the three times more profit (Szablowski, 2000).

### Practice Groups

A dietetic practice group (DPG) is a professional interest group of the American Dietetic Association (ADA) members who wish to “network” within their area of interest and /or practice. Any ADA member may join a DPG. Membership in a DPG is voluntary. Currently, there are 29 DPGs available for members. No limit is set on the number of DPGs a member can join. DPGs offer the following benefits to its members: provide opportunities for members to increase knowledge in specific areas of dietetic practice; develop and sponsor workshops and seminars for members to obtain continuing professional education credit; provide awards, stipends, scholarships, and grants to members; develop legislative and public policy materials for the Association; and

contribute technical expertise to the Association. Other benefits are: support the alliance program by collaborative projects with other associations; establish activities that market the profession in general and practice areas; provide guidelines for practice and quality management materials; and are active in ADA's initiatives, projects, and activities (ADA: DPG General Information 1996-1999). Two DPGs will be the focus of this study.

Dietetic Practice Group #32, Dietitians in Business and Communications (DBC), is composed of members who are employed by, seeking employment in, or self-employed in profit making organizations in the food and nutrition industry. DBCs members are dietetics professionals on the frontlines of nutrition and public health in nontraditional settings such as media, industry, sales, marketing, and entrepreneurs. DBCs membership total for 1999 was 1,316 members. With ADA's continued focus on non-traditional settings for RDs and the expanding opportunity for employment in the business arena, the DBC practice group is considered to be a worthwhile investment. Having members in a variety of areas such as media, sales and new product development, DBC has a strong networking backbone. Benefits of DBC membership include: "DBC Dimensions" a quarterly newsletter that contains the current trends in the food, nutrition, communications, sales, technology, and marketing industries while offering helpful member business advice and information on current events; national directory of DBC members, a networking tool; Mentor Network, a program to link veteran DBC experts with those just getting started; national, regional, and local meetings available to earn continuing education units (CEUs) and gain knowledge in specific areas; committee participation to provide leadership opportunities and; member recognition through awards and honors (ADA: Dietitians in Business and Communications, 1999).

Dietetic Practice Group #30, Nutrition Entrepreneurs (NE), is made up of members who own counseling practices, write books, design nutrition products, or work in the media. NE's membership total in 1999 was 2,300 members. NE provides its members who are employed in or seeking non-traditional careers in nutrition a source for ideas to help with the development of their businesses. NE's members provide a creative network of colleagues with expertise in business practice. NE's mission is to help members achieve their professional and financial potential by providing the tools to build and maintain a successful nutrition-related business. Benefits received by NE members include: Mentor Program; membership directory for networking; marketing opportunities; scholarships, awards, and stipends; and publications (ADA: Nutrition Entrepreneurs, 1999).

#### Career Opportunities and Environment for Non-Traditional Dietitians

Interest in nontraditional dietetics jobs is increasing. Practitioners and students are drawn to the excitement and challenge of new jobs with less routine and structure. In a survey of dietetics students by Helm (1991), 58% of the dietetic students said "yes" and 23% said "maybe" they would eventually like to pursue nontraditional dietetics careers.

One career opportunity for the non-traditional dietitian is the consultant in private practice. In the 1995 member survey by The American Dietetic Association, 12% of the RDs surveyed were employed in consultation and business practice. Opportunities for dietitians in private practice are growing rapidly as businesses and the health care industry undergo changes. The practice setting for the consultant in private practice is usually located outside an organization but may be as diverse as the practitioner's

interests and expertise as well as the market demands. Examples of settings include: private office, physician office, home health care, schools, fitness centers, nursing homes, media and communications, grocery stores, business and industry, food companies, resorts, private specialty clinics and rehabilitation centers. Roles of consultants in private practice include: assessment of nutritional status, menu evaluation and planning, one-on-one counseling, group education, consulting to corporations, assisting in marketing nutrition in restaurants, supermarket tours, rehabilitation and nutrition care planning (Alexander-Israel & Roman-Shriver, 1998).

Another career choice for the non-traditional dietitian is as a consultant in business practice. “Only the imagination and desire of the dietitian limit the opportunities for experienced dietitians to be employed in business practice” (Norton, 1998, pg. 234). Employment areas include: long-term care facilities, retirement centers, health agencies, programs for the mentally disabled, rehabilitation centers, psychiatric facilities, alcohol and substance abuse centers, food and equipment vendors, and health professional education programs. Personal characteristics of dietitians entering a career in business consulting practice are risk takers, energetic, and versatile. They like to take on new challenges and they have a wide range of interests. Activities performed by a business consultant include: evaluating staffing patterns, establishing an inventory and cost control system, planning a new production or service system, and recommending equipment purchases (Norton, 1998).

A career in business and industry has long been considered a nontraditional choice for dietitians. Dietitians in Business and Communications practice group identifies its members as presidents, vice presidents, CEOs, food service directors, food stylists,

researchers, consultants, sales managers, marketing managers, restaurateurs, test kitchen managers and software specialists (ADA: Dietitians in Business and Communications, 1999). This career choice has many advantages as well as disadvantages. A few of the advantages include: fast pace, variety of projects and individuals, challenging work, team work, opportunities for creativity and visibility. Disadvantages of this career choice are: fast pace, stressful, long hours, red tape and paperwork, managing rather than doing, battles for project funding and company politics (Finn, 1998).

## CHAPTER III

### METHODOLOGY

The purpose of this study is to determine if non-traditional dietitians have appropriate marketing skills and to discover their attitudes towards service quality, professional development needs and preferred methods for continuing education. This chapter includes the research design; description of the population to be studied; data collection including instrumentation and procedure; and data analysis.

#### Research Design

A descriptive status survey in the form of a mailed questionnaire was used in this study. Descriptive research is designed to document conditions, attitudes, or characteristics of individuals or groups of individuals (Portney & Watkins, 2000). The study will focus on the relationships between existing variables and will not attempt to manipulate variables.

The dependent variables in this study are the service marketing scores, service quality scores, professional development needs, and methods for continuing education. The independent variables include the personal demographic variables (gender, age, race/ethnicity and highest degree earned).

## Population and Sample

The population in this study is all current members of the American Dietetic Association (ADA). The sample is composed of dietitians who are members of the ADA Dietetic Practice Group (DPG): Dietitians in Business and Communications and Nutrition Entrepreneurs and work in the following employment setting: food manufacture/distributor/retailer; private practice, primarily individual client counseling; consultation, primarily to health care facilities; consultation, primarily to other organizations/industries/media; other for profit organization (includes food manufactures/distributors/retailers/agencies); and other nonprofit organizations. A random selection of members was performed by Aggressive List Management (ALM), a company contracted by ADA for label requests. The initial plan was to select 300 members from each of the two practice groups to participate in the study. The labels with the names and addresses of the randomly selected dietitians (N=600) were obtained from the ALM. ALM did not provide, however, the requested order of 300 labels from each group. Instead, ALM sent 248 labels from NE and 352 labels from DBC.

## Data Collection

### Development of Instrument

Part I, Service Marketing Skills, was formed based on the eight marketing P's found in the December 1999 issue of Pulp and Paper International (Alexander, Dull & Pegg, 1999), and other research references. This part of the questionnaire includes 20 questions pertaining to the eight marketing P's: product, price, place, partnering, people,



promotion, position and packaging and marketing strategy. Respondents were asked to rate their knowledge of each question based on a 3 point Likert scale (1=limited, 2=adequate, or 3=more than adequate). Responses were totaled to derive a knowledge score.

Part II, Attitudes Toward Service Quality, was developed from the SERVQUAL instrument (Zeithaml & Bitner, 1996). Part II consists of 21 perception items that are distributed throughout the five dimensions of service quality: tangibles, reliability, responsive, assurance, and empathy. Respondents ranked each item using a 5 point Likert scale (1=not sure, 2=not important, 3=somewhat important, 4=important or 5=very important). Responses were totaled to derive an attitude score.

Part III, Professional Development Needs, was adapted from Munion's study in 1992. Part III questions the dietitian on what skills they need and what method they would use to obtain these skills. The professional development needs score is based on a 4 point Likert scale (1=no need, 2=limited need, 3=moderate need, or 4=urgent need. The continuing education method is based on a 3 point Likert scale (1=would not use, 2=would use, or 3=strongly prefer).

Part IV, Demographic Information, includes the independent variables relevant to the study. Four of the question pertained to personal demographic information while 10 of the questions concerned institutional characteristics.

A cover letter accompanied the questionnaire to explain the study and how the participants were chosen. A copy of the cover letter and research instrument can be found in Appendix C.

## Procedures

Permission was obtained from the Oklahoma State University Institutional Review Board prior to circulation of the survey (Appendix A ). The letters and instrument were sent via OSU Central Mail Services. To validate the instrument, a survey draft was sent to an expert panel of 12 dietitians working in business and industry on July 12, 2000 to obtain their critique relevant to content validity, clarity of format and time spent completing the survey (Appendix B). Seven of the 12 surveys were returned. The suggestions and comments made are available in Appendix A. These suggestions were used to revise the survey. Surveys were color coded to differentiate between the two practice groups. The DBC group received purple surveys while ivory was used for NE. The cover letters and 600 surveys were mailed on August 9, 2000 (Appendix C). A reminder/thank you postcard was sent on August 23, 2000 (Appendix C). Twenty days were allowed for the cut-off return of the surveys.

## Data Analysis

Chi Square analysis were used to determine if there were associations between gender, age, degree, salary, output of organization, and practice group membership with the 20 marketing skills, 21 customer expectations, 11 professional development needs and 10 continuing education methods. Analysis of variance (ANOVA) and Duncan's Multiple Range Tests were used to determine if there were associations between the personal variables age, salary, output of organization and practice group with the 8 Ps of marketing and marketing strategy and the 5 dimensions of service quality. A t-test was

used to determine if there were associations between the personal variables gender and highest degree with the 8 Ps of marketing and marketing strategy and the 5 dimensions of service quality.

## CHAPTER IV

### RESULTS AND DISCUSSION

This study assessed non-traditional dietitian's knowledge of services marketing skills, attitudes toward service quality, professional development needs and preferred methods of continuing education. Data were obtained using the research instrument described in Chapter III. The questionnaires were mailed to two groups. The first group consisted of 248 randomly selected members from the Nutrition Entrepreneurs (NE) practice group of the American Dietetic Association. The response rate for NE was 42% (N=103). Of the 103 questionnaires returned, 6 were from dietitians no longer working in the field, retired or dietetic technicians registered, 1 was returned due to wrong address and 2 were late resulting in a usable response rate of 38% (N=94). The second group consisted of 352 randomly selected members from the Dietitians in Business and Communications (DBC) practice group. The response rate for DBC was 45% (N=159). Of the 159 returned questionnaires, 1 was from a non-practitioner and 4 were late resulting in a usable response rate of 44% (N=154). A total of 600 mailed surveys were sent to the combined groups with a total return rate of 44% (N=262) and a usable return rate of 41% (N=248). The questionnaires were not coded to determine which dietitians had responded. The researcher sent out a reminder/thank you postcard to all survey recipients to produce a better response rate.

## Characteristics of the Survey Participants

Participants were chosen for this study based on their membership in DBC and NE. Of the 248 respondents, 124 belong to DBC, 90 are members of NE, while 34 are members of both DBC and NE (Figure I). When comparing practice groups, 3 groups are compared: DBC, NE and both.

### Personal Demographic Characteristics

Figures II-V show personal demographic characteristics for the 248 respondents. Personal variables include: gender, age range, race/ethnicity and highest degree.

#### Gender

According to the 1997 Membership Database of the American Dietetic Association (ADA), RDs are predominantly women (97.6%) (Bryk & Soto, 1999). Of the 248 respondents, 225 (97%) are females and 8 (3.4%) are males. Among the 8 males, 5 belong to DBC while 3 are members of NE (Figure II). Fifteen respondents did not provide gender information.

#### Age

Seventy one percent (N=166) of the respondents are between the ages of 36-55. The distribution of respondents  $\leq 35$  years is similar between the DBC and NE groups (N=21 and N=18 respectively), whereas only 4 respondents  $\leq 35$  years are members of both groups (Figure III). Only one respondent is  $\leq 25$  years while 24 (10.3%) are  $\geq 56$

FIGURE I

PRACTICE GROUP MEMBERSHIP

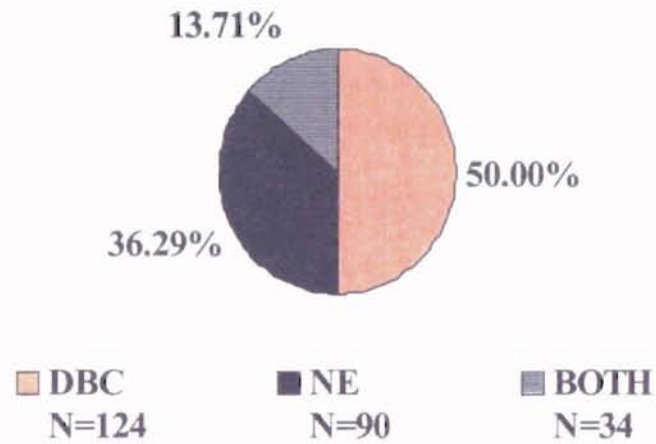


FIGURE II

DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS:  
GENDER

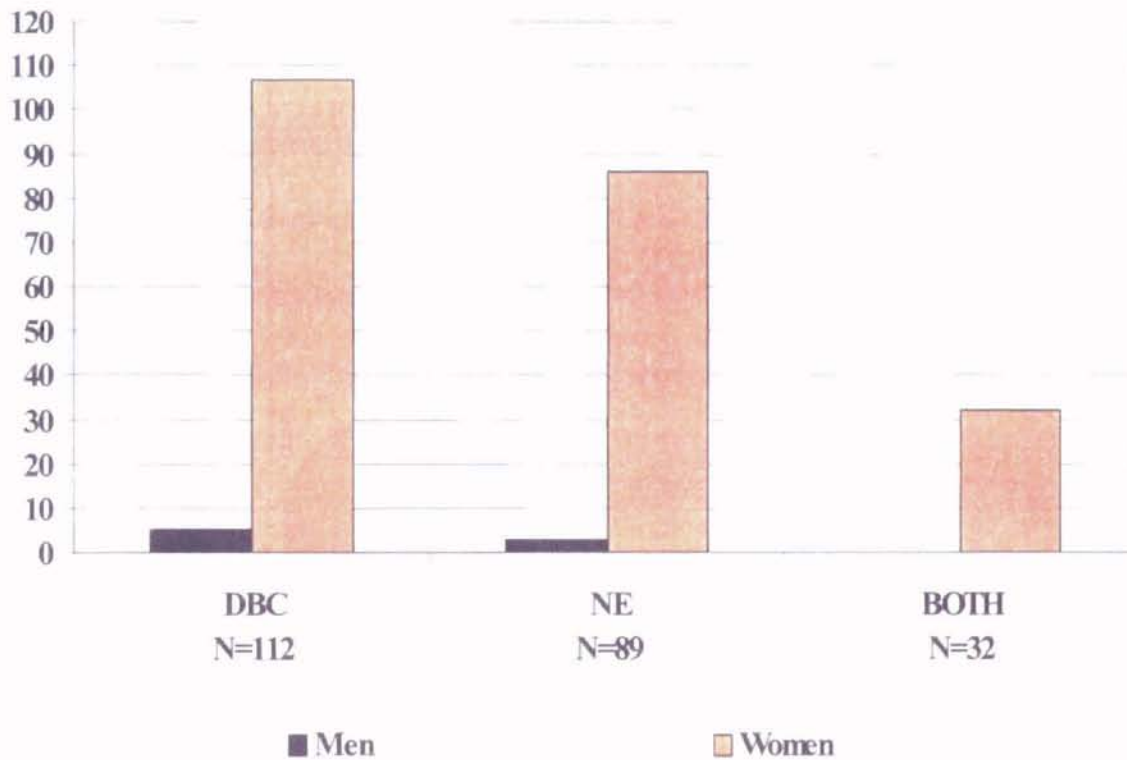
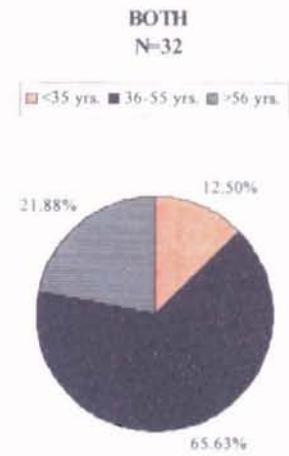
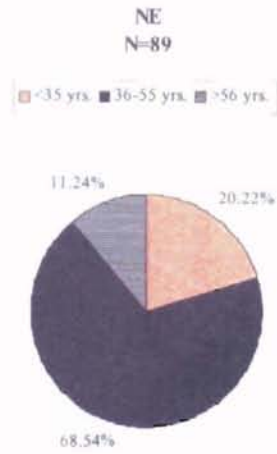
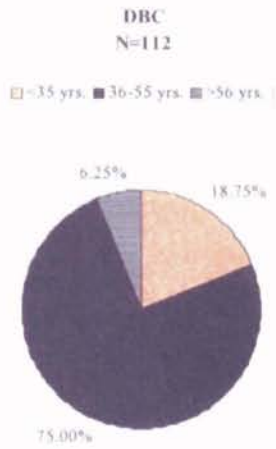


FIGURE III  
DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS: AGE



years. The 1997 ADA membership database reports that 76% of registered dietitians are between the ages of 26 and 50 years (Bryk & Soto, 1999).

### Race/Ethnicity

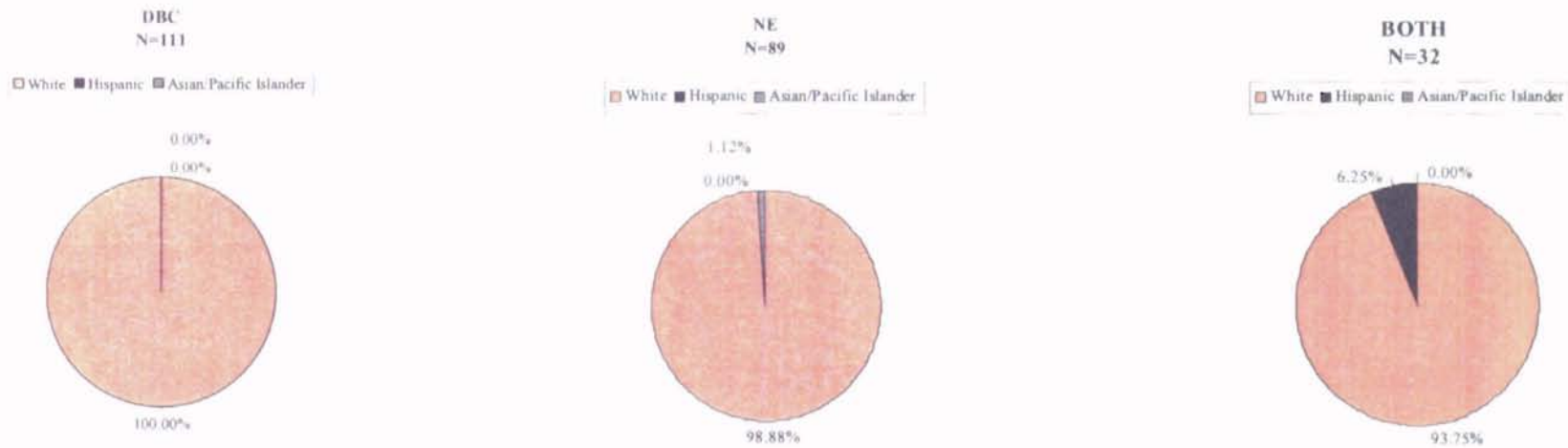
The majority (90.8%) of registered dietitians are white (Bryk & Soto, 1999). Among the respondents of this survey, 229 (98.7%) are white and only 3 (1.3%) are non-white. Of the 3 non-whites, two are Hispanics while one is an Asian/Pacific Islander. The two Hispanics are members of both DPGs and the Asian/Pacific Islander is a member of NE (Figure IV). The ADA minority RD membership data for 1999 indicates that only 2% of members are Hispanic while 5.4% are Asian/Pacific Islander (Mitchell, 2000). Sixteen respondents chose not to reveal their race.

### Highest Degree Received

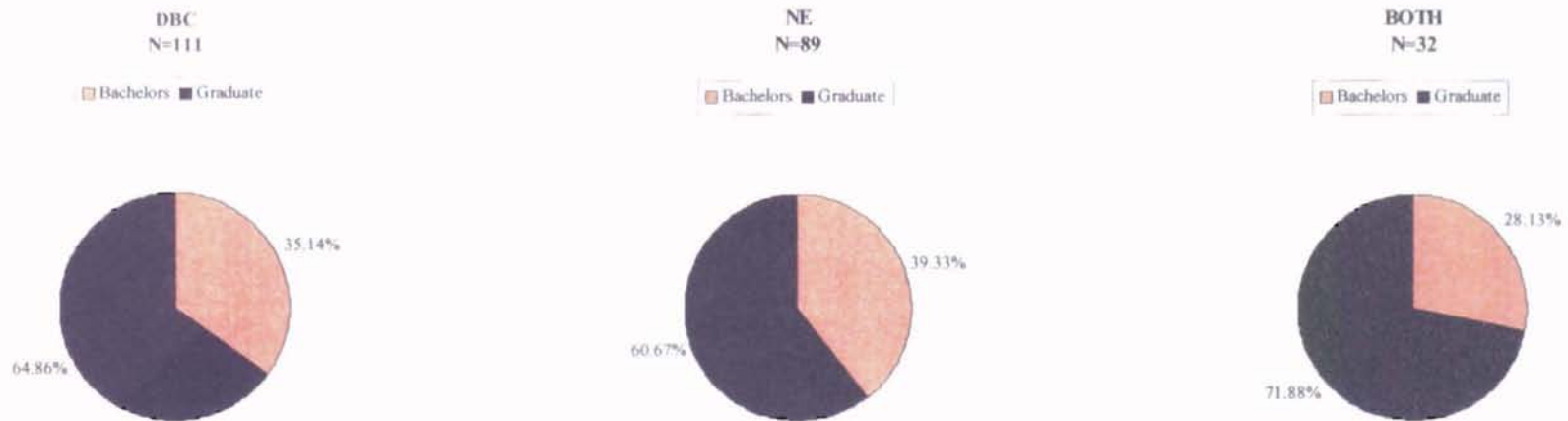
Although the minimum educational requirement for registration as a dietitian is a baccalaureate degree, slightly more than half of RDs report that they have or are working towards a graduate degree (Bryk & Soto, 1999). In this survey, 35.8% (N=83) have obtained a baccalaureate degree while 64.2% (N=149) have a graduate degree (M.S./MPH/M.B.A./Ph.D) (Figure V). Of the graduate degree recipients, only 4 have obtained a Ph.D.



**FIGURE IV**  
**DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS: RACE/ETHNICITY**



**FIGURE V**  
**DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS: HIGHEST DEGREE RECEIVED**



### Institutional Demographic Characteristics

Figures VI-XV show institutional demographic characteristics for the 248 respondents. Institutional variables include: years of experience as a Registered Dietitian, years of experience in current specialty area, employment status, type of organization, status of business/industry/agency, major output/end-product, job title, salary range, percent of job considered as marketing/service quality, and how marketing skills were obtained.

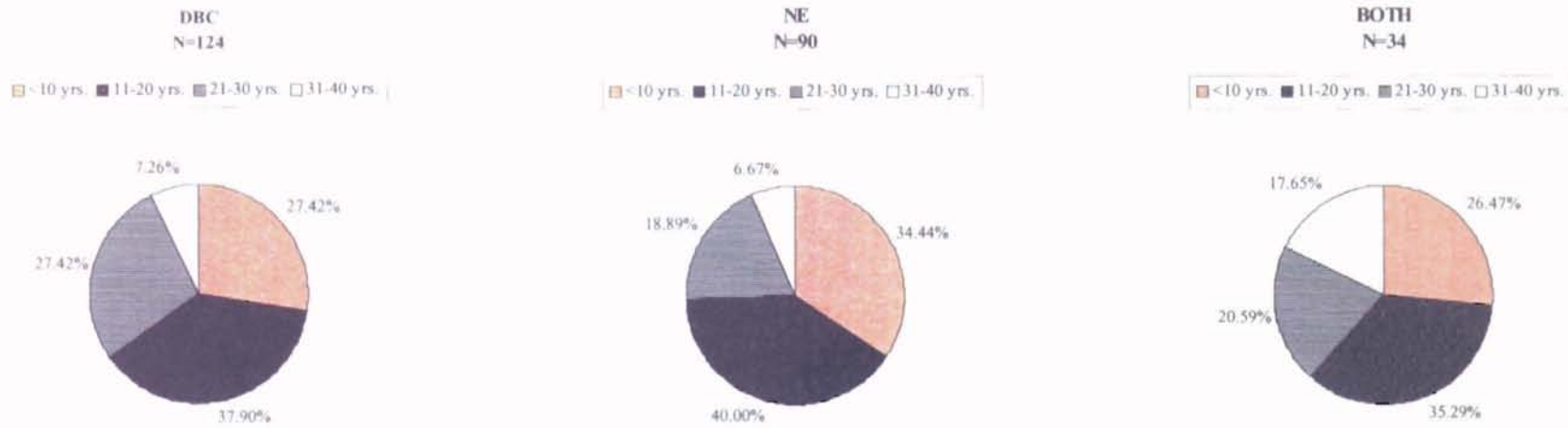
#### Years As Registered Dietitian

The predominant number (N=95) of dietitians in this study have between 11-20 years of experience as a registered dietitian followed by  $\leq 10$  years (N=74). Of the more experienced dietitians, 58 have 21-30 years of experience while 21 have practiced as a registered dietitian for  $\geq 31$  years (Figure VI).

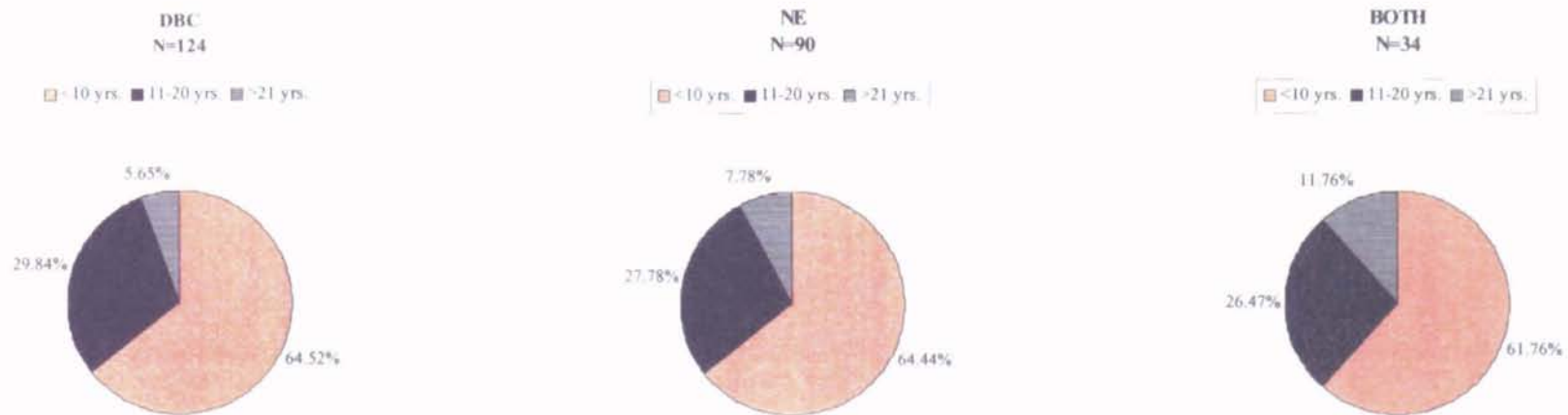
#### Years In Current Specialty Area

A little over 60% of the dietitians in all three groups have been working in their current specialty area for less than 10 years. Approximately 27-30% of the remaining dietitians in each of the three groups have been in their specialty area between 11-20 years. Only 7 dietitians in DBC and NE and 4 in both have worked in their current specialty area for more than 21 years (Figure VII).

**FIGURE VI**  
**DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS: YEARS AS REGISTERED DIETITIAN**



**FIGURE VII**  
**DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS: YEARS IN CURRENT SPECIALITY AREA**



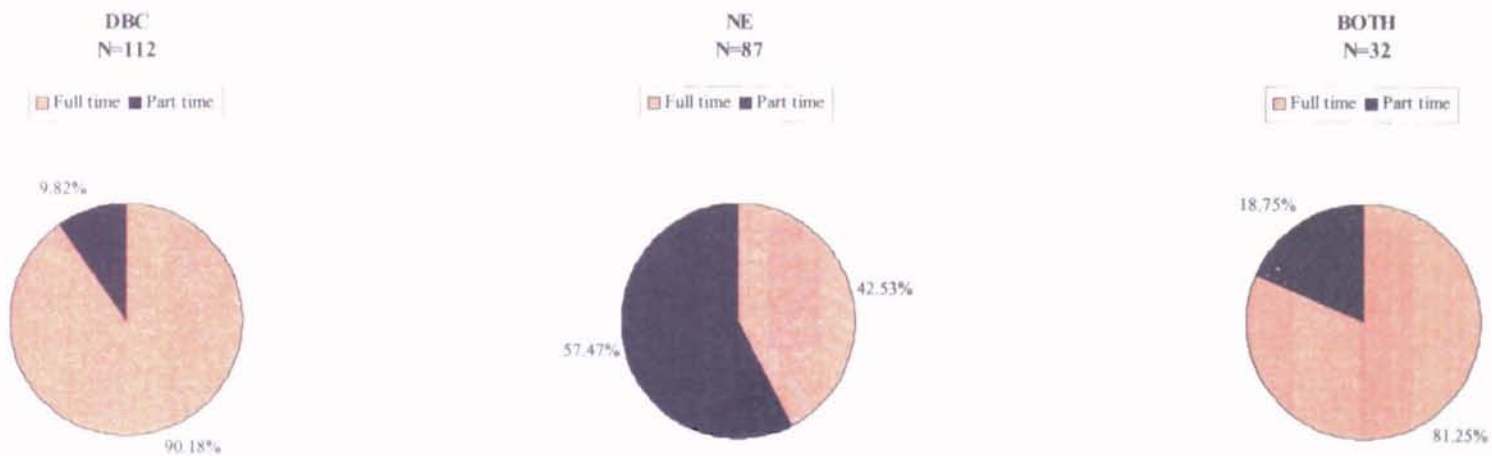
### Employment Status

Ninety percent of the dietitians belonging to DBC and 81% belonging to both groups have full-time employment status compared to only 43% of the NE group. Fifty seven percent (N=50) of the NE respondents report that they are currently working part-time which is 20 hours or less per week (Figure VIII).

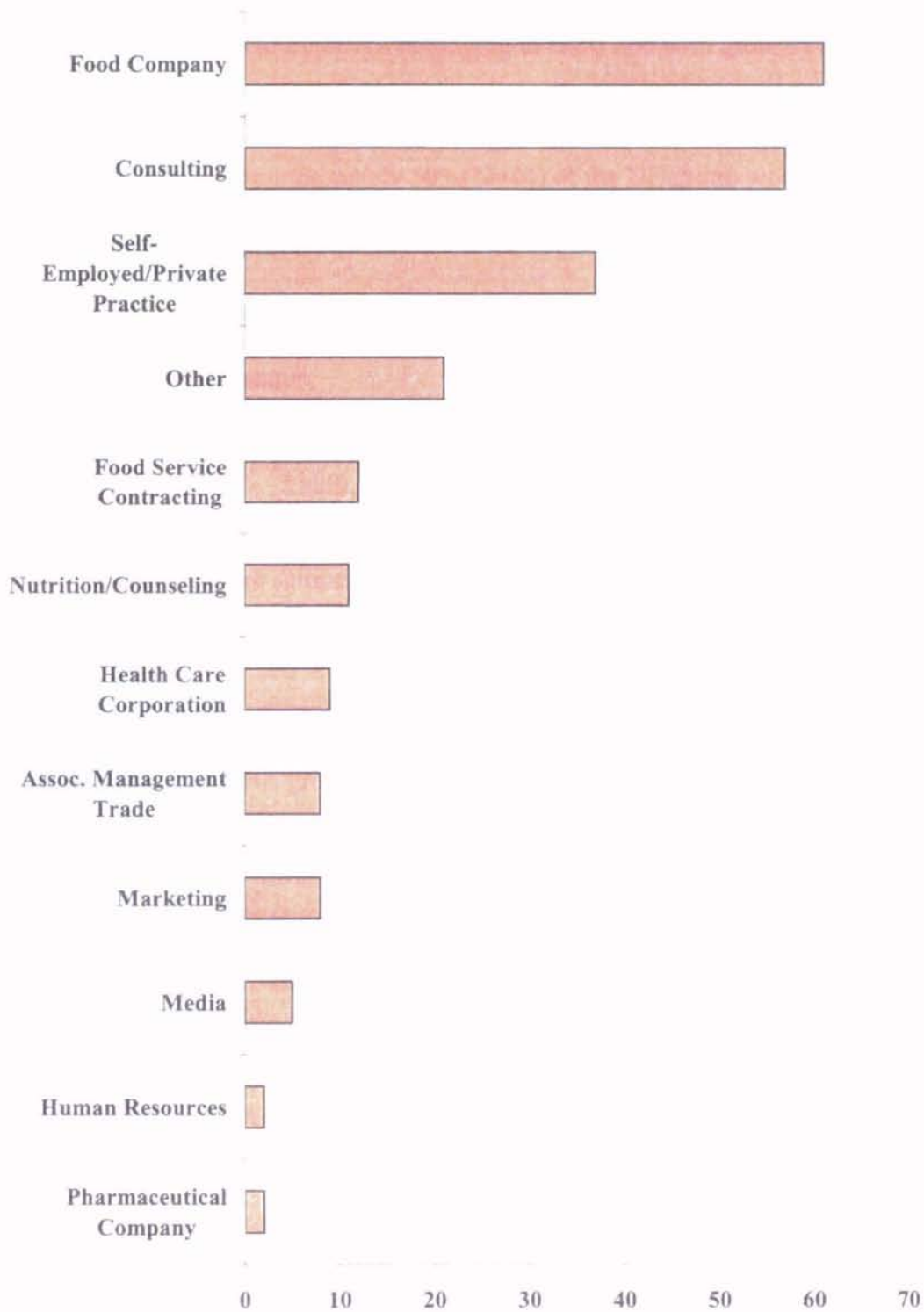
### Type of Organization

The current trend of employment for dietitians is in practice areas such as consulting, public health/community nutrition, business/industry/communication, entrepreneurship, web-based work, private practice and nutrition education/wellness/fitness (Caesar, 2000). In this study, the three most predominant types of organizations where non-traditional dietitians are employed are food companies (N=61), consulting companies (N=57), and self employed/private practice (N=37). Others work in food service contracting (N=12), nutrition counselor (N=11), health care corporation (N=9), association management (N=8) and marketing (N=8). Nine percent (N=21) of the respondents work for other organizations such as: non-profit, fortune 500, software sales, GPO, medical billing, public relations and contract research and development (Figure IX).

**FIGURE VIII**  
**DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS: EMPLOYMENT STATUS**



**FIGURE IX**  
**Demographic Characteristics of Survey Respondents: Type of Organization**



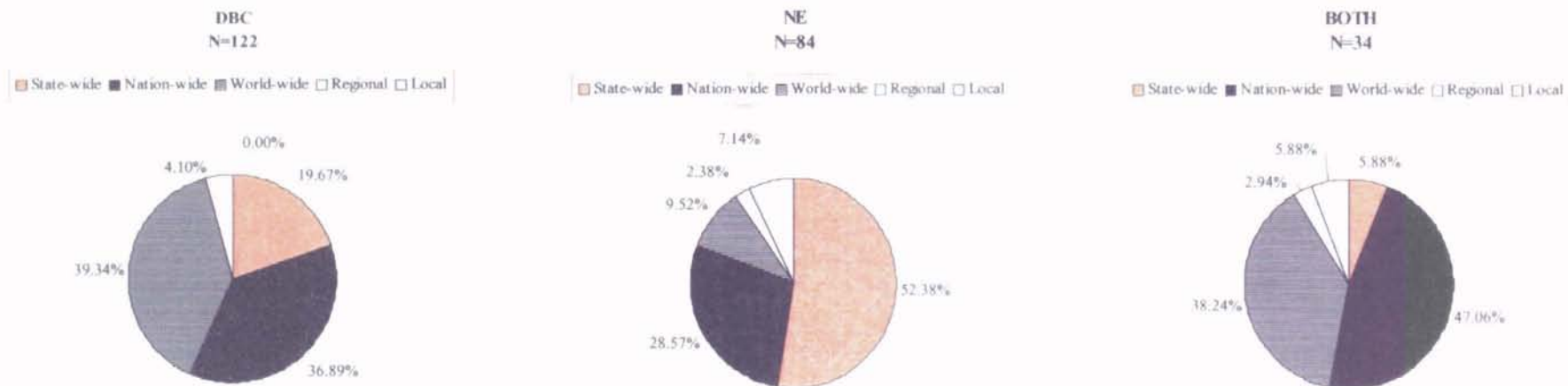
### Status of Business/Industry/Agency

The majority of dietitians belonging to DBC and both groups (76% and 85% respectively) are employed by or run organizations that operate at nation-and world-wide levels. In contrast, approximately 50%(N=44) of the NE group work at state-wide levels with only 32% working for businesses at the state-and nation-wide levels (Figure X). Eight of the respondents reported their organization's status as regional, while another 8 also indicated local status.

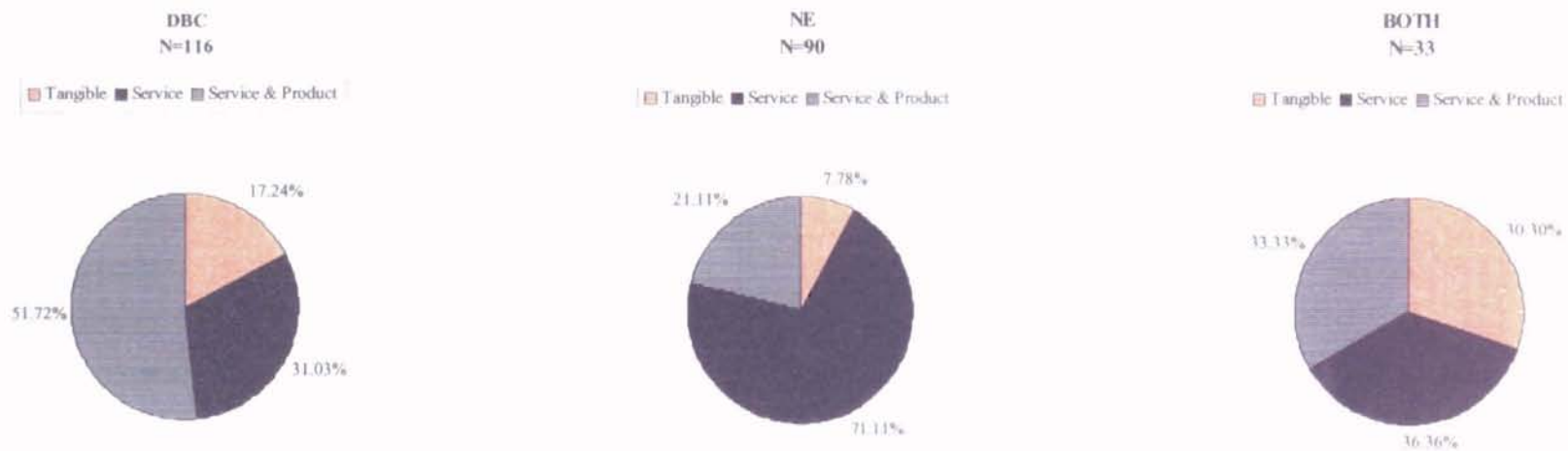
### Major Output/End-Product of Organization

Some RDs are selling a product while the majority are delivering an intangible service (Helm, 1991). Of all of the respondents, 37 are selling a product, 112 are delivering a service while 90 are distributing a service-product bundle. The majority of the dietitians in the NE group (71%) are delivering a service whereas 21% have a service-product bundle. In contrast, the DBC group, 52% (N=60) of the dietitians are working for organizations whose major output is a service-product bundle and 31% (N=36) are delivering a service. The output distribution for dietitians belonging to both groups is similar with 30% delivering a tangible, 33% a service-product bundle and 36% a service (Figure XI).

**FIGURE X**  
**DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS: STATUS OF BUSINESS/INDUSTRY**



**FIGURE XI**  
**DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS: MAJOR OUTPUT/END-PRODUCT**





### Job Title

Two hundred and thirty one of the respondents indicated a job title. Nineteen percent were in upper administration: 9 owners, 21 presidents and 13 vice presidents of corporations. Thirty eight (16%) of the 231 dietitians are consultants in a wide variety of settings such as nutrition, technical support, marketing communications and food safety/regulatory affairs. Fifteen percent (N=35) of the respondents are managers in health care, group marketing, nutrition, sales/national accounts, client relations, and food safety. Thirty one (13%) of the survey respondents direct program development, special projects, product information, sales and marketing, human resources and food and nutrition programs. Other commonly held job titles by non-traditional dietitians include: RD/nutritionist (N=31), and a few (N=19) are specialists in marketing, equipment, foodservice and culinary systems (Figure XII). Thirty-three (14.2%) of the respondents have job titles such as national accounts trainee, sales representative, account supervisor, executive market leader, research scientist, school and health care marketing, personal trainer, chef, and educator.

### Salary Range

The estimated median for dietitians working in consultation and business in 1997 was \$46,040, the highest median among the 6 practice areas (Byrk and Soto, 1997). In this study, 51% of dietitians earn  $\leq$ \$55,000. Of the 41% (N= 101) averaging between \$55,001 and \$100,000, only 18 are making over \$85,000. For those dietitians (N=20) with a salary range over \$100,001, 8 reported a salary range  $\geq$ \$130,001 (Figure XIII ).

**FIGURE XII**  
**Demographic Characteristics of Survey Respondents: Job Title**

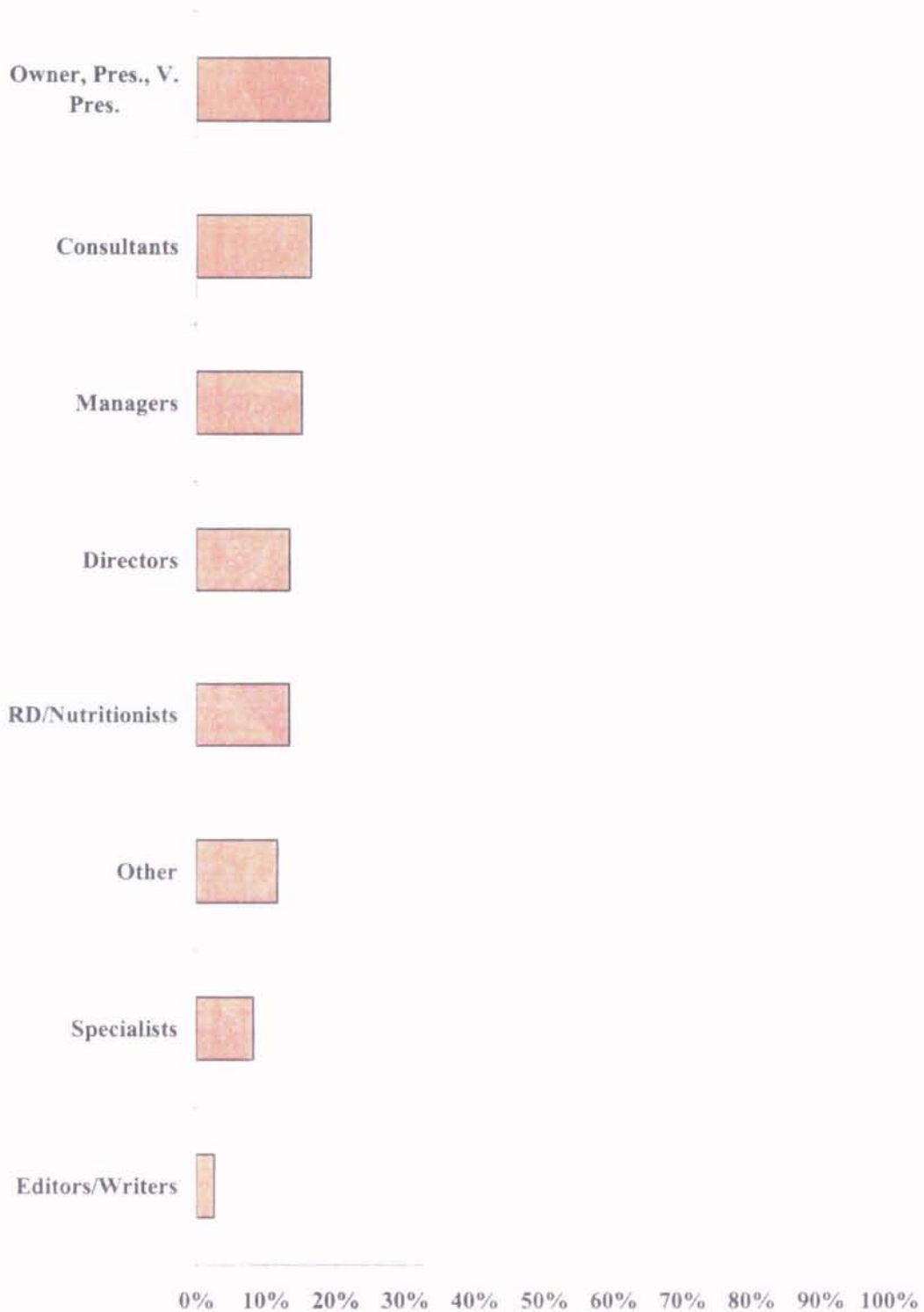
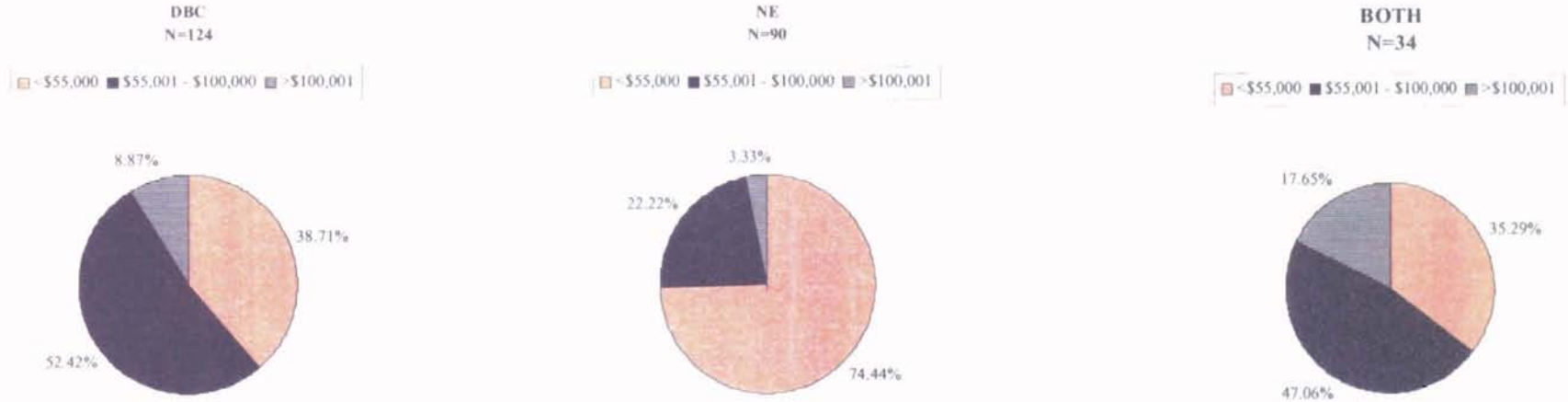


FIGURE XIII  
DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS: SALARY RANGE



According to Bryk and Soto, the increase in the income levels of dietetics professionals demonstrate the value of food and nutrition services in the marketplace.

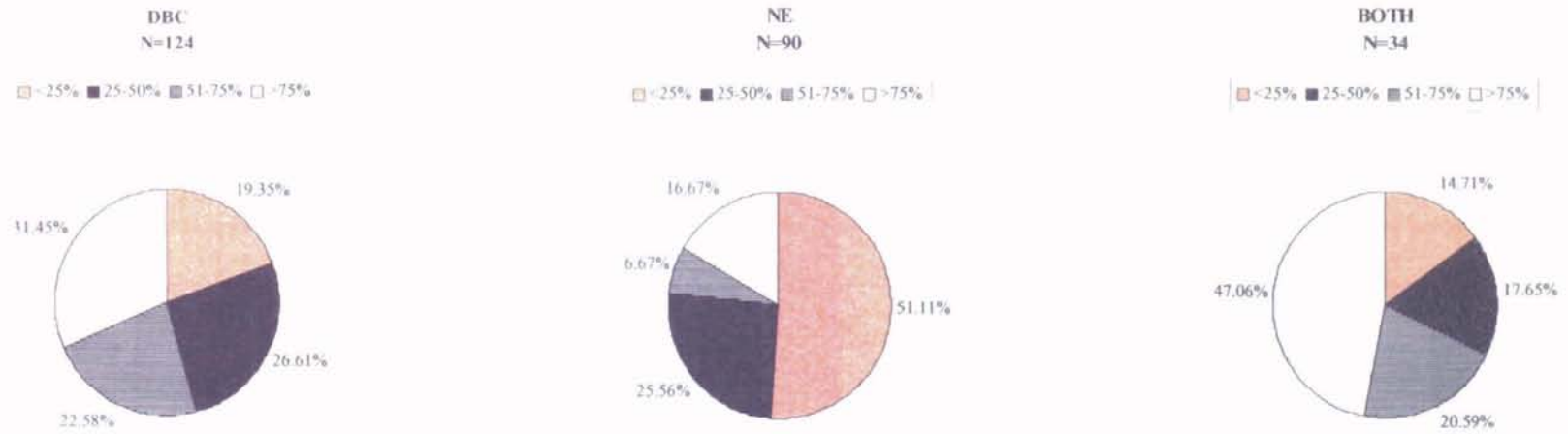
#### Percent of Job as Marketing/Service Quality

One hundred and three dietitians (41%) report that 25-75% of their jobs pertain to marketing/service quality. Thirty percent (N=75) of the respondents report that they spend  $\leq 25\%$  of their job performing marketing/service quality functions. Of these 75 dietitians, 46 belong to the NE group. Of the 70 dietitians indicating that they spend  $\geq 76\%$  performing marketing/service quality functions, 39 belong to the DBC group (Figure XIV).

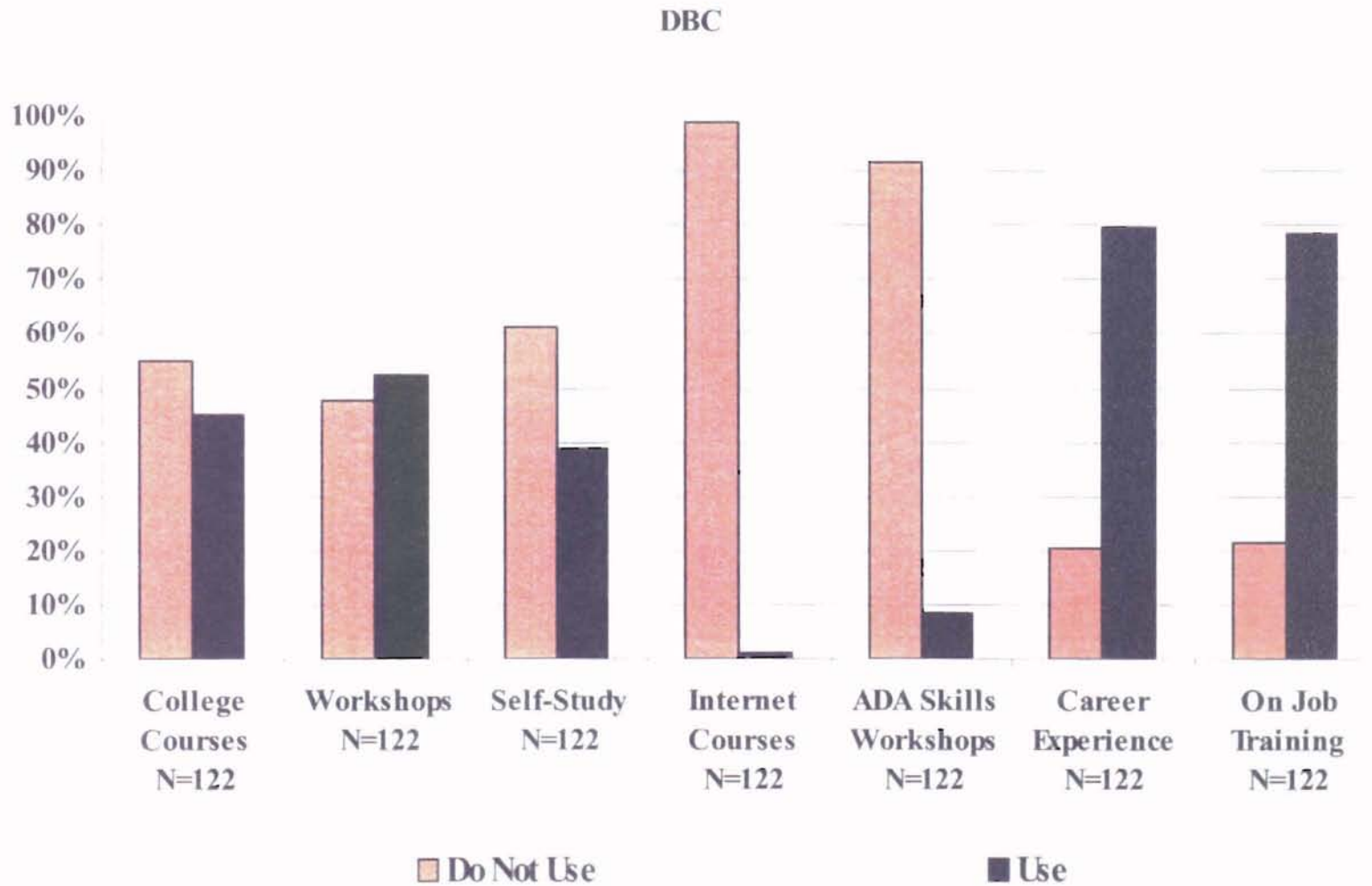
#### How Marketing Skills Were Obtained

Of the 7 methods listed in the questionnaire for obtaining marketing skills, career experience and on-the-job training were the most popular. One hundred eight six (75%) of dietitians reported that their marketing skills were obtained by career experience, while 53 (63%) also indicated that marketing skills were developed from on-the-job training. Internet and ADA Skills Workshops were used the least in obtaining marketing skills. Only four dietitians (1.6%) reported receiving marketing skills from the Internet while 11% (N=20) indicated ADA Skills Workshop. Other methods used by dietitians to obtain marketing skills are workshops (52%), self study (47%) and college courses (37%) (Figure XV). Respondents were given the opportunity to list additional methods for obtaining marketing skills and they are listed in Appendix D.

**FIGURE XIV**  
**DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS: PERCENT OF JOB AS MARKETING/SERVICE QUALITY**



**FIGURE XV  
HOW MARKETING SKILLS WERE OBTAINED**



**FIGURE XV  
HOW MARKETING SKILLS WERE OBTAINED**

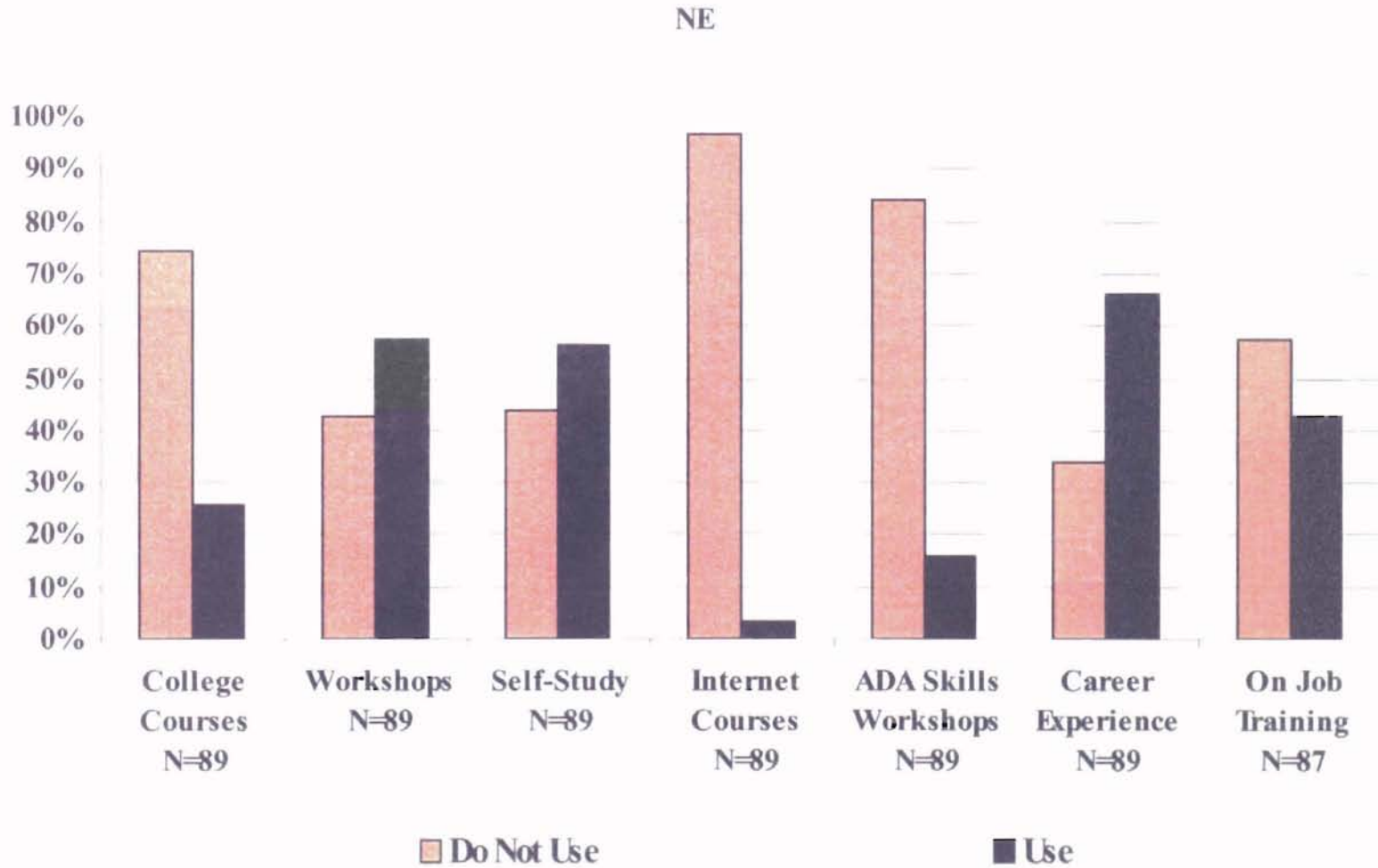
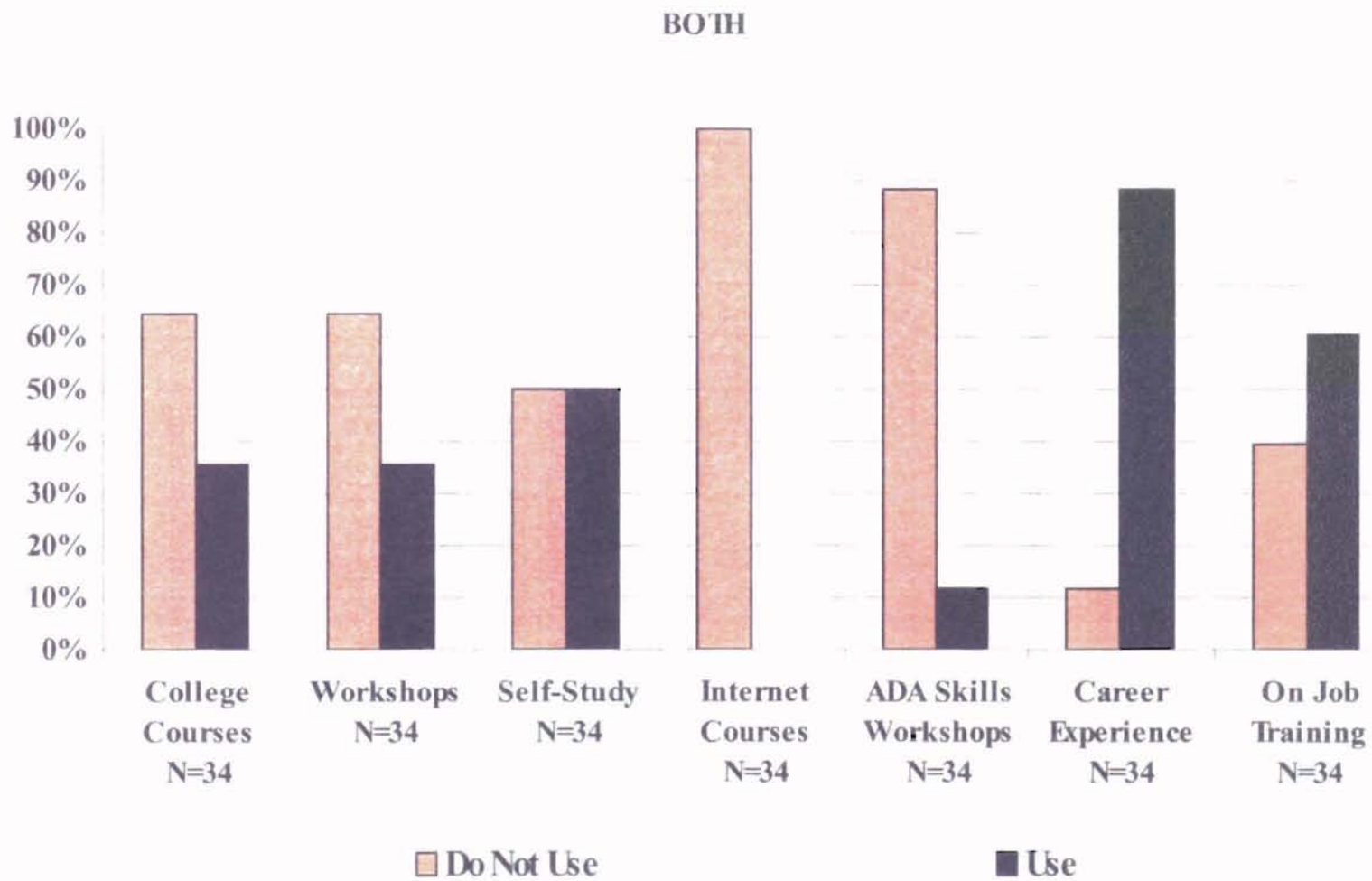


FIGURE XV  
HOW MARKETING SKILLS WERE OBTAINED





## Statistical Analysis

### Services Marketing Skills

#### Testing of H<sub>1</sub>

H<sub>1</sub>: There will be no significant association between the perceptions of marketing skills of non-traditional dietitians and selected personal/institutional demographic variables: gender, age, degree, output, salary, and practice group.

#### A. 20 Services Marketing Skills

Chi Square analyses (Appendix E, pg. 186) were determined if associations existed between the 20 services marketing skills (Questionnaire, Appendix C) and selected personal/institutional variables including: gender, age, highest degree of education, salary range, output of organization, and dietetic practice group.

#### Services Marketing Skill: Basic knowledge of customers/clients/consumers

While all three groups have a linear increase in knowledge based on salary range, dietitians making \$55,000-\$100,000 have significantly ( $p=0.0001$ ) higher mean scores for adequate knowledge concerning customers/clients/consumers than those earning in the lower or higher ranges (Table I). A linear increase in knowledge based on output also occurs for all groups, however, dietitians delivering a service-product bundle have significantly ( $p=0.0004$ ) more than adequate knowledge for this skill than those

TABLE I

CHI SQUARE VALUES ON ASSOCIATION BETWEEN  
SERVICES MARKETING SKILLS AND DEMOGRAPHICS

Demographics	Knowledge of Customer	Purchasing Decisions of Customers	Developing Strategic Segmentation	Defining a "Value Proposition"	Developing New Products & Services	Managing Product Mix	Consistent Products & Services
<u>Gender</u>							
X <sup>2</sup>	-	10.906	-	-	-	-	-
df	-	2	-	-	-	-	-
p	-	0.0043	-	-	-	-	-
<u>Age:</u>							
X <sup>2</sup>	-	-	-	-	-	10.615	-
df	-	-	-	-	-	4	-
p	-	-	-	-	-	0.0313	-
<u>Degree:</u>							
X <sup>2</sup>	-	-	-	-	-	-	-
df	-	-	-	-	-	-	-
p	-	-	-	-	-	-	-
<u>Salary:</u>							
X <sup>2</sup>	26.970	38.842	50.412	30.148	27.899	30.594	30.951
df	4	4	4	4	4	4	4
p	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
<u>Output:</u>							
X <sup>2</sup>	20.715	18.319	14.365	17.601	15.807	15.998	12.083
df	4	4	4	4	4	4	4
p	0.0004	0.0011	0.0062	0.0015	0.0033	0.0030	0.0167
<u>Group:</u>							
X <sup>2</sup>	18.640	18.896	26.070	17.746	18.991	23.413	-
df	4	4	4	4	4	4	-
p	0.0009	0.0008	0.0001	0.0014	0.0008	0.0001	-

TABLE I

CHI SQUARE VALUES ON ASSOCIATION BETWEEN  
SERVICES MARKETING SKILLS AND DEMOGRAPHICS CONTINUED

Demographics	Strategic Price Management	Pricing to Maximize Return	Maximizing Net Price	Developing Channel Strategy	Developing Partnering Strategy	Develop Partnerships
<u>Gender</u>						
X <sup>2</sup>	-	-	-	-	-	-
df	-	-	-	-	-	-
p	-	-	-	-	-	-
<u>Age:</u>						
X <sup>2</sup>	-	-	-	-	-	-
df	-	-	-	-	-	-
p	-	-	-	-	-	-
<u>Degree:</u>						
X <sup>2</sup>	-	10.432	-	-	-	-
df	-	2	-	-	-	-
p	-	0.0054	-	-	-	-
<u>Salary:</u>						
X <sup>2</sup>	25.309	23.487	22.877	18.520	28.933	29.475
df	4	4	4	44	4	4
p	0.0001	0.0001	0.0001	0.0010	0.0001	0.0001
<u>Output:</u>						
X <sup>2</sup>	-	-	-	-	19.658	19.327
df	-	-	-	-	4	4
p	-	-	-	-	0.0006	0.0007
<u>Group:</u>						
X <sup>2</sup>	-	-	-	19.977	25.934	34.123
df	-	-	-	4	4	4
p	-	-	-	0.0005	0.0001	0.0001

TABLE I  
CHI SQUARE VALUES ON ASSOCIATION BETWEEN  
SERVICES MARKETING SKILLS AND DEMOGRAPHICS CONTINUED

Demographics	Develop Effective Sales Force Strategy	Provide Sales Force	Ensuring Well-Trained Sales Force	Developing Promotion Strategy	Using Electronic Multimedia	Developing Effective Brand Strategy	Developing Effective Brand Strategy
<u>Gender</u>							
X <sup>2</sup>	-	-	-	-	7.575	7.013	-
df	-	-	-	-	2	2	-
p	-	-	-	-	0.0227	0.0300	-
<u>Age:</u>							
X <sup>2</sup>	-	10.539	-	-	-	-	-
df	-	4	-	-	-	-	-
p	-	0.0323	-	-	-	-	-
<u>Degree:</u>							
X <sup>2</sup>	-	-	-	-	-	-	-
df	-	-	-	-	-	-	-
p	-	-	-	-	-	-	-
<u>Salary:</u>							
X <sup>2</sup>	38.029	24.562	29.925	22.475	14.805	18.792	16.270
df	4	4	4	4	4	4	4
p	0.0001	0.0001	0.0001	0.0002	0.0051	0.0009	0.0027
<u>Output:</u>							
X <sup>2</sup>	15.206	28.577	30.160	18.382	13.086	19.442	14.788
df	4	4	4	4	4	4	4
p	0.0043	0.0001	0.0001	0.0010	0.0109	0.0006	0.0052
<u>Group:</u>							
X <sup>2</sup>	37.858	41.867	32.051	29.170	9.850	24.347	9.757
df	4	4	4	4	4	4	4
p	0.0001	0.0001	0.0001	0.0001	0.0430	0.0001	0.0447

dietitians selling a product or delivering a service only. Members of both practice groups and DBC have a significantly ( $p=0.0009$ ) higher mean scores for knowledge than members of NE (Table I). Approximately 75% of dietitians belonging to both DBC and NE and members of only DBC feel that they have more than adequate knowledge about customers whereas only 50% of NE dietitians considered their knowledge level to be more than adequate. While the majority of females have adequate and more than adequate knowledge, men have significantly ( $p=0.0043$ ) limited knowledge of customers. Fifty percent of men perceive themselves as having limited basic knowledge of customers.

Services Marketing Skill: Purchasing decisions of customers/clients/consumers.

Dietitians making \$55,000-100,000 and  $\geq \$100,001$  have a linear increase in purchasing knowledge while dietitians making  $\leq \$55,000$  have significantly ( $p=0.0001$ ) lower scores concerning purchasing (Table I). While 50% of these dietitians have adequate purchasing knowledge, only 26% perceive their knowledge as more than adequate.

Dietitians delivering a service have significantly ( $p=0.0011$ ) lower scores for purchasing compared with those dietitians selling a service or delivering a service-product bundle (Table I). Only 32% of dietitians delivering a service consider their purchasing knowledge to be more than adequate compared with 51% of dietitians selling a product and 57% of dietitians delivering a service-product bundle.

The majority of dietitians belonging to both practice groups and to DBC have adequate or more than adequate purchasing knowledge whereas, NE dietitians have

significantly ( $p=0.0008$ ) lower scores for purchasing (Table I). This result is possibly because the majority of dietitians in NE are delivering a service therefore, less purchasing is performed .

Services Marketing Skill: Developing a strategic segmentation.

Dietitians earning  $\leq \$55,000$  have significantly ( $p=0.0001$ ) less knowledge concerning strategic segmentation than those earning  $\$55,001-\$100,000$  or  $\geq \$100,000$  (Table I). The majority of the dietitians in the lower salary range have limited or adequate knowledge compared to those in the middle and upper salary ranges who have a greater tendency to possess adequate or more than adequate knowledge.

Dietitians delivering a service have significantly ( $p=0.0062$ ) lower strategic segmentation knowledge compared with those selling a product or delivering a service-product bundle (Table I). Dietitians involved with a product or bundle have fairly even distribution across the knowledge range. Fifty-one percent of dietitians delivering a service perceive themselves as having limited knowledge, followed by 29% with adequate knowledge and only 19% with more than adequate knowledge.

Dietitians belonging to NE have significantly ( $p=0.0001$ ) lower knowledge scores than dietitians in DBC and in both practice groups (Table I). Fifty-eight percent of NE members perceive themselves as having limited knowledge on strategic segmentation compared with 33% of DBC members and only 16% of those belonging to both groups.

Services Marketing Skill: Defining a “value proposition” or promise to the customer.

Dietitians in two of the salary groups, \$55,000-\$100,000 and  $\geq$ \$100,000, have increasing scores in knowledge based on salary range while dietitians earning  $<$ \$55,000 have less knowledge of value proposition. With 42% having limited knowledge and 32% with adequate knowledge, dietitians in the lower salary range have significantly ( $p=0.0001$ ) lower knowledge scores concerning value proposition (Table I).

Those dietitians delivering a service-product bundle have significantly ( $p=0.0015$ ) higher knowledge scores than those dietitians delivering either a product or a service (Table I). This is possibly because dietitians with a service + product have a larger array of customers than those selling just a product or a service. Forty-nine percent of dietitians delivering a product have adequate knowledge while only 31% have more than adequate knowledge. Dietitians delivering a service have descending scores for value proposition.

While members of both practice groups and DBC experience a linear increase in knowledge, members of NE have a linear decrease in knowledge regarding strategic segmentation. Dietitians belonging to NE have significantly ( $p=0.0014$ ) lower knowledge scores since 43% have limited knowledge compared with only 21% of dietitians belonging to DBC and 16% belonging to both groups in the area of strategic segmentation (Table I).

Services Marketing Skill: Developing new products and services.

Concerning the development of new products and services, dietitians earning  $\leq$ \$55,000 have significantly ( $p=0.0001$ ) lower knowledge scores than dietitians in the

middle and upper salary ranges (Table I). Of the dietitians in the lower salary range, 34% have limited knowledge, 44% adequate knowledge, and only 21% with more than adequate knowledge. The majority of the dietitians in the middle and upper salary ranges perceive themselves as having adequate or more than adequate knowledge on the development of new products and services. This higher knowledge perception of those dietitians in the higher salary ranges is probably due to the fact that older dietitians have more experiences than those earning  $\leq$ \$55,000.

Dietitians delivering a service-product bundle have significantly ( $p=0.0033$ ) higher knowledge product and service development scores than dietitians selling a product or delivering a service (Table I). Dietitians with a service + product are the only group having a linear increase in knowledge as salary increased. Dietitians responsible for a product or service only, have a more percentage of respondents with adequate knowledge than more than adequate knowledge.

Members of both practice groups have significantly ( $p=0.0008$ ) higher product and service development scores than members of DBC or NE only (Table I). The majority of dietitians belonging to only DBC or NE perceive their knowledge of developing new products or services to be adequate.

#### Services Marketing Skill: Managing product mix.

Dietitians in the upper age range, > 56 years, have significantly ( $p=0.0313$ ) higher knowledge of product mix than dietitians in the middle and younger age range (Table I). This result is probably due to an increase in knowledge with an increase in experience. Knowledge for the younger and middle aged dietitians decreases from adequate to more



than adequate. These dietitians have knowledge concerning the product mix but do not yet have the experience to perceive their knowledge to be more than adequate.

Dietitians in the lower salary range,  $\leq \$55,000$ , have significantly ( $p=0.0001$ ) lower product mix knowledge scores than those in the mid and upper salary ranges (Table I). The majority of dietitians earning  $\leq \$55,000$  have limited (43%) or adequate (43%) knowledge of the product mix, whereas the majority of dietitians in the mid and upper salary ranges have adequate or more than adequate knowledge of the product mix. Dietitians making  $\leq \$55,000$  are more than likely young and possess less marketing experience than those dietitians earning  $\$55,001-\$100,000$  and  $> \$100,001$ .

Dietitians delivering a service have significantly ( $p=0.0030$ ) lower product mix scores than those dietitians delivering a product or a service + product (Table I). Services are intangible, no products are involved except for materials associated with the service. Where the majority of dietitians selling a product or delivering a service + product considered themselves as having adequate or more than adequate knowledge for product mix, the majority of dietitians delivering a service (81%) felt that their product mix knowledge was limited or just adequate.

Approximately 40% of respondents belonging to both practice groups and DBC only, felt that their product mix knowledge was adequate. This percentage is slightly higher than the percentage of respondents in these 2 groups (both and DBC) who perceived their knowledge to be more than adequate for product mix. Members of NE, however, have significantly ( $p=0.0001$ ) lower product mix scores, with 45% of respondents having limited knowledge and only 11% with more than adequate knowledge (Table I). Due to the fact that the majority of dietitians belonging to NE are

delivering a service, they more than likely have less knowledge concerning products compared with members of DBC or both groups.

Services Marketing Skill: Ensuring competitive, consistent products and services.

Dietitians earning \$55,000-\$100,000 and  $\geq$ \$100,001 have a greater tendency to perceive their knowledge on competitive, consistent products and services as adequate or more than adequate than those dietitians in the lower salary range. Dietitians earning  $\leq$ \$55,000 have significantly ( $p=0.0001$ ) lower knowledge scores (Table I). While 54% of these dietitians do perceive their knowledge of ensuring competitive, consistent products and services as adequate, only 23% claim to have more than adequate knowledge with the remaining 23% having limited knowledge. Because the dietitians making  $\leq$ \$55,000 are more than likely younger than those in the high salary range and do not yet have the experience to master this skill.

The majority of respondents selling a product or delivering a service + product, have adequate or more than adequate knowledge of consistent products and services. Those respondents delivering a service, however, have significantly ( $p=0.0167$ ) lower knowledge scores (Table I). Compared with 46% of dietitians selling a product and 50% of dietitians delivering a bundle, only 28% dietitians delivering a service perceive their knowledge to be more than adequate. One distinguishing characteristic of services is the fact that they vary. Unlike products which are uniform, no two services are the same. Different personalities of the person delivering the service as well as the type of consumers create variation in services.

Services Marketing Skill: Strategic Price Management.

Salary was the only variable having a significant association with strategic price management. Dietitians earning in the mid salary range have significantly ( $p=0.0001$ ) higher knowledge scores for strategic price management than those dietitians in the lower and upper salary range (Table I). The majority of dietitians earning \$55,000-\$100,000 perceive their knowledge to be adequate (38%) or more than adequate (38%). Dietitians in the lower salary range have a greater tendency to have limited knowledge (50%) or adequate knowledge (37%), whereas 42% of those earning  $\geq$ \$100,001 have limited knowledge with only 32% having more than adequate knowledge. Perhaps those earning more money are no longer involved in operational management, hence their limited knowledge of strategic price management.

Services Marketing Skill: Pricing products and services to maximize return.

Dietitians having a graduate degree have significantly ( $p=0.0054$ ) lower scores in pricing products and services to maximize return than dietitians with a bachelors degree only (Table I). A linear decrease occurs in the knowledge range for respondents with a graduate degree with 46% having limited knowledge, 39% with adequate knowledge and only 15% with more than adequate knowledge. While dietitians with a bachelors degree have a greater tendency to perceive their knowledge as adequate (41%), 28% have limited knowledge and 31% possess more than adequate pricing knowledge.

Dietitians earning  $<$ \$55,000 have significantly ( $p=0.0001$ ) lower pricing scores than dietitians in the mid and upper salary ranges (Table I). The majority of dietitians in the lower salary range (89%) have limited or adequate pricing knowledge compared with

the majority of dietitians in the mid and upper salary range who have adequate or more than adequate pricing knowledge. Due to the lack of experience that dietitians in the lower salary range have, they tend to be more conservative when pricing products and services. Those dietitians in the mid and upper salary ranges probably have more experience and are more comfortable with the demand in prices.

Services Marketing Skill: Maximizing realized net price for each transaction.

Salary was the only variable having a significant association with the knowledge of maximizing realized net price for each transaction. Dietitians earning  $\leq \$55,000$  have significantly ( $p=0.0001$ ) lower knowledge scores than those earning  $\$55,001-\$100,000$  or  $\geq \$100,001$  (Table I). Of the majority of dietitians in the lower salary range, 57% perceive their knowledge of maximizing realized net price to be limited while 31% have adequate knowledge. This result is more than likely due to their younger age and lack of experience. While the majority of dietitians in the mid salary range have adequate or more than adequate knowledge, a larger percent have just adequate knowledge. For those dietitians earning  $> \$100,001$ , the relationship is linear decreasing but fairly evenly distributed with 39% limited, 33% adequate and 28% more than adequate.

Services Marketing Skill: Developing and executing an effective channel strategy.

While all three salary range groups had the largest percent of respondents with limited knowledge, dietitians earning  $< \$55,000$  have significantly ( $p=0.0010$ ) lower knowledge scores than those dietitians in the mid and upper salary ranges (Table I). Ninety-one percent of the respondents in the lower salary range consider their knowledge to be limited or adequate compared with 74% of those in the mid salary range and 67% of

the upper salary range respondents. Again, dietitians earning  $\leq$ \$55,000 are probably younger, less experienced and therefore possess less knowledge on an effective channel strategy than dietitians with a larger salary.

Respondents belonging to both practice groups have significantly ( $p=0.0005$ ) higher channel strategy scores than members of only DBC or NE (Table I). Members of both groups are divided with 39% having limited knowledge, 22% with adequate knowledge and 39% having more than adequate knowledge. These dietitians probably have a higher knowledge level on channel strategy since they have a wider variety of customers. While the relationship between practice group and knowledge is linear decreasing for DBC and NE, the decrease is more drastic for NE. Only 48% of DBC members consider their channel strategy knowledge to be limited whereas 69% of NE members have limited knowledge. NE members tend to have a more confined set of customers which explains a high percentage with limited knowledge about developing and executing an effective channel strategy.

Services Marketing Skill: Developing and executing an effective partnering strategy.

Dietitians in the lower salary range have significantly ( $p=0.0001$ ) lower knowledge scores concerning an effective partnering strategy (Table I). While the relationship between salary and knowledge for the mid and upper salary ranges was increasing linearly, the reverse is true for those in the lower salary range. The majority of the respondents earning  $<$ \$55,000 had limited or adequate partnering knowledge whereas the majority of the respondents earning \$55,001-\$100,000 or  $\geq$ \$100,001 perceive their knowledge to be adequate or more than adequate. Dietitians with salaries of \$55,001-

\$100,000 or  $\geq$ \$100,000 are more than likely older with more experience therefore, having more knowledge about partnering.

The relationship between output and partnering knowledge was linear decreasing for those dietitians delivering a product or service only, compared with a linear increasing relationship for dietitians delivering a service + product. Dietitians delivering a service-product bundle have significantly ( $p=0.0006$ ) higher knowledge scores for partnering than dietitians who sell a product or deliver a service (Table I).

Dietitians belonging to both practice groups or to DBC have a greater tendency to possess adequate or more than adequate partnering knowledge compared with NE members who have a greater tendency to have limited or adequate knowledge. Members of NE have significantly ( $p=0.0001$ ) lower partnering scores than members of both groups or DBC (Table I). NE members work more on a 1:1 basis with their clients and are less likely to develop a partnering strategy which is with groups or communities

#### Services Marketing Skill: Developing effective partnerships with customers and suppliers.

For dietitians earning in the mid and upper salary ranges, the relationship between salary knowledge for effective partnerships with customers and suppliers is linearly increasing but, the relationship for dietitians earning in the lower salary range is reversed. Respondents earning  $\leq$ \$55,000 have significantly ( $p=0.0001$ ) lower knowledge scores for partnerships with customers and suppliers than those earning in the mid and upper salary ranges (Table I).

Dietitians delivering a service have significantly ( $p=0.0007$ ) lower knowledge scores for effective partnerships with customers and suppliers than dietitians selling a

product or delivering a service + product (Table I). Dietitians delivering a service have a greater tendency to have limited or adequate knowledge compared with dietitians selling a product or a bundle who have a greater tendency to have adequate or more than adequate knowledge. Dietitians delivering a service should possess adequate knowledge on effective partnerships with customers due to the fact they have direct interaction with customers.

Members of NE have significantly ( $p=0.0001$ ) lower knowledge scores for effective partnerships with customers and suppliers than members of DBC and both practice groups (Table I). While the largest percent of members belonging to DBC and both practice groups have more than adequate knowledge, the largest percent of NE members have limited knowledge. Since the majority of NE members are delivering a service, they have direct interaction with the customer & therefore, need adequate knowledge of effective partnerships with individual customers.

Services Marketing Skills: Developing and executing an effective sales force strategy.

Dietitians earning \$55,001-\$100,000 and  $\geq$ \$55,001 have a greater tendency to possess adequate knowledge for sales force strategy compared with dietitians earning  $\leq$ \$55,000 who have a greater tendency to have limited knowledge. Due to their lack of experience, dietitians in the lower salary range have significantly ( $p=0.0001$ ) lower knowledge scores than those dietitians in the mid and upper salary range (Table I).

For all of the output groups, the greatest percentile of respondents in each group perceive themselves as having limited knowledge of effective sales force strategy. Dietitians delivering a service however, have significantly ( $p=0.0043$ ) lower knowledge



scores than dietitians selling a product or delivering a bundle (Table I). Compared with the product and bundle groups who both have approximately 40% of respondents with limited knowledge, 65% of service respondents perceive their knowledge to be limited.

While most members of both practice groups have adequate knowledge, there are more members belonging to DBC and NE who have limited knowledge concerning sales force strategy. Members of NE have significantly ( $p=0.0001$ ) lower knowledge scores than member of DBC and both groups however, the majority of respondents in all three groups have either limited or adequate knowledge (Table I). RDs may not be involved in this area of marketing instead, their accountants may be responsible for developing and executing an effective sales force strategy. This may be an area of need for RDs in DBC, NE and both.

Services Marketing Skill: Provide sales force with effective support.

Even though the greatest percentage of dietitians  $\leq 35$  years (55%) and 36-55 years (41%) perceive their knowledge for this expectation to be limited, dietitians  $\leq 35$  years have a significantly ( $p=0.0323$ ) greater tendency to indicate limited knowledge. The majority of dietitians  $> 50$  years (50%) perceive their knowledge to be adequate.

Dietitians earning  $< \$55,000$  have significantly ( $p=0.0001$ ) lower sales force knowledge scores than dietitians earning  $\$55,001-\$100,000$  and  $> \$100,001$  (Table I). The majority of dietitians (58%) in the lower salary range have limited knowledge whereas the majority of dietitians earning a greater salary have either adequate or more than adequate knowledge for providing sales force with effective support.



Significantly ( $p=0.0001$ ) lower scores for providing sales force knowledge are held by dietitians delivering a service (Table I). The majority of dietitians (57%) delivering a service perceive their knowledge for providing a sales force to be limited whereas the majority of dietitians selling a product or delivering a service-product bundle have adequate or more than adequate knowledge concerning providing a sales force.

The relationship between practice group and sales force knowledge is linear increasing for the DBC group and both practice groups, however, the reverse is true for the NE group. Members of NE have significantly ( $p=0.0001$ ) lower knowledge scores than members of both groups and DBC (Table I). Seventy percent of NE respondents consider their knowledge for providing a sales force with effective support to be limited.

Services Marketing Skill: Ensuring an effective and well-trained sales force.

Significantly ( $p=0.0001$ ) lower sales force scores are perceived by dietitians earning  $\leq \$55,000$  (Table I). Sixty-five percent of dietitians in the lower salary range perceived their knowledge to be limited. The distribution for scores in the middle salary range is fairly even, whereas scores for dietitians in the upper salary range are more likely to be adequate knowledge.

Dietitians delivering a service have significantly ( $p=0.0001$ ) lower sales force scores than dietitians selling a product or a service-product bundle (Table I). The majority of dietitians delivering a service (67%) consider their knowledge to be limited. Knowledge scores for dietitians delivering a product are evenly distributed. Thirty-eight percent of respondents delivering a bundle have adequate knowledge while 31% have limited and more than adequate knowledge.

NE respondents have significantly ( $p=0.0001$ ) lower knowledge scores (Table I). While 34% of DBC respondents and 37% of respondents belonging to both groups have limited sales force knowledge, more than double the number (74%) of NE respondents consider their knowledge of sales force to be limited.

Services Marketing Skill: Developing and executing an effective promotion strategy.

Dietitians earning  $\leq \$55,000$  had significantly ( $p=0.0002$ ) lower promotion strategy scores than dietitians in the larger salary ranges (Table I). The majority (86%) of dietitians in the lower salary range have limited or adequate (43% for each) knowledge concerning promotion strategy. Dietitians earning  $\$55,000-\$100,000$  and  $\geq \$100,000$  have a greater tendency to perceive their promotion strategy knowledge as adequate or more than adequate.

Significantly ( $p=0.0010$ ) lower knowledge scores for promotion are perceived by dietitians delivering a service (Table I). The majority of dietitians selling a product have adequate or more than adequate promotion strategy knowledge. For dietitians delivering a service-product bundle, 57% perceive their knowledge to be adequate while the rest of the respondents are divided evenly between limited and more than adequate knowledge.

Members of NE have significantly ( $p=.0001$ ) lower promotion scores than members of DBC or both groups (Table I). The relationship between practice group and knowledge is linear decreasing for NE while the relationship for both groups is reversed. The majority of DBC respondents (46%) have adequate knowledge followed by 30% with more than adequate knowledge and only 24% with limited knowledge.

Services Marketing Skill: Using electronic multimedia in promotions.

Males have significantly ( $p=0.0227$ ) higher multimedia scores in promotions than females (Table I). Males have a greater tendency to have adequate or more than adequate knowledge concerning multimedia scores compared with female's limited (49%) and adequate (33%) multimedia knowledge.

Significantly ( $p=.0051$ ) lower multimedia scores are perceived by dietitians earning  $\leq \$55,000$  (Table I). The majority of dietitians earning  $\leq \$55,000$  and  $\$55,001-\$100,000$  indicated limited or adequate knowledge, however, a larger percent of dietitians in the lower salary range perceived their knowledge to be limited. Of the respondents earning  $\geq \$100,001$ , the majority considered their knowledge to be limited or more than adequate. Those in the upper level management may no longer be involved with use of electronic multimedia in promotions or have never used them. Upper level management also generally deal more with conceptual strategies than technical.

Dietitians delivering a service have significantly ( $p=0.0109$ ) lower multimedia scores (Table I). Fifty-seven % of dietitians delivering a service perceive their knowledge to be limited. The largest percent of dietitians selling a product (49%) or delivering a service product bundle (44%), however, consider their knowledge of multimedia to be adequate.

While the relationship between practice group and multimedia knowledge is decreasing linearly for DBC and NE, the scores are more evenly distributed for the group containing both DBC and NE. Even though both DBC and NE have a decreasing linear relationship, due to 58% of NE respondents having limited knowledge, NE has significantly ( $p=0.0430$ ) lower multimedia knowledge scores (Table I).

Services Marketing Skill: Developing and executing an effective brand strategy.

Significantly ( $p=0.0300$ ) higher scores for brand strategy are perceived by males (Table I). Seventy-five percent of males consider their brand strategy knowledge to be adequate. In contrast, 48% of females perceive their knowledge to be limited while only 31% have adequate brand strategy knowledge.

Dietitians earning  $\leq \$55,000$  have significantly ( $p=0.0009$ ) lower knowledge scores (Table I) than those earning in the 2 higher salary ranges. Even though the majority of dietitians earning  $\leq \$55,000$  as well as those earning  $\$55,001-\$100,000$  have a greater tendency to perceive their brand strategy knowledge as limited or adequate, 58% of those earning  $< \$55,000$  indicate limited knowledge. Dietitians earning  $\geq \$100,000$  have knowledge scores that are evenly distributed.

The relationship between output and brand strategy is decreasing linearly for those dietitians delivering a service or selling a product. Dietitians delivering a service however, have a significantly ( $p=0.0006$ ) more tendency to indicate their knowledge as limited. Forty percent of dietitians delivering a service + product perceive their knowledge to be adequate while 30% have limited as well as more than adequate knowledge.

Members of NE have significantly ( $p=0.0001$ ) lower effective brand strategy knowledge scores than members of DBC or both groups. Sixty-six percent of NE members perceive their knowledge to be limited compared with 38% of DBC members and 27% of respondents belonging to both groups. Because the majority of dietitians

belonging to NE are mostly delivering a service, they do not have as much experience with brand strategy than the other respondents.

Services Marketing Skill: Developing and executing an effective package strategy.

Dietitians earning >\$100,001 have significantly ( $p=0.0027$ ) higher knowledge scores for package strategy than dietitians in the lower 2 salary ranges. The majority of dietitians earning <\$55,000 and \$55,001-\$100,000 perceive their knowledge on packaging strategy to be limited followed by adequate with the least percent considering their knowledge to be more than adequate. The largest percent of dietitians earning >\$100,001 (47%) consider their knowledge to be adequate while 26% have both limited and more than adequate knowledge.

Respondents delivering a service have a significantly ( $p=0.0052$ ) greater tendency to indicate their packaging knowledge as limited compared with respondents selling a product or delivering a service-product bundle (Table I). A greater percent of dietitians selling a product (20%), perceive their knowledge as more than adequate compared with 17% delivering a service-product bundle and 10% delivering a service. Dietitians who sell a product or a product + service perhaps have more experience with packaging and therefore, have higher knowledge scores than dietitians delivering a service.

While the majority of respondents belonging to DBC, NE and both groups perceive their knowledge of packaging to be limited or adequate, NE members have significantly ( $p=0.0447$ ) lower knowledge scores (Table I). Sixty-three percent of NE members indicate having limited knowledge compared with 49% of DBC members and only 33% of respondents belonging to both groups. The low knowledge score of NE is

perhaps due to the fact that the majority of dietitians belonging to NE are delivering a service. These dietitians are performing consultations and working one-on-one with patients and therefore do not have much experience with packaging.

#### B. 8 Marketing P's

The 20 services marketing skills were grouped into the 8 P's of marketing and marketing strategy (Chapter II, pg.15). Analysis of variance (ANOVA) and Duncan's multiple range tests were used to determine associations in the 8 marketing P's: product, price, place, partnering, people, promotion, position, and packaging as well as marketing strategy, and personal/institutional variables of age, salary, output and practice group. Significant associations were established at the  $p \leq 0.05$ . Significant relationships were found for the personal/institutional variables age, salary, output, and practice group and several of the marketing P's and strategy.

Age. Analysis of variance and Duncan's multiple range tests indicated a significant relationship between age ( $\leq 35$  years, 36-55 years, or  $\geq 56$  years) and 2 of the marketing P's, price and promotion. Younger dietitians had a significantly lower ( $p=0.0253$ ) price score (4.64) than the older group (5.96) and the middle-aged group (5.60) (Tables II & III). This result is perhaps due to younger dietitians having less experience and therefore being conservative in their pricing perception. Because of their years of experience, older dietitians are more aware of price demand and have more confidence when pricing products and services. Dietitians  $\geq 56$  years had significantly higher promotion

TABLE II

ANALYSIS OF VARIANCE FOR DIETITIAN'S AGE AND THEIR KNOWLEDGE  
OF SERVICES MARKETING SKILLS: PRICE

Source	DF	Mean Square	F Value	Pr>F
<u>Age</u>				
Price	2	17.43	3.74	0.0253
Error	214	4.66		
Corrected Total	216			

TABLE III

DUNCAN'S MULTIPLE RANGE TEST FOR THE DIETITIAN'S AGE AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PRICE

Price	N	Mean (%)	Groupings <sup>†</sup>
<u>Age</u>			
≥56 years	23	5.96	A
36-55 years	155	5.60	A
<35 years	39	4.64	B

<sup>†</sup>Means with the same letter are not significantly different.

higher promotion scores than dietitians  $\leq 35$  years (Tables IV & V). Because older dietitians have more experience, they know more about promotion than the less experienced dietitians.

Salary. ANOVA and Duncan's multiple range test indicates a significant relationship between salary range ( $\leq \$55,000$ ,  $\$55,001-\$100,000$ , or  $\geq \$100,001$ ) and the services marketing skills scores for marketing strategy ( $p=0.0001$ ) and 7 of the marketing P's: product ( $p=0.0001$ ), price ( $p=0.0001$ ), place ( $p=0.0001$ ), partner ( $p=0.0001$ ), people ( $p=0.0001$ ), promotion ( $p=0.0001$ ) and package ( $p=0.0003$ ) (Tables VI to XXI). Dietitians earning a salary  $\leq \$55,000$  perceive themselves to be less knowledgeable concerning marketing strategy and 7 of the marketing P's than those dietitians earning  $\$55,001-\$100,000$  and  $\geq \$100,001$ . Dietitians making  $\leq \$55,000$  are more than likely younger and therefore, have not had the amount of experience with marketing as the older dietitians. This limited experience explains their perceptions of services marketing knowledge.



TABLE IV

ANALYSIS OF VARIANCE FOR DIETITIAN'S AGE AND THEIR KNOWLEDGE  
OF SERVICES MARKETING SKILLS: PARTNER

Source	DF	Mean Square	F Value	Pr>F
<u>Age</u>				
Partner	2	4.35	2.05	0.1318
Error	218	2.13		
Corrected Total	220			

TABLE V

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S AGE AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PARTNER

Partner	N	Mean (%)	Groupings <sup>†</sup>
<u>Age</u>			
≥56 years	23	4.6	A
36-55 years	157	4.0	AB
<35 years	41	3.9	B

<sup>†</sup>Means with the same letter are not significantly different.

TABLE VI

ANALYSIS OF VARIANCE FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: STRATEGY

Source	DF	Mean Square	F Value	Pr>F
<u>Salary</u>				
Strategy	2	145.82	33.38	0.0001
Error	230	4.37		
Corrected Total	232			

TABLE VII

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: STRATEGY

Strategy	N	Mean (%)	Groupings <sup>1</sup>
<u>Salary</u>			
≥\$100,001	19	10.63	A
\$55,001-\$100,000	96	9.89	A
≤\$55,000	118	7.81	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE VIII

ANALYSIS OF VARIANCE FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PRODUCT

Source	DF	Mean Square	F Value	Pr>F
<u>Salary</u>				
Product	2	65.44	21.74	0.0001
Error	233	3.01		
Corrected Total	235			

TABLE IX

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PRODUCT

Product	N	Mean (%)	Groupings <sup>1</sup>
<u>Salary</u>			
≥\$100,001	19	7.42	A
\$55,001-\$100,000	96	7.02	A
<\$55,000	121	5.61	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE X

ANALYSIS OF VARIANCE FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PRICE

Source	DF	Mean Square	F Value	Pr>F
<u>Salary</u>				
Price	2	55.19	12.90	0.0001
Error	227	4.28		
Corrected Total	229			

TABLE XI

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PRICE

Price	N	Mean (%)	Groupings <sup>1</sup>
<u>Salary</u>			
\$55,001-\$100,000	95	6.24	A
≥\$100,001	18	5.88	A
≤\$55,000	117	4.81	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XII

ANALYSIS OF VARIANCE FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PLACE

Source	DF	Mean Square	F Value	Pr>F
<u>Salary</u>				
Place	2	5.08	9.37	0.0001
Error	228	0.54		
Corrected Total	230			

TABLE XIII

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PLACE

Place	N	Mean (%)	Groupings <sup>1</sup>
<u>Salary</u>			
≥\$100,001	18	1.94	A
\$55,001-\$100,000	96	1.82	A
≤\$55,000	117	1.43	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XIV

ANALYSIS OF VARIANCE FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PARTNER

Source	DF	Mean Square	F Value	Pr>F
<u>Salary</u>				
Partner	2	33.86	17.94	0.0001
Error	233	1.89		
Corrected Total	235			

TABLE XV

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PARTNER

Partner	N	Mean (%)	Groupings <sup>1</sup>
<u>Salary</u>			
≥\$100,001	19	4.84	A
\$55,001-\$100,000	96	4.64	A
≤\$55,000	121	3.60	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XVI

ANALYSIS OF VARIANCE FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PEOPLE

Source	DF	Mean Square	F Value	Pr>F
<u>Salary</u>				
People	2	78.08	18.33	0.0001
Error	218	4.26		
Corrected Total	220			

TABLE XVII

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PEOPLE

People	N	Mean (%)	Groupings <sup>1</sup>
<u>Salary</u>			
\$55,001-\$100,000	93	6.13	A
≥\$100,001	18	6.06	A
<\$55,000	110	4.44	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XVIII

ANALYSIS OF VARIANCE FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PROMOTION

Source	DF	Mean Square	F Value	Pr>F
<u>Salary</u>				
Promotion	2	15.52	9.34	0.0001
Error	233	1.66		
Corrected Total	235			

TABLE XIX

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PROMOTION

Promotion	N	Mean (%)	Groupings <sup>1</sup>
<u>Salary</u>			
≥\$100,001	19	4.37	A
\$55,001-\$100,000	95	3.93	A
≤\$55,000	122	3.31	B

<sup>1</sup>Means with the same letter are not significantly different.



TABLE XX

ANALYSIS OF VARIANCE FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PACKAGE

Source	DF	Mean Square	F Value	Pr>F
<u>Salary</u>				
Package	2	4.07	8.30	0.0003
Error	229	0.49		
Corrected Total	231			

TABLE XXI

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S SALARY AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PACKAGE

Package	N	Mean (%)	Groupings <sup>1</sup>
<u>Salary</u>			
≥\$100,001	19	2.0	A
\$55,001-\$100,000	97	1.76	A
<\$55,000	116	1.45	B

<sup>1</sup>Means with the same letter are not significantly different.

Output of Organization. ANOVA and Duncan's multiple range test indicated a significant relationship between output of the organization (product, service, or service + product) and the service marketing skill scores for strategy ( $p=0.0001$ ), product ( $p=0.0003$ ), partner ( $p=0.0001$ ), people ( $p=0.0001$ ), position ( $p=0.0001$ ) and package ( $p=0.0033$ ) (Tables XXII to XXXIII). Dietitians involved in delivering a service only, perceive themselves to have less knowledge pertaining to strategy, product, people, position, and package than those dietitians delivering a product or a service-product bundle. Due to the four distinguishing characteristics of services: intangibility, inseparability, variability and perishability, the marketing mix for services differs from the product marketing mix. Low product and package scores can be attributed to the fact that services are intangible and no product or package is involved. Dietitians delivering a service also had a significantly lower partner score (3.70) than those delivering a service + product (4.63). The partner score for the product group was not significantly different than the scores of the service + product or service groups (Tables XXVI & XXVII). Partnering refers to developing effective relationships with customers and suppliers. Dietitians delivering a service should not have lower partnering scores because they have direct interaction with the customer however, the supplier is often themselves.

Dietetic Practice Group. ANOVA and Duncan's multiple range test indicated a significant relationship between DPG (DBC, NE or members of both) and the marketing scores for strategy ( $p=0.0001$ ), product ( $p=0.0001$ ), price ( $p=.0823$ ), place ( $p=0.0002$ ),

TABLE XXII

ANALYSIS OF VARIANCE FOR DIETITIAN'S OUTPUT AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: STRATEGY

Source	DF	Mean Square	F Value	Pr>F
<u>Output</u>				
Strategy	2	62.23	12.34	0.0001
Error	221	5.04		
Corrected Total	223			

TABLE XXIII

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S OUTPUT AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: STRATEGY

Strategy	N	Mean (%)	Groupings <sup>1</sup>
<u>Output</u>			
Service + Product	87	9.68	A
Product	34	9.35	A
Service	103	8.11	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XXIV

ANALYSIS OF VARIANCE FOR DIETITIAN'S OUTPUT AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PRODUCT

Source	DF	Mean Square	F Value	Pr>F
<u>Output</u>				
Product	2	27.98	8.43	0.0003
Error	224	3.32		
Corrected Total	226			

TABLE XXV

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S OUTPUT AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PRODUCT

Product	N	Mean (%)	Groupings <sup>1</sup>
<u>Output</u>			
Service + Product	89	6.85	A
Product	35	6.77	A
Service	103	5.84	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XXVI

ANALYSIS OF VARIANCE FOR DIETITIAN'S OUTPUT AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PARTNER

Source	DF	Mean Square	F Value	Pr>F
<u>Output</u>				
Partner	2	20.31	10.23	0.0001
Error	224	1.99		
Corrected Total	226			

TABLE XXVII

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S OUTPUT AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PARTNER

Partner	N	Mean (%)	Groupings <sup>1</sup>
<u>Output</u>			
Service + Product	88	4.63	A
Product	35	4.14	AB
Service	104	3.70	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XXVIII

ANALYSIS OF VARIANCE FOR DIETITIAN'S OUTPUT AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PEOPLE

Source	DF	Mean Square	F Value	Pr>F
<u>Output</u>				
People	2	62.10	14.08	0.0001
Error	209	4.41		
Corrected Total	211			

TABLE XXIX

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S OUTPUT AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PEOPLE

People	N	Mean (%)	Groupings <sup>1</sup>
<u>Output</u>			
Product	35	6.23	A
Service + Product	83	5.86	A
Service	94	4.45	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XXX

ANALYSIS OF VARIANCE FOR DIETITIAN'S OUTPUT AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: POSITION

Source	DF	Mean Square	F Value	Pr>F
<u>Output</u>				
Position	2	5.58	9.80	0.0001
Error	219	0.57		
Corrected Total	221			

TABLE XXXI

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S OUTPUT AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: POSITION

Position	N	Mean (%)	Groupings <sup>1</sup>
<u>Output</u>			
Service + Product	88	1.99	A
Product	35	1.83	A
Service	99	1.51	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XXXII

ANALYSIS OF VARIANCE FOR DIETITIAN'S OUTPUT AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PACKAGE

Source	DF	Mean Square	F Value	Pr>F
<u>Output</u>				
Package	2	2.93	5.87	0.0033
Error	221	0.50		
Corrected Total	223			

TABLE XXXIII

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S OUTPUT AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PACAKAGE

Package	N	Mean (%)	Groupings <sup>1</sup>
<u>Output</u>			
Service + Product	89	1.79	A
Product	35	1.74	A
Service	100	1.45	B

<sup>1</sup>Means with the same letter are not significantly different.

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partner ( $p=0.0001$ ), people ( $p=0.0001$ ), promotion ( $p=0.0001$ ), position ( $p=0.0001$ ) and package ( $p=0.0078$ ) (Tables XXXIV to LIII). Dietitians belonging to NE perceive themselves as being less knowledgeable concerning marketing strategy, product, partner, people, promotion, and position than dietitians who belong to DBC or to both groups. The price score for dietitians belonging to NE (5.10) was significantly lower than the score for those belonging to both groups (6.04). The price score for the DBC group was not significantly different from the NE group or the group containing members of both DBC and NE (Tables XL & XLI). Place refers to the ability to develop and execute an effective channel strategy. Respondents belonging to both practice groups scored significantly higher (2.0) than those belonging to only DBC (1.70) or NE (1.39). Dietitians belonging to both practice groups are perhaps more knowledgeable on where to sell their service or product because they have access to different types of customers. Place scores for DBC (1.7) were significantly higher than NE scores (1.39) possibly because NE members have a limited number of customers to channel to (Tables XLII & XLIII). Because the majority of dietitians belonging to NE (71%) are delivering a service only, their knowledge score for package (1.45) was significantly lower than the scores for those belonging to both groups (1.90). DBCs package score was not significantly different from NEs or the score for those belonging to both groups.

T-tests (Appendix F) were used to determine associations in the 8 marketing P's: product, price, place, partnering, people, promotion, position, packaging and marketing strategy, and personal/institutional variables of gender and highest degree. The only

TABLE XXXIV

ANALYSIS OF VARIANCE FOR DIETITIAN'S DPG AND THEIR KNOWLEDGE  
OF SERVICES MARKETING SKILLS: STRATEGY

Source	DF	Mean Square	F Value	Pr>F
<u>DPG Group</u>				
Strategy	2	87.25	17.89	0.0001
Error	230	4.88		
Corrected Total	232			

TABLE XXXV

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S DPG AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: STRATEGY

Strategy	N	Mean (%)	Groupings <sup>1</sup>
<u>DPG Group</u>			
Both	31	9.97	A
DBC	122	9.39	A
NE	80	7.73	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XXXVI

ANALYSIS OF VARIANCE FOR DIETITIAN'S DPG AND THEIR KNOWLEDGE  
OF SERVICES MARKETING SKILLS: PRODUCT

Source	DF	Mean Square	F Value	Pr>F
<u>DPG Group</u>				
Product	2	36.68	11.26	0.0001
Error	233	3.26		
Corrected Total	235			

TABLE XXXVII

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S DPG AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PRODUCT

Product	N	Mean (%)	Groupings <sup>1</sup>
<u>DPG Group</u>			
Both	30	7.10	A
DBC	122	6.64	A
NE	84	5.61	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XL

ANALYSIS OF VARIANCE FOR DIETITIAN'S DPG AND THEIR KNOWLEDGE  
OF SERVICES MARKETING SKILLS: PRICE

Source	DF	Mean Square	F Value	Pr>F
<u>DPG Group</u>				
Price	2	11.77	2.53	0.0823
Error	227	4.66		
Corrected Total	229			

TABLE XLI

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S DPG AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PRICE

Price	N	Mean (%)	Groupings <sup>1</sup>
<u>DPG Group</u>			
Both	28	6.04	A
DBC	119	5.63	AB
NE	83	5.10	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XLII

ANALYSIS OF VARIANCE FOR DIETITIAN'S DPG AND THEIR KNOWLEDGE  
OF SERVICES MARKETING SKILLS: PLACE

Source	DF	Mean Square	F Value	Pr>F
<u>DPG Group</u>				
Place	2	4.77	8.75	0.0002
Error	228	0.55		
Corrected Total	230			

TABLE XLIII

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S DPG AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PLACE

Place	N	Mean (%)	Groupings <sup>1</sup>
<u>DPG Group</u>			
Both	31	2.0	A
DBC	120	1.70	B
NE	80	1.39	C

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XLIV

## ANALYSIS OF VARIANCE FOR DIETITIAN'S DPG AND THEIR KNOWLEDGE OF SERVICES MARKETING SKILLS: PARTNER

Source	DF	Mean Square	F Value	Pr>F
<u>DPG Group</u>				
Partner	2	36.36	19.49	0.0001
Error	233	1.87		
Corrected Total	235			

TABLE XLV

## DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S DPG AND THEIR KNOWLEDGE OF SERVICES MARKETING SKILLS: PARTNER

Partner	N	Mean (%)	Groupings <sup>1</sup>
<u>DPG Group</u>			
Both	30	4.83	A
DBC	120	4.46	A
NE	86	3.41	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XLVI

ANALYSIS OF VARIANCE FOR DIETITIAN'S DPG AND THEIR KNOWLEDGE  
OF SERVICES MARKETING SKILLS: PEOPLE

Source	DF	Mean Square	F Value	Pr>F
<u>DPG Group</u>				
People	2	97.20	23.80	0.0001
Error	218	4.08		
Corrected Total	220			

TABLE XLVII

DUNCAN'S MULTIPLE RANGE TEST FOR THE DIETITIAN'S DPG AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PEOPLE

People	N	Mean (%)	Groupings <sup>1</sup>
<u>DPG Group</u>			
Both	29	5.97	A
DBC	119	5.93	A
NE	73	3.95	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE XLVIII

ANALYSIS OF VARIANCE FOR DIETITIAN'S DPG AND THEIR KNOWLEDGE  
OF SERVICES MARKETING SKILLS: PROMOTION

Source	DF	Mean Square	F Value	Pr>F
<u>DPG Group</u>				
Promotion	2	20.07	12.37	0.0001
Error	233	1.622		
Corrected Total	235			

TABLE XLIX

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S DPG AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PROMOTION

Promotion	N	Mean (%)	Groupings <sup>1</sup>
<u>DPG Group</u>			
Both	32	4.28	A
DBC	121	4.84	A
NE	83	3.12	B

<sup>1</sup>Means with the same letter are not significantly different.



TABLE L

ANALYSIS OF VARIANCE FOR DIETITIAN'S DPG AND THEIR KNOWLEDGE  
OF SERVICES MARKETING SKILLS: POSITION

Source	DF	Mean Square	F Value	Pr>F
<u>DPG Group</u>				
Position	2	7.33	13.28	0.0001
Error	227	0.55		
Corrected Total	229			

TABLE LI

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S DPG AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: POSITION

Position	N	Mean (%)	Groupings <sup>1</sup>
<u>DPG Group</u>			
Both	30	2.10	A
DBC	120	1.88	A
NE	80	1.41	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE LII

ANALYSIS OF VARIANCE FOR DIETITIAN'S DPG AND THEIR KNOWLEDGE  
OF SERVICES MARKETING SKILLS: PACKAGE

Source	DF	Mean Square	F Value	Pr>F
<u>DPG Group</u>				
Package	2	2.50	4.95	0.0078
Error	229	0.50		
Corrected Total	231			

TABLE LIII

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S DPG AND THEIR  
KNOWLEDGE OF SERVICES MARKETING SKILLS: PACKAGE

Package	N	Mean (%)	Groupings <sup>1</sup>
<u>DPG Group</u>			
Both	30	1.90	A
DBC	122	1.67	AB
NE	80	1.45	B

<sup>1</sup>Means with the same letter are not significantly different.

significant associations found were between highest degree and 2 of the marketing Ps: price and people.

Highest Degree. Respondents with a bachelors degree had significantly higher mean scores for both price ( $p=0.0111$ ) and people ( $0.0315$ ) than respondents with a graduate degree. Respondents with a bachelors degree are perhaps performing more technical skills such as price and people where as those with a graduate degree are performing more conceptual skills.

Hypothesis one stated: There will be no significant association between the perceptions of marketing skills of non-traditional dietitians and selected personal/institutional demographic variables: gender, age, degree, output, salary, and practice group. As seen in Table I, significant differences were observed between services marketing skills and gender, age, degree, output, salary, and practice group. Therefore, the researcher rejected this null hypothesis.

### **Attitudes Toward Service Quality Expectations**

#### Testing of H<sub>2</sub>

H<sub>2</sub>: There will be no significant association between the attitude of service quality scores and selected personal/institutional demographic variables: gender, age, degree, output, salary, and practice group.

#### A. 21 Service Quality Expectations

Chi Square analyses (Appendix E, pg. 200) were determined for the 21 expectations of service quality (Questionnaire, Appendix C). These analyses were examined for relationship with personal/institutional variables gender, age, highest degree of education, salary range, output of organization, and dietetic practice group.

##### Expectation: Physical facilities will be visually appealing.

A significant association was found between practice group membership and the expectation of visually appealing physical facilities. Significantly ( $p=0.0107$ ) more dietitians belonging to both practice groups perceive this expectation to be less important to customers than those dietitians belonging to only DBC or NE (Table LIV).

##### Expectation: Employees will be neat.

The majority of dietitians in all age groups consider employees' neatness to be important to the customer/consumer. Significantly ( $p=0.0357$ ) more dietitians  $\geq 56$  years however, perceive the neatness of employees to be more important to customers than dietitians 35-55 years and  $\leq 35$  years (Table LIV).

##### Expectation: Promise to do something at a certain time & does so.

The majority of both male and female dietitians perceive the expectation of promise to be very important to consumers. A significantly ( $p=0.0010$ ) greater percentage of females (85%), however, indicated this expectation to be very important

TABLE LIV

CHI SQUARE VALUES ON ASSOCIATION BETWEEN ATTITUDES  
TOWARD SERVICE QUALITY AND DEMOGRAPHICS

Demographics	Modern- Looking Equipment	Physical Facilities Appealing	Employees Will Be Neat	Associated Materials Appealing	Convenient Business Hours	Promise Something At Certain Time	Sincere Interest in Solving Problem
<u>Gender</u>							
X <sup>2</sup>	-	-	-	-	-	13.733	55.010
df	-	-	-	-	-	2	3
p	-	-	-	-	-	0.0010	0.0001
<u>Age:</u>							
X <sup>2</sup>	-	-	16.509	-	-	-	-
df	-	-	8	-	-	-	-
p	-	-	0.0357	-	-	-	-
<u>Degree:</u>							
X <sup>2</sup>	-	-	-	-	-	-	-
df	-	-	-	-	-	-	-
p	-	-	-	-	-	-	-
<u>Salary:</u>							
X <sup>2</sup>	-	-	-	-	-	-	-
df	-	-	-	-	-	-	-
p	-	-	-	-	-	-	-
<u>Output:</u>							
X <sup>2</sup>	-	-	-	-	-	-	-
df	-	-	-	-	-	-	-
p	-	-	-	-	-	-	-
<u>Group:</u>							
X <sup>2</sup>	-	19.906	-	-	-	-	-
df	-	8	-	-	-	-	-
p	-	0.0107	-	-	-	-	-

TABLE LIV

CHI SQUARE VALUES ON ASSOCIATION BETWEEN ATTITUDES  
TOWARD SERVICE QUALITY AND DEMOGRAPHICS CONTINUED

Demographics	Will Perform Service Right the First Time	Will Provide Service at the Promised Time	Customer Told Exactly Service Performed	Prompt Service Will Be Given	Always Be Willing To Help	Never Too Busy to Respond	Will Instill Confidence in Customers
<u>Gender</u>							
X <sup>2</sup>	-	7.251	-	8.374	-	-	-
df	-	2	-	2	-	-	-
p	-	0.0266	-	0.0152	-	-	-
<u>Age:</u>							
X <sup>2</sup>	-	-	24.641	-	-	-	-
df	-	-	6	-	-	-	-
p	-	-	0.0004	-	-	-	-
<u>Degree:</u>							
X <sup>2</sup>	-	-	-	-	-	-	-
df	-	-	-	-	-	-	-
p	-	-	-	-	-	-	-
<u>Salary:</u>							
X <sup>2</sup>	-	-	-	-	-	-	-
df	-	-	-	-	-	-	-
p	-	-	-	-	-	-	-
<u>Output:</u>							
X <sup>2</sup>	-	-	-	-	-	-	-
df	-	-	-	-	-	-	-
p	-	-	-	-	-	-	-
<u>Group:</u>							
X <sup>2</sup>	-	-	-	-	-	-	-
df	-	-	-	-	-	-	-
p	-	-	-	-	-	-	-

TABLE LIV

CHI SQUARE VALUES ON ASSOCIATION BETWEEN ATTITUDES  
TOWARD SERVICE QUALITY AND DEMOGRAPHICS CONTINUED

Demographics	Customers Will Feel Safe in Their Care	Consistent Courtesy with Customers	Knowledge to Answer Questions	Give Customer Individual Attention	Give Customers Personal Attention	Customer's Best Interest at Heart	Understand Specific Needs of Customers
<u>Gender</u>							
X <sup>2</sup>	-	30.064	27.468	8.049	-	-	-
df	-	4	3	3	-	-	-
p	-	0.0001	0.0001	0.0450	-	-	-
<u>Age:</u>							
X <sup>2</sup>	-	-	-	-	-	-	-
df	-	-	-	-	-	-	-
p	-	-	-	-	-	-	-
<u>Degree:</u>							
X <sup>2</sup>	-	-	-	-	-	-	-
df	-	-	-	-	-	-	-
p	-	-	-	-	-	-	-
<u>Salary:</u>							
X <sup>2</sup>	-	-	-	-	-	-	-
df	-	-	-	-	-	-	-
p	-	-	-	-	-	-	-
<u>Output:</u>							
X <sup>2</sup>	16.860	-	-	-	-	-	-
df	8	-	-	-	-	-	-
p	0.0316	-	-	-	-	-	-
<u>Group:</u>							
X <sup>2</sup>	-	-	-	17.866	25.286	16.880	-
df	-	-	-	6	8	6	-
p	-	-	-	0.0066	0.0014	0.0097	-

compared with 63% of males (Table LIV). The significance of this association may be due to the low number of male respondents.

Expectation: Show sincere interest in solving problem.

A significantly ( $p=0.0001$ ) larger percentage of females (99%) perceive that showing sincere interest in solving problem is important or very important to customers compared with 76% of male respondents (Table LIV). This significant association is likely due to the low number of male respondents.

Expectation: Will provide service at the promised time.

A significantly ( $p=0.0266$ ) larger percent of females (78%) perceive that providing service at the promised time is very important to their customers compared with only 38% of male respondents (Table LIV). This association is perhaps due to the unequal distribution of male and female respondents.

Expectation: Customers told exactly when services will be performed.

Dietitians  $\geq 56$  years have a significantly ( $p=0.0004$ ) greater tendency to perceive that telling customers exactly when the service will be performed is very important to customers compared with dietitians in the younger age ranges (Table LIV). The dietitians  $\leq 35$  years do not consider this expectation to be as important as those dietitians 36-55 years and  $\geq 56$  years.



Expectation: Prompt service will be given.

Females perceive prompt service to be significantly ( $p=0.0152$ ) more important to customers than males (Table LIV). Seventy percent of females compared with 25% of males indicated that the expectation of prompt service as very important. This significant association could be due to the unequal distribution of gender between the respondents.

Expectation: Customers will feel safe in their care.

The majority of respondents in all 3 output groups consider this expectation to be important or very important. Significantly ( $p=0.0316$ ) more dietitians delivering a service (78%) perceive that customers will feel safe in their care to be very important compared with 44% of dietitians selling a product and 59% delivering a service + product (Table LIV). This is likely because dietitians delivering a service have direct interaction with the customer whereas those selling a product may not even see with the customer.

Expectation: Consistent courtesy with customers.

While the majority of both males and females consider consistent courtesy to be important or very important, significantly ( $p=0.0001$ ) more females perceive this expectation to be very important (Table LIV). This significant association between the expectation of consistent courtesy and gender is likely due to the unequal distribution of males and females.

Expectation: Knowledge to answer questions.

Eighty-eight percent of males and 99% of females perceive knowledge to be important or very important to the customer. Females, however, have a significantly

( $p=0.0001$ ) greater tendency to consider this expectation to be very important than males (Table LIV). This significant association may be the result of an unequal distribution of males and females.

Expectation: Company will give customer individual attention.

While 75% of males and 95% of females consider giving customer individual attention to be important or very important, males have a significantly ( $p=0.0450$ ) greater tendency to perceive this expectation as only somewhat important to customers (Table LIV). The unequal distribution of males and females is likely the cause for this significant association.

Members of DBC perceive giving customer individual attention to be significantly ( $p=0.0066$ ) less important to customers than members of NE or both groups. One hundred percent of members belonging to NE and both groups consider this expectation to be important or extremely important to customers compared with 87% of DBC members (Table LIV). Eleven percent of DBC members consider individual attention to be somewhat important while 2% feel this expectation is not so important.

Expectation: Employees will give customers personal attention.

Members of NE consider the expectation of employees giving customers personal attention to be significantly ( $p=0.0014$ ) more important to customers than members of DBC or both groups (Table LIV). All members of NE, 91% of DBC and 94% of respondents belonging to both groups indicated that this expectation is important or very important to customers.

Expectation: Have the customer's best interest at heart.

Members of DBC perceive having the customer's best interest at heart significantly ( $p=0.0097$ ) less important than members of NE or both groups (Table LIV). One hundred percent of respondents belonging to both groups and 99% of NE members consider this expectation to be important or very important compared with 90% of DBC members. Ten percent of DBC members indicated this expectation to be somewhat important to customers.

No significant relationship exists at  $p \leq .05$  between the personal/institutional variables and the following expectations: modern-looking equipment, associated materials will be visually appealing, convenient business hours, will perform the service right the first time, employees will always be willing to help, employees will never be too busy to respond, will instill confidence in customers, and understand the specific needs of their customers (Table LIV).

#### B. 5 Dimensions of Service Quality

The 21 expectations of service quality were grouped into the 5 dimensions of service quality (Chapter II, pg. 24). ANOVA and Duncan's multiple range test were used to determine associations between the 5 dimensions of service quality: tangibility, reliability, responsiveness, assurance, and empathy and the personal/institutional variables age, salary, output, and practice group. Significant associations were established at the  $p \leq 0.05$ . Significant relationships were found for all of the variables and 4 of the 5 service quality dimensions.

Age. ANOVA and Duncan's multiple range test indicated a significant relationship between age ( $\leq 35$  years, 36-55 years or  $\geq 56$  years) and the service quality dimension of tangibility ( $p=0.0439$ ) and reliability ( $p=0.0754$ ) (Tables LV to LVIII). For both tangibility and reliability, the younger dietitians had significantly lower scores than the older dietitians. Younger dietitians perceive that tangibility and reliability are not as important to their customers as how older dietitians perceive them to be. The score for the middle-aged group was not significantly different from those of the older or younger dietitians. Having more experience and wisdom, older dietitians are aware of the great importance of tangibility to those customers receiving a product and reliability for those customers receiving a service.

Salary. Analysis of variance and Duncan's multiple range test indicate a significant relationship between salary range ( $\leq \$55,000$ ,  $\$55,001-\$100,000$ , or  $\geq \$100,001$ ) and the service quality dimensions reliability ( $p=0.0188$ ) (Tables LIX & LX).

Dietitians making  $\geq \$100,001$  feel that reliability is more important to their customers than the dietitians who are in the middle and lower salary ranges. Dietitians making  $\geq \$100,001$  are perhaps older with more experience and therefore, know the importance of reliability which is providing the service at the promised time and performing the service right the first time.

TABLE LV

ANALYSIS OF VARIANCE FOR DIETITIAN'S AGE AND THEIR ATTITUDES  
TOWARD SERVICE QUALITY: TANGIBILITY

Source	DF	Mean Square	F Value	Pr>F
<u>Age</u>				
Tangibility	2	26.23	3.17	0.0439
Error	204	8.26		
Corrected Total	206			

TABLE LVI

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S AGE AND THEIR  
ATTITUDES TOWARD SERVICE QUALITY: TANGIBILITY

Tangibility	N	Mean (%)	Groupings <sup>1</sup>
<u>Age</u>			
≥56 years	22	21.1	A
36-55 years	152	20.19	AB
≤35 years	33	19.15	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE LVII

ANALYSIS OF VARIANCE FOR DIETITIAN'S AGE AND THEIR ATTITUDES  
TOWARD SERVICE QUALITY: RELIABILITY

Source	DF	Mean Square	F Value	Pr>F
<u>Age</u>				
Reliability	2	8.82	2.62	0.0754
Error	222	3.37		
Corrected Total	224			

TABLE LVIII

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S AGE AND THEIR  
ATTITUDES TOWARD SERVICE QUALITY: RELIABILITY

Reliability	N	Mean (%)	Groupings <sup>1</sup>
<u>Age</u>			
≥56 years	23	23.78	A
36-55 years	161	23.62	AB
≤35 years	41	22.92	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE LIX

ANALYSIS OF VARIANCE FOR DIETITIAN'S SALARY AND THEIR ATTITUDES  
TOWARD SERVICE QUALITY: RELIABILITY

Source	DF	Mean Square	F Value	Pr>F
<u>Salary</u>				
Reliability	2	13.05	4.04	0.0188
Error	237	3.23		
Corrected Total	239			

TABLE LX

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S SALARY AND THEIR  
ATTITUDES TOWARD SERVICE QUALITY: RELIABILITY

Reliability	N	Mean (%)	Groupings <sup>1</sup>
<u>Salary</u>			
≥\$100,001	19	24.58	A
\$55,001-\$100,000	97	23.62	B
<\$55,000	124	23.34	B

<sup>1</sup>Means with the same letter are not significantly different.

Output. Contrary to the researcher's expectations, ANOVA and Duncan's multiple range test did not indicate any significant relationship between output (product, service, service + product) and the service quality dimensions at  $p \leq .05$ . At  $p = 0.0543$  however, a significant association was found between output and the service quality dimension of assurance (Tables LXI & LXII). Dietitians delivering a service feel that assurance is more important (18.64) to their customers than those dietitians selling a product (17.82). These results do not reflect results of prior studies which may be due to the use of the SERVQUAL instrument. SERVQUAL was developed to determine service quality expectations of customers by customers. In this study, SERVQUAL was used to determine dietitian's perceptions of customer's service quality expectations. The researcher expected to find significant relationships between output and the dimensions of tangibility and reliability. In previous studies, reliability is considered to be the most important dimension for customers receiving a service whereas tangibility is valued most by those customers receiving a product.

Dietetic Practice Group. Analysis of variance and Duncan's multiple range test indicated a significant relationship between DPG (DBC, NE, or both) and the service quality dimensions tangibility ( $p = 0.0443$ ) and empathy ( $p = 0.0026$ ). Dietitians belonging to both DBC and NE believe that tangibility is less important to their customers (18.93) than dietitians belonging to NE (20.45) or DBC (20.29). Dietitians belonging to DBC ranked empathy less important (17.87) than those dietitians belonging to both



TABLE LXI

ANALYSIS OF VARIANCE FOR DIETITIAN'S OUTPUT AND THEIR ATTITUDES  
TOWARD SERVICE QUALITY: ASSURANCE

Source	DF	Mean Square	F Value	Pr>F
<u>Output</u>				
Assurance	2	12.04	2.95	0.0543
Error	227	4.08		
Corrected Total	229			

TABLE LXII

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S OUTPUT AND THEIR  
ATTITUDES TOWARD SERVICE QUALITY: ASSURANCE

Assurance	N	Mean (%)	Groupings <sup>1</sup>
<u>Output</u>			
Service	106	18.64	A
Service + Product	90	18.09	AB
Product	34	17.82	B

<sup>1</sup>Means with the same letter are not significantly different

groups (18.81) and NE (18.76) (Tables LXIII to LXVI). DBC members have the public at large as customers whereas NE see their clients on a 1:1 basis therefore, NE perceive empathy as more important.

T-tests (Appendix F) were used to determine associations between the 5 dimensions of service quality: tangibility, reliability, responsiveness, assurance, and empathy and the personal/institutional variables: gender and highest degree. The only significant associations found were between gender and the 2 dimensions: reliability and assurance.

Gender. Females perceive reliability to be significantly ( $p=0.0105$ ) more important to customers than males do. Males on the other hand perceive assurance to be significantly ( $p=0.0467$ ) more important to customers than females do. These significant associations could be due to the unequal distribution of male and female respondents.

Hypothesis two stated: There will be no significant association between the attitude of service quality scores and selected personal/institutional demographic variables: gender, age, degree, output, salary, and practice group. As revealed in Table LIV, significant differences were observed between service quality attitudes and gender, age, output, and practice group. Therefore, the researcher rejected the null hypothesis for gender, age, output, and practice group and failed to reject the second null hypothesis for degree and salary.

TABLE LXIII

ANALYSIS OF VARIANCE FOR DIETITIAN'S DPG AND THEIR ATTITUDES  
TOWARD SERVICE QUALITY: TANGIBILITY

Source	DF	Mean Square	F Value	Pr>F
<u>DPG Group</u>				
Tangibility	2	26.66	3.16	0.0443
Error	217	8.43		
Corrected Total	219			

TABLE LXIV

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S DPG AND THEIR  
ATTITUDES TOWARD SERVICE QUALITY: TANGIBILITY

Tangibility	N	Mean (%)	Groupings <sup>1</sup>
<u>DPG Group</u>			
NE	76	20.45	A
DBC	114	20.29	A
Both	30	18.93	B

<sup>1</sup>Means with the same letter are not significantly different.

TABLE LXV

ANALYSIS OF VARIANCE FOR DIETITIAN'S DPG AND THEIR ATTITUDES  
TOWARD SERVICE QUALITY: EMPATHY

Source	DF	Mean Square	F Value	Pr>F
<u>DPG Group</u>				
Empathy	2	24.15	6.12	0.0026
Error	231	3.95		
Corrected Total	233			

TABLE LXVI

DUNCAN'S MULTIPLE RANGE TEST FOR DIETITIAN'S DPG AND THEIR  
ATTITUDES TOWARD SERVICE QUALITY: EMPATHY

Empathy	N	Mean (%)	Groupings <sup>1</sup>
<u>DPG Group</u>			
Both	31	18.81	A
NE	84	18.76	A
DBC	119	17.87	B

<sup>1</sup>Means with the same letter are not significantly different.

## Professional Development Needs

### Testing of H<sub>3</sub>

H<sub>3</sub>: There will be no significant association between the professional development needs and selected personal/institutional demographic variables: gender, age, degree, output, salary, and practice group.

Chi Square analyses (Appendix E, pg. 204) were determined for the 11 professional development needs of DBC and NE dietitians (Questionnaire, Appendix C). Additional needs listed by respondents are also included in Appendix G. These analyses were examined for relationship with personal/institutional variables gender, age, highest degree of education, salary range, output of organization, and dietetic practice group.

### Professional Development Need: Management Skills.

Dietitians  $\geq 56$  years had a significantly ( $p=0.0107$ ) lower need for management skills than dietitians in the middle and lower age range (Table LXVII). The majority of respondents  $\geq 56$  years indicate a limited need or no need for management skills whereas the majority of respondents 36-55 years and  $\leq 35$  years have a moderate or limited need

Respondents with a bachelors degree have a significantly ( $p=0.0098$ ) higher need for management skills than those respondents with a graduate degree (Table LXVII). Fifty-seven percent of the bachelor degree respondents indicate an urgent or moderate need for management compared with 41% of graduate degree respondents.

TABLE LXVII

CHI SQUARE VALUES ON ASSOCIATION BETWEEN PROFESSIONAL DEVELOPMENT NEEDS AND DEMOGRAPHICS

Demographics	Communication Skills	Management Skills	Marketing Skills	Sales Skills	Networking Skills
<u>Gender</u>					
X <sup>2</sup>	-	-	-	-	-
df	-	-	-	-	-
P	-	-	-	-	-
<u>Age:</u>					
X <sup>2</sup>	-	16.648	14.482	-	14.528
df	-	6	6	-	6
P	-	0.0107	0.0247	-	0.0243
<u>Degree:</u>					
X <sup>2</sup>	-	11.381	-	-	-
df	-	3	-	-	-
p	-	0.0098	-	-	-
<u>Salary:</u>					
X <sup>2</sup>	-	-	-	-	-
df	-	-	-	-	-
p	-	-	-	-	-
<u>Output:</u>					
X <sup>2</sup>	-	-	-	-	-
df	-	-	-	-	-
p	-	-	-	-	-
<u>Group:</u>					
X <sup>2</sup>	-	14.393	-	-	-
df	-	6	-	-	-
p	-	0.0255	-	-	-

TABLE LXVII

CHI SQUARE VALUES ON ASSOCIATION BETWEEN PROFESSIONAL  
DEVELOPMENT NEEDS AND DEMOGRAPHICS CONTINUED

Demographics	Financial Management Skills	Personnel Management Skills	Negotiation Skills	Computer Skills	Public Relations Skills	Organizational Politics
<u>Gender</u>						
X <sup>2</sup>	19.705	-	-	-	-	-
df	6	-	-	-	-	-
p	0.0031	-	-	-	-	-
<u>Age:</u>						
X <sup>2</sup>	-	-	-	-	15.844	-
df	-	-	-	-	6	-
p	-	-	-	-	0.0146	-
<u>Degree:</u>						
X <sup>2</sup>	-	-	-	-	-	-
df	-	-	-	-	-	-
p	-	-	-	-	-	-
<u>Salary:</u>						
X <sup>2</sup>	-	-	-	-	-	-
df	-	-	-	-	-	-
p	-	-	-	-	-	-
<u>Output:</u>						
X <sup>2</sup>	-	-	-	-	-	-
df	-	-	-	-	-	-
p	-	-	-	-	-	-
<u>Group:</u>						
X <sup>2</sup>	-	22.887	15.288	-	-	-
df	-	6	6	-	-	-
p	-	0.0008	0.0181	-	-	-

The majority of all respondents indicate a moderate or limited need for management skills. Significantly ( $p=0.0255$ ) more members of NE indicate having no need for management skills than members of DBC or both groups (Table LXVII).

Professional Development Need: Marketing Skills.

A larger percent of dietitians  $\leq 35$  years and 36-55 years have a moderate need for marketing skills rather than an urgent need whereas the largest percentage of dietitians  $\geq 56$  years indicate an urgent need for marketing skills. Older dietitians may have been trained as clinical dietitians and did not have courses in marketing. Significantly ( $p=0.0247$ ) fewer dietitians  $\geq 56$  years (29%) indicate their marketing skills need to be moderate compared with 46% of respondents 36-55 years and 48%  $\leq 35$  years (Table LXVII).

Professional Development Need: Networking Skills.

Significantly ( $p=0.0243$ ) more dietitians  $\geq 56$  years have a limited or no need for networking skills (Table LXVII). These dietitians are older, have worked longer therefore, have more experience with networking than the younger dietitians. The majority (76%) of dietitians  $\leq 35$  years indicate an urgent or moderate need for networking skills whereas the majority (74%) of respondents 35-55 years indicate a moderate or limited need.



Professional Development Need: Financial Management Skills.

Younger dietitians ( $\leq 35$  years) have a significantly ( $p=0.0031$ ) more urgent need for financial management skills than dietitians  $\geq 36$  years (Table LXVII). A greater percentage of dietitians  $\geq 56$  years (33%) indicate no need for financial management skills compared with 10% of dietitians 36-55 years and 10%  $\leq 35$  years.

Professional Development Need: Personnel Management Skills.

Members of NE have a significantly ( $p=0.0008$ ) lower need for personnel management skills than members of DBC or both practice groups (Table LXVII). Few respondents ( $<10\%$ ) in NE, DBC and both groups indicate an urgent need for this skill. A larger percent of DBC members are in moderate need of personnel management skills than members of NE and both practice groups.

Professional Development Need: Negotiation Skills.

Significantly ( $p=0.0181$ ) more dietitians selling a product indicate a greater need for negotiation skills than dietitians delivering a service or a service-product bundle (Table LXVII). The majority of dietitians selling a product (85%) have an urgent or moderate need whereas 63% of respondents delivering a service and 68% with a service + product consider their need to be urgent or moderate.

Professional Development Need: Public Relations Skills.

Significantly ( $p=0.0146$ ) more dietitians  $\geq 56$  years indicate no need for public relations (PR) skills than dietitians in the younger age ranges (Table LXVII). Dietitians

≤35 and 36-55 years have a greater tendency to indicate a moderate or limited need for PR skills.

No significant association was found at  $p < .05$  between personal/institutional variables and the need for the following skills: communication skills, sales skills, computer skills or organizational politics skills.

Hypothesis three stated: There will be no significant association between the professional development needs and selected personal/institutional demographic variables: gender, age, degree, output, salary, and practice group. As Table LXVII indicates, significant differences exist between professional development needs and gender, age, degree, and practice group. The researcher rejected the third null hypothesis for gender, age, degree, and practice group but failed to reject the hypothesis for salary and output.

### **Continuing Education Methods**

#### **Testing of H<sub>4</sub>**

H<sub>4</sub>: There will be no significant association between the continuing education methods and selected personal/institutional demographic variables: gender, age, degree, output, salary, and practice group.

Chi Square analyses (Appendix E, pg. 206) were determined for the 10 continuing education methods of DBC and NE dietitians (Questionnaire, Appendix C). These analyses examined the relationship of education methods with personal/institutional variables gender, age, highest degree of education, salary range, output of organization, and dietetic practice group.

Method: Seminars by Employer.

Practice group was the only variable having a significant association at  $p \leq .05$  with seminars by employer. The highest percent of respondents in all three groups would use seminars by employer for continuing education. Significantly ( $p=0.0079$ ) more respondents belonging to both groups (26%) and DBC (24%) prefer this method compared with only 8% of NE (Table LXVIII).

Method: Workshops by Employer.

The majority of respondents with a bachelors degree (75%) and graduate degree (58%) would use workshops by employer. A significantly ( $p=0.0483$ ) greater number of graduate respondents, however, would not use this method for continuing education compared with respondents possessing a bachelors degree (Table LXVIII).

The majority of respondents in both practice groups (59%), DBC (65%) and NE (66%) would use workshops by employer. Significantly ( $p=0.0076$ ) more members of NE (24%) would not use this method compared with 8% of DBC members and 14% of members belonging to both groups (Table LXVIII).

TABLE LXVIII

CHI SQUARE VALUES ON ASSOCIATION BETWEEN CONTINUING  
EDUCATION METHODS AND DEMOGRAPHICS

Demographics	Seminars by Employer	Workshops by Employer	Workshops by Professional Organizations	Seminars by Professional Organizations	Audio Tapes
<u>Gender</u>					
X <sup>2</sup>	-	-	-	-	-
df	-	-	-	-	-
p	-	-	-	-	-
<u>Age:</u>					
X <sup>2</sup>	-	-	13.478	12.755	-
df	-	-	4	4	-
p	-	-	0.0092	0.0125	-
<u>Degree:</u>					
X <sup>2</sup>	-	6.063	-	-	-
df	-	2	-	-	-
p	-	0.0483	-	-	-
<u>Salary:</u>					
X <sup>2</sup>	-	-	-	-	-
df	-	-	-	-	-
p	-	-	-	-	-
<u>Output:</u>					
X <sup>2</sup>	-	-	-	-	-
df	-	-	-	-	-
p	-	-	-	-	-
<u>Group:</u>					
X <sup>2</sup>	13.814	13.915	-	-	-
df	4	4	-	-	-
p	0.0079	0.0076	-	-	-

TABLE LXVIII

CHI SQUARE VALUES ON ASSOCIATION BETWEEN CONTINUING  
EDUCATION METHODS AND DEMOGRAPHICS

Demographics	Books	Graduate Courses in Classroom	Graduate Course via Internet	Continuing Education Articles	Continuing Education via Internet
<u>Gender</u>					
X <sup>2</sup>	6.025	13.527	-	-	-
df	2	4	-	-	-
p	0.0492	0.0090	-	-	-
<u>Age:</u>					
X <sup>2</sup>	-	-	-	-	-
df	-	-	-	-	-
p	-	-	-	-	-
<u>Degree:</u>					
X <sup>2</sup>	-	-	6.234	-	-
df	-	-	2	-	-
p	-	-	0.0443	-	-
<u>Salary:</u>					
X <sup>2</sup>	-	-	9.618	10.193	-
df	-	-	4	4	-
p	-	-	0.0474	0.0373	-
<u>Output:</u>					
X <sup>2</sup>	-	-	-	-	-
df	-	-	-	-	-
p	-	-	-	-	-
<u>Group:</u>					
X <sup>2</sup>	-	-	-	-	-
df	-	-	-	-	-
p	-	-	-	-	-

Method: Workshops sponsored by professional organizations.

Even though the majority of respondents in all 3 age groups either strongly prefer or would use workshops sponsored by professional organizations, significantly ( $p=0.0092$ ) more dietitians  $\leq 35$  years prefer this method (Table LXVIII). The response rate for those indicating they would not use this method is  $<5\%$  in all three age groups.

Method: Seminars sponsored by professional organizations.

Significantly ( $p=0.0125$ ) more respondents younger than 35 years strongly prefer seminars sponsored by professional organizations compared with middle aged and older respondents (Table LXVIII). Of the three age groups, 5% of those  $\leq 35$  years, 0% of the 36-55 group, and 4% of those  $\geq 56$  years would not use this continuing education method.

Method: Books.

Gender was the only variable having a significant association with books. Significantly ( $p=0.0492$ ) more males (50%) would not use books for continuing education than females (23%) (Table LXVIII). Sixty-seven percent of females would use books whereas only 25% of males indicated they would use books.

Method: Graduate courses in classroom.

A significant association was found between age range and graduate courses in classroom. A significantly ( $p=0.0090$ ) larger percentage of respondents  $\geq 56$  years would not use graduate courses in classroom as well as strongly prefer this method (Table LXVIII). The relationship between age and graduate courses in classroom is linearly

increasing for respondents  $\leq 35$  and 36-55 years however, the majority of respondents  $\geq 56$  years either would not use (78%) or strongly prefer (17%) this method.

Method: Graduate course via Internet.

While 55% of respondents with bachelors degree and 45% with graduate degrees will use graduate courses via the Internet, significantly ( $p=0.0443$ ) more graduate degree respondents indicated they would not use this method (Table LXVIII). Forty-five percent of respondents with graduate degree will not use courses via Internet compared with only 29% of respondents with a bachelors degree.

Significantly ( $p=0.0474$ ) fewer respondents earning  $\leq \$55,000$  (30%) indicated they would not use graduate courses via Internet than respondents earning \$55,000-\$100,000 (48%) and  $\geq \$100,000$  (56%) (Table LXVIII). Fifty-five percent of respondents in the lower salary range, 44% in the middle range and only 31% in the higher range indicated they would use this method to obtain continuing education.

Method: Continuing education articles in JADA or other.

Dietitians earning  $> \$100,000$  have a significantly ( $p=0.0373$ ) greater tendency to strongly prefer articles in JADA or other journals than those dietitians in the lower 2 salary ranges (Table LXVIII). Of the respondents, 57% earning  $< \$55,000$ , 54% earning \$55,001-\$100,000 and 41% earning  $> \$100,001$  indicate they would use this method for continuing education.

No significant relationship at  $p \leq .05$  exists between institutional/personal variables and continuing education methods of: audio Tapes or courses via Internet (Table LXVIII).

The only additional method listed was continuing education via telephone. Only one respondent indicated this method.

Hypothesis four states: There will be no significant association between the continuing education methods and selected personal/institutional demographic variables: gender, age, degree, output, salary, and practice group. As presented in Table LXVIII, significant associations are found between continuing education methods and gender, age, degree, salary, and practice group. The researcher rejects the fourth null hypothesis for gender, age, degree, salary, and practice group but fails to reject the hypothesis for output.



## CHAPTER V

### SUMMARY, RECOMMENDATIONS, AND IMPLICATIONS

#### Summary

This study investigated non-traditional dietitians' services marketing skills, service quality attitudes, professional development needs and preferred methods for continuing education. The specific objectives determined the non-traditional dietitians' perceptions of service marketing skills, the non-traditional dietitians' attitude towards service quality and what areas of professional development are needed by non-traditional dietitians and how they would prefer to obtain this knowledge. As a result of these objectives, 4 hypotheses were formulated. Survey questionnaires were sent to 248 NE and 352 DBC randomly selected members who work in the following employment settings: food manufacture/distributor/retailer; private practice, primarily individual client counseling; consultation, primarily to health care facilities; consultation, primarily to other organizations/industries/media; other for profit organization (includes food manufactures/distributors/retailers/agencies); and other nonprofit organizations.. A total of 600 individuals were sent questionnaires.

The questionnaire had four sections: demographic information (personal and institutional), perception of services marketing skills in a 3-point Likert scale format, attitudes of service quality in a 5-point Likert scale format and a section for professional

development needs/continuing education methods in a Likert scale format. Data obtained from 248 questionnaires (response rate 41.3%) were analyzed using t-test, Chi-square, analysis of variance and Duncan's multiple range test.

### Personal Variables

Respondents were predominantly white, female and 36-55 years of age. Of the respondents, 64.2% reported having a graduate degree.

### Institutional Variables

The predominant number (N=95, 41%) of dietitians in this study have between 11-20 years of experience as a registered dietitian while a little over 60% have been working in their current specialty area for less than 10 years. The majority of respondents belonging to DBC and NE and to DBC only (81% and 90% respectively) are employed full-time compared with only 43% of NE members. The three most dominant types of organizations where non-traditional dietitians are employed are: food companies, consulting companies and self employed/private practice. Members of both groups and DBC are mostly employed by organizations that operate at nation and world-wide levels whereas 50% NE members work at state-wide levels.

Major end-product varied in relation to practice group membership. While the majority of NE members are delivering a service and DBC members are delivering a service + product, those who belong to DBC and NE are delivering either a service, product or service-product bundle. Non-traditional dietitians are performing a variety of roles, however, the largest percentage (19%) of respondents are performing upper administrative duties followed by consultants (16%) and managers (15%).

While 20 respondents indicate a salary of  $\geq$ \$100,000, 51% of respondents are earning  $\leq$ \$55,000. Of the 248 respondents, only 75 (30%) indicate spending  $<$ 25% of their time on marketing/service quality. One hundred and three (42%) respondents indicate 26-75% of their job is marketing/service quality while 70 (28%) respondents indicate  $\geq$ 76% of their job pertains to marketing/service quality. Three fourths of the survey participants obtained their marketing skills via career experience.

### Services Marketing Skills

Of the 8 marketing Ps and marketing strategy (Chapter II, pg. 15), respondents perceive their knowledge to be greatest for marketing strategy and product. Over 80% of respondents indicate having more than adequate or adequate knowledge concerning the basic knowledge of customers and purchasing decisions of customers (2 of the 4 marketing strategy components). At least 70% of respondents perceive their knowledge of all 3 product components to be adequate or more than adequate.

Over 65% of respondents have adequate or more than adequate knowledge concerning partnering. Respondents with significantly lower mean scores for partnering are those earning  $\leq$ \$55,000,  $\leq$ 35 years old, delivering a service and belonging to NE.

Of all respondents, 38-43% indicate limited knowledge for the 3 components of price. Significantly lower scores for price were perceived by those earning  $\leq$ \$55,000,  $\leq$ 35 years old, graduate degree recipients, and members of NE.

For the 2 promotion components, 32% of respondents indicate limited knowledge for effective promotion strategy, while 47% have limited knowledge of using electronic

multimedia in promotions. Respondents earning  $\leq$ \$55,000 and members of NE had significantly lower mean scores for promotion.

Of the respondents, 42-52% indicate their knowledge concerning the 3 components of people to be limited. Respondents with lower mean scores are those earning  $\leq$ \$55,000, deliver a service, members of NE and graduate degree recipients.

Nearly  $\frac{1}{2}$  of respondents indicate limited knowledge for place (54%), position (47%), and packaging (52%). Dietitians earning  $\leq$ \$55,000 have significantly lower scores for place and packaging while those delivering a service have lower mean scores for position and packaging. Members of NE have significantly lower scores for all three, place, position and packaging.

Hypothesis one stated: There will be no significant association between the perceptions of marketing skills of non-traditional dietitians and selected personal/institutional demographic variables: gender, age, degree, output, salary, and practice group. As seen in Table I, significant differences were observed between services marketing skills and gender, age, degree, output, salary, and practice group. Therefore, the researcher rejected this null hypothesis.

#### Attitudes Toward Service Quality

Of the 5 service quality dimensions (Chapter II, pg. 24), survey participants perceive reliability to be the most important dimension to customers. This finding supports previous service quality research (Chapter II, pg. 24). An average of 74.2% of respondents indicate “very important” for each of the 5 components of reliability. Those

respondents having the highest mean scores for reliability are female, earning  $\geq$ \$100,001, and  $\geq$ 56 years.

Assurance and empathy are perceived to be the next 2 important dimensions of service quality. Approximately 65% of respondents perceive the four components for assurance and empathy to be “very important”. Survey participants with the highest mean scores for assurance are male and those delivering a service. Members of DBC have significantly lower scores for empathy.

Responsiveness is the fourth important dimension of service quality. The three components of responsiveness are perceived to be “very important” by an average of 61% of respondents.

Of the 5 service quality dimensions, dietitians perceive tangibility to be the least important to their customers. An average of 39% of survey participants indicate “very important” for the 5 components of tangibility. Fifty-two percent of respondents perceive modern-looking equipment to be “not so” or “somewhat” important to their customers. Dietitians  $\geq$ 56 years had significantly higher mean scores for tangibility.

Hypothesis two stated: There will be no significant association between the attitudes toward service quality scores and selected personal/institutional demographic variables: gender, age, degree, output, salary, and practice group. As revealed in Table LIV, significant differences were observed between service quality attitudes and gender, age, output, and practice group. Therefore, the researcher rejected the null hypothesis for gender, age, output, and practice group and failed to reject the second null hypothesis for degree and salary.

### Professional Development Needs

Over half of the respondents indicate an urgent or moderate need for marketing (71%), sales (61%), networking (57%), financial management (65%), negotiation (69%), computer (60%), public relations (58%) and organizational politics (52%) skills. Of these respondents, 42% of dietitians >56 years indicated an urgent need for marketing skills. The majority of dietitians ≤35 years indicate an urgent or moderate need for networking skills and an urgent need for financial management skills. Of the dietitians delivering a product, 85% perceive their need for negotiation skills to be urgent or moderate. Sixty-three percent of dietitians delivering a service and 68% of dietitians delivering a service-product bundle also indicate a moderate or urgent need for negotiation skills.

Hypothesis three stated: There will be no significant association between the professional development needs and selected personal/institutional demographic variables: gender, age, degree, output, salary, and practice group. As Table LXVII indicates, significant differences exist between professional development needs and gender, age, degree, and practice group. The researcher rejected the third null hypothesis for gender, age, degree, and practice group but failed to reject the hypothesis for salary and output.

### Continuing Education Methods

The two most preferred methods by respondents for continuing education are workshops and seminars sponsored by professional organizations. Approximately half of the respondents indicate they would not use audio tapes or graduate courses in classrooms for continuing education.

Hypothesis four states: There will be no significant association between the continuing education methods and selected personal/institutional demographic variables: gender, age, degree, output, salary, and practice group. As presented in Table LXVIII, significant associations are found between continuing education methods and gender, age, degree, salary, and practice group. The researcher rejects the fourth null hypothesis for gender, age, degree, salary, and practice group but fails to reject the hypothesis for output.

## Recommendations

### Recommendations for Future Studies

Based on the results of this study, the following recommendations are offered for future studies. Subjects could be expanded by including more practice groups and have a larger population size, or survey a random sample of all dietitians not just those belonging to certain practice groups. Marketing skills and service quality attitudes of all dietitians need to be discovered. The use of electronic media, distance education and virtual classrooms to teach services marketing skills need to be explored. Another suggestion for

further research could be to have respondents rank the importance of the service quality dimensions.

One way to improve response rate might be to change the time of the study. Surveys were sent out in early August which is generally a time for vacation. Response rate may also be improved by shortening the survey to include only services marketing skills and attitudes towards service quality or sending 2 different instruments.

#### Recommendations for Dietetic Practitioners

In the new millennium, dietitians are expected to be multiskilled. With the new Professional Development Portfolio requirements recently established by ADA along with the multiskilled expectations, it is crucial for dietetic professionals to seek and acquire skills specific to marketing, networking, negotiation, and financial management via workshops and seminars sponsored by ADA or other professional organizations, college courses, or courses via internet.

As competition becomes more intense, service quality becomes imperative. In order to retain clients and increase sales, dietetic professionals are going to have to go beyond customer satisfaction and develop customer loyalty. Dietitians need to seek out their customer's expectations and work to exceed these expectations.

#### Recommendations for ADA

The two most preferred methods for continuing education by the respondents in this study are workshops and seminars sponsored by professional organizations. By ADA providing workshops and seminars on marketing, networking, negotiation and



financial management skills, dietetic professionals could enhance their knowledge in these areas.

### Implications

One implication of research findings is that now, the professional organization (ADA) and the different practice groups have some guidance for setting priorities when planning workshops and seminars for enhancing their member's management skills. Priority should be given to those 8 professional development needs indicated by over half of the respondents to be of urgent or moderate need.

The second implication of these findings is that the Didactic Programs in Dietetics (DPD) and Supervised Practice Programs have now some insight in selecting the competencies from the ADA standard requirements for establishing the curriculum for their programs. With the great emphasis being placed on the need for marketing skills and knowledge of service quality, dietetic students need to begin with marketing and service quality principles and applications in the undergraduate program. Courses pertaining specifically to marketing and service quality should be taught and required for all DPD students. The focus on marketing and service quality should begin in the undergraduate program followed by more applied implementation, synthesis, and evaluation in the supervised practice program. The competencies for the supervised practice programs should include more or all of the 7 BE competencies: perform organizational and strategic planning; develop business or operating plan; supervise procurement of resources; manage the integration of financial, human, physical and material resources; supervise organizational change process; supervise coordination of

services; and supervise marketing functions. Dietetic interns would also benefit from spending part of their rotations in business/industry, and other uncharted settings where future practitioners can make a difference.

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APPENDICES

APPENDIX A

APPROVAL FORM FROM OKLAHOMA STATE  
UNIVERSITY INSTITUTIONAL REVIEW BOARD



Oklahoma State University  
Institutional Review Board

Protocol Expires: 7/26/01

Date: Thursday, July 27, 2000

IRB Application No: HE013

Proposal Title: SERVICE MARKETING SKILLS, SERVICE QUALITY ATTITUDE AND PROFESSIONAL  
DEVELOPMENT NEEDS OF NON-TRADITIONAL DIETITIANS

Principal  
Investigator(s)

Mandy Caid-Jefferson  
311 HES  
Stillwater, OK 74078

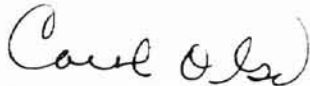
Lea Ebro  
425 HES  
Stillwater, OK 74078

Reviewed and  
Processed as: Exempt

Approval Status Recommended by Reviewer(s) Approved

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Signature



Carol Olson, Director of University Research Compliance

Thursday, July 27, 2000

Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modifications to the research project approved by the IRB must be submitted for approval with the advisor's signature. The IRB office MUST be notified in writing when a project is complete. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

APPENDIX B  
SURVEY DRAFT/PILOT STUDY



Department of Nutritional Sciences  
425 Human Environmental Sciences  
Stillwater, Oklahoma 74078-6141  
405-744-5040, Fax 405-744-7113  
Email [nutrscl@okstate.edu](mailto:nutrscl@okstate.edu)  
<http://www.okstate.edu/hes/nsci/>

July 11, 2000

Dear :

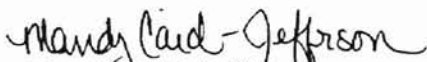
You have been chosen to critique the cover letter and survey instrument—Service Marketing Skills, Service Quality Attitude and Professional Development Needs/Methods of Non-Traditional Dietitians. Your evaluation of this instrument is an important part of the research process to increase the validity and rate of response to the questionnaire.


All responses to the questionnaire will be held in strict confidence. The information obtained from your critique will be used to evaluate the quality of the instrument and will not be included in the final results of this study.

Please complete the enclosed questionnaire and the critique form and return them in the self-addressed stamped envelope by July 21, 2000. Contact me should you have any questions regarding the cover letter, questionnaire, or critique form.

Your assistance is greatly appreciated

Sincerely,

  
Mandy Caid-Jefferson  
Masters Candidate (RD eligible)  
Oklahoma State University  
Ph. (405) 377-2734

  
Lea L. Ebro, PhD, RD, LD  
Professor & Dietetic Internship Director  
Major Adviser  
Ph. (405) 744-8294

**This letter was sent to 12 dietitians working in Business and Industry**

VALIDATION OF SERVICE MARKETING SKILLS, ATTITUDES TOWARD  
SERVICE QUALITY AND PROFESSIONAL DEVELOPMENT NEEDS  
AND METHODS OF NON-TRADITIONAL DIETITIANS

Please review this cover letter and questionnaire for clarity and ease of understanding.

Check the response which best describes your opinion.

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Uncertain</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
The instructions are clear and easy to follow.					
The organization of the questionnaire follows a logical sequence.					
The rating scales are appropriate for questions.					
The wording of each question is clear and easy to understand.					
The length of the questionnaire is appropriate.					

Amount of time required for survey completion? \_\_\_\_\_ min.

Please provide any suggestions which would improve the content of the cover letter and questionnaire.

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**Thank you for your assistance.**



Department of Nutritional Sciences  
425 Human Environmental Sciences  
Stillwater, Oklahoma 74078-6141  
405-744-5040, Fax 405-744-7113  
Email [nutrsci-i@okstate.edu](mailto:nutrsci-i@okstate.edu)  
<http://www.okstate.edu/hes/nsci/>

July 31, 2000

**DRAFT**

Dear DBC Practice Group Member/NE Practice Group Member

I am a Master's candidate in the department of Nutritional Sciences, currently conducting the research for my thesis. I need your help in a project to determine the services marketing skills, service quality attitude and professional development needs of dietitians working in a non-traditional setting.

You have been randomly selected as a participant in this survey therefore your cooperation would be greatly appreciated. The random selection was performed by ADA based on your dietetic practice group membership. Of course, replies will be kept completely confidential and used only in tabulation (composite results). The abstract of my results will be mailed to the president of your dietetic practice group for publication in your newsletter.

This survey will require about twenty minutes of your time. You can return it to me using the stamped reply envelope provided, on or before August 11, 2000. You may contact Sharon Bacher, IRB executive secretary, 203 Whitehurst, Oklahoma State University, Stillwater, OK 74078; telephone (405) 744-5700 with further questions concerning this study.

Thank you for your participation and cooperation.

Sincerely,

  
Mandy Caird-Jefferson  
Master's Candidate (RD eligible)  
Ph. (405) 377-2734  
e-mail: [cmandy@okstate.edu](mailto:cmandy@okstate.edu)

  
Lea L. Ebro, Ph.D, RD/LD  
Professor & Dietetic Internship Director  
Major Advisor  
Ph. (405) 744-8294  
e-mail: [gobucks@okstate.edu](mailto:gobucks@okstate.edu)

Attachment

**PART I: SERVICE MARKETING KNOWLEDGE/SKILLS**

INSTRUCTIONS: Listed are various services marketing skills. Please check [√] your knowledge/skill level after each statement in the appropriate column.

Service Marketing Skills	Degree of Knowledge		
	Limited	Adequate	More Than Adequate
Basic knowledge of customers			
Purchasing decisions of customers			
Developing a strategic segmentation			
Defining a "value proposition" or promise to the customer			
Developing new products and services			
Managing product mix			
Ensuring competitive, consistent products			
Strategic price management			
Pricing products to maximize return			
Maximizing realized net price for each transaction			
Developing and executing an effective channel strategy			
Developing and executing an effective partnering strategy			
Developing effective partnerships with customers and suppliers			
Developing and executing an effective sales force strategy			
Provide sales force with effective support			
Ensuring an effective and well-trained sales force			
Developing and executing an effective promotion strategy			
Using electronic multimedia in promotions			
Developing and executing an effective brand strategy			
Developing and executing an effective packaging strategy			

**PART II: ATTITUDE TOWARD SERVICE QUALITY**

**INSTRUCTIONS:** In your opinion, how important are the following service quality expectations to your customers? Check [✓] the appropriate column after each statement.

<b>Expectations</b>	<b>Not Sure</b>	<b>Not So Important</b>	<b>Somewhat Important</b>	<b>Important</b>	<b>Very Important</b>
Modern-looking equipment					
Physical facilities will be visually appealing					
Employees will be neat					
Associated materials will be visually appealing					
Promise to do something at a certain time					
Show sincere interest in solving problem					
Will perform the service right the first time					
Will provide service at the promised time					
Error-free records					
Customers told exactly when services will be performed					
Prompt service will be given					
Employees will always be willing to help					
Employees will never be too busy to respond					
Will instill confidence in customers					
Customers will feel safe in their care					
Consistent courtesy with customers					
Knowledge to answer questions					
Give customer individual attention					
Convenient hours					
Give customers personal attention					
Have the customer's best interest at heart					
Understand the specific needs of their customers					

**PART III: PROFESSIONAL DEVELOPMENT NEEDS**

**INSTRUCTIONS:** Rate your need for the continuing education and professional development for each of the following skills. Check [✓] your level of need after each skill in the appropriate column.

<b>Skills</b>	<b>Urgent Need</b>	<b>Moderate Need</b>	<b>Limited Need</b>	<b>No Need</b>
Communication Skills				
Management Skills				
Marketing Skills				
Sales Skills				
Networking Skills				
Financial Management Skills				
Personnel Management Skills				
Negotiation Skills				
Computer Skills				
Public Relations Skills				
Organizational Politics				

Others, Please Specify:


**CONTINUING EDUCATION METHOD**

**INSTRUCTIONS:** Check [✓] which Continuing Education Method you would use to obtain the skills above. Please list additional methods you currently use

<b>Continuing Education Method</b>	<b>Strongly Prefer</b>	<b>Would Use</b>	<b>Would Not Use</b>
Seminars by Employer			
Workshops by Employer			
Workshops sponsored by Professional Organizations			
Seminars sponsored by Professional Organizations			
Audio Tapes			
Books			
Graduate Courses in classroom			
Graduate Course via Internet			
Continuing Education articles in Journal of the American Dietetics Association or other			



## PART IV: DEMOGRAPHIC INFORMATION

INSTRUCTIONS: Please check the appropriate response or insert an answer in the space provided.

### Part A: Personal Variables

1. Please indicate your gender:  
 Male  
 Female
  
2. Please indicate your current age range:  
 under 25  
 25-35  
 36-45  
 46-55  
 over 55
  
3. Indicate your race/ethnicity:  
 White (Not of Hispanic Origin)  
 Hispanic  
 American Indian  
 Black (Not of Hispanic Origin)  
 Asian or Pacific Islander  
 Alaskan or Hawaiian Native
  
4. Indicate the highest degree that you have received:  
 B.S./B.A.  
 M.S./MPH  
 M.B.A.  
 Ph.D./Ed.D

### Part B: Institutional Variables

5. Years of experience as a Registered Dietitian: \_\_\_\_\_ years
  
6. Years of experience in specialty area: \_\_\_\_\_ years
  
7. Please indicate employment status:  
 Full Time Employment (35 hours or more)  
 Part Time (less than 35 hours per week)

8. Check the category which best describes the organization in which you are employed:

- Food Company
- Health Care Corporation
- Pharmaceutical Company
- Media (TV/Print/Electronic)
- Human Resources
- Marketing
- Other (please specify): \_\_\_\_\_

9. Indicate the status of your business/industry/agency:

- state-wide
- nation-wide
- world-wide

10. Indicate the major output/end-product of your organization's service:

- tangible possession (product)
- an intangible (service)
- service-product bundle (service + product)

11. Job title: \_\_\_\_\_

12. Please indicate your salary range:

- less than \$30,000
- \$30,001-40,000
- \$40,001-50,000
- \$50,001-60,000
- \$60,001-70,000
- more than \$70,001

13. Indicate how you obtained marketing skills (mark all that apply):

- College Courses
- Workshops
- Self-study
- Internet Courses
- ADA Skills Workshop
- Other (please specify): \_\_\_\_\_

14. Percentage of your job that can be considered marketing/service quality: \_\_\_\_\_%

15. You were selected for this survey based on your membership to the Dietitians in Business and Communications practice group. Are you also a member of Nutrition Entrepreneurs? (This question was worded appropriately according to practice group).

- Yes
- No

**Thank you for your participation and support.**

## **Pilot Study Suggestions/Comments**

### Part I. Services Marketing

- Many dietitians skirt the “customer” issue, use “client”
- When only product is used, add services
- Too long
- “Service” is confusing
- Do not know what is meant by “service”
- May need to omit the work “service” and just use marketing skills
- Add the skill: Developing and executing an integrated marketing communications strategy
- Include “consumers” after the word customers

### Part II. Attitude Toward Service Quality

- Some expectations are not applicable

### Part III. Professional Development Needs

- Easy to understand
- Appropriate no matter what your profession is

### Part III. Continuing Education

- Seminars and workshops are the same thing
- Add continuing education (not graduate) via internet

### Part IV. Personal Variables

- Recommend increasing age range

### Part IV. Institutional Variables

- Change #6 to: Years of experience in current specialty area
- #8: Need to distinguish between food company manufacturer and retail & add consulting company
- #12: Include additional ranges, go higher-top category is higher than \$125,000
- #13: Add career experience, on the job training and osmosis

### Letter

- Define services
- Change “president” of DPG to “chair”
- Tell when results will be mailed to chair of DPG
- What is the meaning of “non-traditional”?
- Looks fine

Time for Survey Completion

- 15 minutes
- 10 minutes
- 10 minutes
- 15 minutes
- 15 minutes
- 11 minutes
- 10 minutes

Other Suggestions/Comments:

- Overall, looks fine
- Point of confusion is the word “services”
- May want to define “service marketing” and “service quality”
- Go higher on salary range
- Please send me a copy of the abstract
- Not sure that Parts I & II apply to my position
- Define “services”

APPENDIX C

FINAL INSTRUMENT, COVER LETTER,  
THANK YOU/REMINDER CARD



Department of Nutritional Sciences  
425 Human Environmental Sciences  
Stillwater, Oklahoma 74078-6141  
405-744-5040, Fax 405-744-7113  
Email [nutrsci-i@okstate.edu](mailto:nutrsci-i@okstate.edu)  
<http://www.okstate.edu/hes/nsci/>

August 9, 2000

Dear DBC Practice Group Member/NE Practice Group Member:

I am a Master's candidate in the department of Nutritional Sciences, currently conducting the research for my thesis. I need your help in a project to determine the services marketing skills, service quality attitude and professional development needs of dietitians working in a non-traditional setting.

The demand for services and expertise of dietetic professionals is growing throughout the American business and industry. While some dietitians are selling a **tangible product**, the majority of dietitians are delivering an **intangible service** (a deed, a performance or an effort).

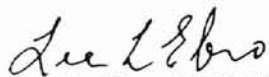
You have been randomly selected as a participant in this survey therefore your cooperation would be greatly appreciated. The random selection was performed by ADA based on your dietetic practice group membership. Replies will be kept completely confidential and used only in tabulation (composite results). The abstract of my results will be mailed to the chair of your dietetic practice group for publication in your newsletter.

This survey will require about ten minutes of your time. You can return it to me using the business reply envelope provided, on or before August 23, 2000. You may contact Sharon Bacher, IRB executive secretary, 203 Whitehurst, Oklahoma State University, Stillwater, OK 74078; telephone (405) 744-5700 with further questions concerning this study.

Thank you for your participation and cooperation.

Sincerely,

  
Mandy Caid-Jefferson  
Master's Candidate (RD eligible)  
Ph. (405) 377-2734  
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Lea L. Ebro, Ph.D, RD/LD  
Professor & Dietetic Internship Director  
Major Advisor  
Ph. (405) 744-8294  
e-mail: [gobucks@okstate.edu](mailto:gobucks@okstate.edu)

Attachment

# Services Marketing Skills, Service Quality Attitudes & Professional Development Needs of Non-traditional Dietitians



Department of Nutritional Sciences  
Oklahoma State University  
Stillwater, OK 74078-6141  
(405) 744-8294

## PART I: SERVICES MARKETING SKILLS

**INSTRUCTIONS:** Listed are various services marketing skills. Please check [✓] your knowledge/skill level after each statement in the appropriate column.

Services Marketing Skills	Degree of Knowledge		
	Limited	Adequate	More Than Adequate
Basic knowledge of customers/clients/consumers			
Purchasing decisions of customers/clients/consumers			
Developing a strategic segmentation			
Defining a "value proposition" or promise to the customer			
Developing new products and services			
Managing product mix			
Ensuring competitive, consistent products and services			
Strategic price management			
Pricing products and services to maximize return			
Maximizing realized net price for each transaction			
Developing and executing an effective channel strategy			
Developing and executing an effective partnering strategy			
Developing effective partnerships with customers and suppliers			
Developing and executing an effective sales force strategy			
Provide sales force with effective support			
Ensuring an effective and well-trained sales force			
Developing and executing an effective promotion strategy			
Using electronic multimedia in promotions			
Developing and executing an effective brand strategy			
Developing and executing an effective packaging strategy			



**PART II: ATTITUDE TOWARD SERVICE QUALITY**

**INSTRUCTIONS:** In your opinion, how important are the following service quality expectations to your customers? Check [√] the appropriate column after each statement.

<b>Expectations</b>	<b>Not Sure</b>	<b>Not So Important</b>	<b>Somewhat Important</b>	<b>Important</b>	<b>Very Important</b>
Modern-looking equipment					
Physical facilities will be visually appealing					
Employees will be neat					
Associated materials (brochures, pamphlets) will be visually appealing					
Convenient business hours					
Promise to do something at a certain time & does so					
Show sincere interest in solving problem					
Will perform the service right the first time					
Will provide service at the promised time					
Customers told exactly when services will be performed					
Prompt service will be given					
Employees will always be willing to help					
Employees will never be too busy to respond					
Will instill confidence in customers					
Customers will feel safe in their care					
Consistent courtesy with customers					
Knowledge to answer questions					
Company will give customer individual attention					
Employees will give customers personal attention					
Have the customer's best interest at heart					
Understand the specific needs of their customers					

**PART III: PROFESSIONAL DEVELOPMENT NEEDS**

**INSTRUCTIONS:** Rate your need for the continuing education and professional development for each of the following skills. Check [√] your level of need after each skill in the appropriate column.

<b>Skills</b>	<b>Urgent Need</b>	<b>Moderate Need</b>	<b>Limited Need</b>	<b>No Need</b>
Communication Skills				
Management Skills				
Marketing Skills				
Sales Skills				
Networking Skills				
Financial Management Skills				
Personnel Management Skills				
Negotiation Skills				
Computer Skills				
Public Relations Skills				
Organizational Politics				

Others, Please Specify:


**CONTINUING EDUCATION METHOD**

**INSTRUCTIONS:** Check [√] which Continuing Education Method you would use to obtain the skills above. Please list additional methods you currently use.

<b>Continuing Education Method</b>	<b>Strongly Prefer</b>	<b>Would Use</b>	<b>Would Not Use</b>
Seminars by Employer			
Workshops by Employer			
Workshops sponsored by Professional Organizations			
Seminars sponsored by Professional Organizations			
Audio Tapes			
Books			
Graduate Courses in classroom			
Graduate Course via Internet			
Continuing Education articles in Journal of the American Dietetics Association or other			
Continuing Education courses via Internet			

## PART IV: DEMOGRAPHIC INFORMATION

INSTRUCTIONS: Please check the appropriate response or insert an answer in the space provided.

### Part A: Personal Variables

6. Please indicate your gender:
- Male  
 Female
7. Please indicate your current age range:
- under 25  
 25-35  
 36-45  
 46-55  
 55-65  
 over 65
8. Indicate your race/ethnicity:
- White (Not of Hispanic Origin)  
 Hispanic  
 American Indian  
 Black (Not of Hispanic Origin)  
 Asian or Pacific Islander  
 Alaskan or Hawaiian Native
9. Indicate the highest degree that you have received:
- B.S./B.A.  
 M.S./MPH  
 M.B.A.  
 Ph.D./Ed.D

### Part B: Institutional Variables

10. Years of experience as a Registered Dietitian: \_\_\_\_\_ years
6. Years of experience in current specialty area: \_\_\_\_\_ years
10. Please indicate employment status:
- Full Time Employment (35 hours or more)  
 Part Time (less than 35 hours per week)

11. Check the category which best describes the organization in which you are employed:

- Consulting Company
- Food Company (Manufacturer)
- Food Company (Retailer)
- Health Care Corporation
- Human Resources
- Marketing
- Media (TV/Print/Electronic)
- Pharmaceutical Company
- Other (please specify): \_\_\_\_\_

12. Indicate the status of your business/industry/agency:

- state-wide
- nation-wide
- world-wide

14. Indicate the major output/end-product of your organization's service:

- tangible possession (product)
- an intangible (service)
- service-product bundle (service + product)

15. Job title: \_\_\_\_\_

16. Please indicate your salary range:

- less than \$40,000
- \$40,001-55,000
- \$55,001-70,000
- \$70,001-85,000
- \$85,001-100,000
- \$100,001-115,000
- \$115,001-130,000
- more than \$130,001

17. Indicate how you obtained marketing skills (mark all that apply):

- College Courses
- Workshops
- Self-study
- Internet Courses
- ADA Skills Workshop
- Career Experience
- On the job training
- Other (please specify): \_\_\_\_\_

14. Percentage of your job that can be considered marketing/service quality: \_\_\_\_\_%

15. You were selected for this survey based on your membership to the Dietitians in Business and Communications practice group. Are you also a member of Nutrition Entrepreneurs?

- Yes
- No

**Thank you for your participation and support.**

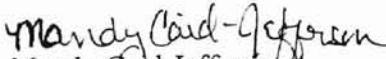
**Reminder/Thank You Card was sent to all dietitians who received a survey**

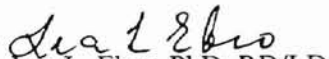
August 23, 2000

Last week a services marketing questionnaire was mailed to you.

If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please do so today. We are especially grateful for your help.

If you did not receive a questionnaire, or if it was misplaced, please call us at (405) 744-8294 and we will get another one in the mail to you today.

  
Mandy Card-Jefferson  
Master's Candidate

  
Lea L. Ebro, PhD, RD/LD  
Professor & DI Director

APPENDIX D

ADDITIONAL METHODS USED FOR OBTAINING MARKETING SKILLS

## ADDITIONAL METHODS USED FOR OBTAINING MARKETING SKILLS

<b>Method</b>	<b>Frequency</b>
Mentors	4
Wilson Learning Courses	1
MBA Degree	3
Conducting Classes and Seminars	2
Networking with Other Professionals	3
Graduate Courses	1
Employer Sponsored Seminars/Training	1
Books	4
Tips from Other Sales People	2
Internship	1
Husband	2
Parent	1
Friends in Marketing/Sales	1
Professional Organizations	1
Local Group of Business Entrepreneurs	1

APPENDIX E  
CHI SQUARE TABLES



## Key For Chi Square Analysis Tables

### Dependent Variables:

Services Marketing Skills (sms)	pages 186-200
1=Limited	
2=Adequate	
3=More Than Adequate	
Attitudes Toward Service Quality (asq)	pages 200-203
1=Not Sure	
2=Not So Important	
3=Somewhat Important	
Professional Development Needs (pdn)	pages 204-206
1=Urgent Need	
2=Moderate Need	
3=Limited Need	
4=No Need	
Continuing Education Methods (cem)	pages 206-208
1=Strongly Prefer	
2=Would Use	
3=Would Not Use	

### Independent Variables:

#### Gender

- 1=male
- 2=female

#### Age

- 1= $\leq$ 35 years
- 2=36-55 years
- 3= $\geq$ 56 years

#### Highest Degree (HD)

- 1=Bachelors
- 2=Graduate

#### Salary

- 1= $\leq$ \$55,000
- 2=\$55,001-100,000
- 3= $\geq$ \$100,001

Output

1=Product

2=Service

3=Product + Service

Group

b=Both

d=DBC

n=NE

Table of salarygp by sms1

salarygp		sms1			
Frequency	Percent	1	2	3	Total
1	6	57	63	126	51.85
	2.47	23.46	25.93		
2	2	15	81	98	40.33
	0.82	6.17	33.33		
3	0	5	14	19	7.82
	0.00	2.06	5.76		
Total	8	77	158	243	100.00
	3.29	31.69	65.02		

Frequency Missing = 5

Statistics for Table of salarygp by sms1

Statistic	DF	Value	Prob
Chi-Square	4	26.9695	<.0001

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test

Effective Sample Size = 243  
Frequency Missing = 5  
The SAS System

Table of output by sms1

output		sms1			
Frequency	Percent	1	2	3	Total
1	0	9	26	35	14.98
	0.00	3.85	11.11		
2	8	47	57	110	47.01
	2.56	20.09	24.36		
3	2	15	72	89	38.03
	0.85	6.41	30.77		
Total	8	71	155	234	100.00
	3.42	30.34	66.24		

Frequency Missing = 14

Statistics for Table of output by sms1

Statistic	DF	Value	Prob
Chi-Square	4	20.7151	0.0004

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test

Effective Sample Size = 234  
Frequency Missing = 14  
The SAS System

Table of group by sms1

group		sms1			
Frequency	Percent	1	2	3	Total
o	0	8	24	32	13.17
	0.00	3.29	9.88		
d	1	32	90	123	50.62
	0.41	13.17	37.04		
n	7	37	44	88	36.21
	2.88	15.23	18.11		
Total	8	77	158	243	100.00
	3.29	31.69	65.02		

Frequency Missing = 5

Statistics for Table of group by sms1

Statistic	DF	Value	Prob
Chi-Square	4	18.6402	0.0009

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test

Effective Sample Size = 243  
Frequency Missing = 5  
The SAS System

Table of gender by sms2

gender		sms2			
Frequency	Percent	1	2	3	Total
1	4	3	1	8	3.52
	1.76	1.32	0.44		
2	25	98	98	219	96.48
	11.01	42.29	43.17		
Total	29	99	99	227	100.00
	12.78	43.61	43.61		

Frequency Missing = 21

Statistics for Table of gender by sms2

Statistic	DF	Value	Prob
Chi-Square	2	10.9057	0.0043

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test

Effective Sample Size = 227  
Frequency Missing = 21  
The SAS System

Table of salarypp by ses2

salarypp		ses2			
Frequency	Percent	1	2	3	Total
1	26 10.74	66 27.27	33 13.64		125 51.65
2	4 1.65	32 13.22	62 25.62		98 40.50
3	0 0.00	7 2.89	12 4.96		19 7.85
Total	30 12.40	105 43.39	107 44.21		242 100.00

Frequency Missing = 6

Statistics for Table of salarypp by ses2

Statistic	DF	Value	Prob
Chi-Square	4	38.8424	<.0001

Effective Sample Size = 242  
Frequency Missing = 6  
The SAS System

Table of output by ses2

output		ses2			
Frequency	Percent	1	2	3	Total
1	0 0.00	17 7.30	18 7.73		35 15.02
2	20 8.58	53 22.75	35 15.02		108 46.35
3	8 3.43	31 13.30	51 21.89		90 38.63
Total	28 12.02	101 43.35	104 44.64		233 100.00

Frequency Missing = 15

Statistics for Table of output by ses2

Statistic	DF	Value	Prob
Chi-Square	4	18.3191	0.0011

Effective Sample Size = 233  
Frequency Missing = 15  
The SAS System

Table of group by ses2

group		ses2			
Frequency	Percent	1	2	3	Total
b	1 0.41	11 4.55	19 7.85		31 12.81
d	12 4.96	47 19.42	64 26.45		123 50.83
n	17 7.02	47 19.42	24 9.92		88 36.36
Total	30 12.40	105 43.39	107 44.21		242 100.00

Frequency Missing = 6

Statistics for Table of group by ses2

Statistic	DF	Value	Prob
Chi-Square	4	18.8958	0.0008

Effective Sample Size = 242  
Frequency Missing = 6  
The SAS System

Table of salarypp by ses3

salarypp		ses3			
Frequency	Percent	1	2	3	Total
1	86 28.21	40 17.09	13 5.56		119 50.85
2	25 10.68	32 13.68	39 16.67		96 41.03
3	1 0.43	4 1.71	14 5.98		19 8.12
Total	92 39.32	76 32.48	66 28.21		234 100.00

Frequency Missing = 14

Statistics for Table of salarypp by ses3

Statistic	DF	Value	Prob
Chi-Square	4	50.4122	<.0001

Effective Sample Size = 234  
Frequency Missing = 14  
The SAS System

Table of output by ses3

output		ses3			
Frequency	Percent	1	2	3	Total
1	12 5.33	11 4.89	11 4.89	34 15.11	
2	54 24.00	30 13.33	20 8.89	104 46.22	
3	23 10.22	32 14.22	32 14.22	87 38.67	
Total	89 39.56	73 32.44	63 28.00	225 100.00	

Frequency Missing = 23

Statistics for Table of output by ses3

Statistic	DF	Value	Prob
Chi-Square	4	14.3649	0.0062

Effective Sample Size = 225  
Frequency Missing = 23  
The SAS System

Table of group by ses3

group		ses3			
Frequency	Percent	1	2	3	Total
b	5 2.14	14 5.98	13 5.56	32 13.68	
d	40 17.09	39 16.87	43 18.38	122 52.14	
n	47 20.09	23 9.83	10 4.27	80 34.19	
Total	92 39.32	76 32.48	66 28.21	234 100.00	

Frequency Missing = 14

Statistics for Table of group by ses3

Statistic	DF	Value	Prob
Chi-Square	4	26.0702	<.0001

Effective Sample Size = 234  
Frequency Missing = 14  
The SAS System

Table of output by ses4

output		ses4			
Frequency	Percent	1	2	3	Total
1	7 3.00	17 7.30	11 4.72	35 15.02	
2	42 18.00	35 15.02	31 13.30	108 46.35	
3	17 7.30	27 11.59	48 19.74	90 38.63	
Total	66 28.33	79 33.91	88 37.77	233 100.00	

Frequency Missing = 15

Statistics for Table of output by ses4

Statistic	DF	Value	Prob
Chi-Square	4	17.8014	0.0015

Effective Sample Size = 233  
Frequency Missing = 15  
The SAS System

Table of salarypp by ses4

salarypp		ses4			
Frequency	Percent	1	2	3	Total
1	53 21.90	40 16.53	33 13.84	126 52.07	
2	14 5.79	37 15.29	48 19.01	97 40.08	
3	2 0.83	4 1.65	13 5.37	19 7.85	
Total	69 28.51	81 33.47	92 38.02	242 100.00	

Frequency Missing = 8

Statistics for Table of salarypp by ses4

Statistic	DF	Value	Prob
Chi-Square	4	30.1478	<.0001

Effective Sample Size = 242  
Frequency Missing = 8  
The SAS System

Table of group by sms4

group	sms4			Total
Frequency Percent	1	2	3	
b	5 2.07	10 4.13	17 7.02	32 13.22
d	26 10.74	43 17.77	53 21.90	122 50.41
n	38 15.70	28 11.57	22 9.09	88 36.36
Total	69 28.51	81 33.47	92 38.02	242 100.00

Frequency Missing = 6

Statistics for Table of group by sms4

Statistic	DF	Value	Prob
Chi-Square	4	17.7464	0.0014

Effective Sample Size = 242  
Frequency Missing = 6  
The SAS System

Table of salarygp by sms5

salarygp	sms5			Total
Frequency Percent	1	2	3	
1	43 17.77	56 23.14	27 11.16	126 52.07
2	12 4.96	43 17.77	42 17.36	97 40.08
3	0 0.00	8 3.31	11 4.55	19 7.85
Total	55 22.73	107 44.21	80 33.06	242 100.00

Frequency Missing = 6

Statistics for table of salarygp by sms5

Statistic	DF	Value	Prob
Chi-Square	4	27.8987	< .0001

Effective Sample Size = 242  
Frequency Missing = 6  
The SAS System

Table of output by sms5

output	sms5			Total
Frequency Percent	1	2	3	
1	3 1.29	20 8.58	12 5.15	35 15.02
2	35 15.02	45 19.31	28 12.02	108 46.35
3	14 6.01	37 15.88	39 16.74	90 38.63
Total	52 22.32	102 43.78	79 33.91	233 100.00

Frequency Missing = 15

Statistics for Table of output by sms5

Statistic	DF	Value	Prob
Chi-Square	4	15.8072	0.0033

Effective Sample Size = 233  
Frequency Missing = 15  
The SAS System

Table of group by sms5

group	sms5			Total
Frequency Percent	1	2	3	
b	5 2.07	10 4.13	17 7.02	32 13.22
d	20 8.26	56 23.14	46 19.01	122 50.41
n	30 12.40	41 16.94	17 7.02	88 36.36
Total	55 22.73	107 44.21	80 33.06	242 100.00

Frequency Missing = 6

Statistics for Table of group by sms5

Statistic	DF	Value	Prob
Chi-Square	4	18.9914	0.0008

Effective Sample Size = 242  
Frequency Missing = 6  
The SAS System

Table of age by sms6

age		sms6			
Frequency		1	2	3	Total
Percent					
1	12	24	5	41	
	5.43	10.80	2.26	18.55	
3	52	62	44	158	
	23.53	28.05	19.91	71.49	
5	6	8	10	22	
	2.71	2.71	4.52	9.95	
Total	70	92	59	221	
	31.67	41.83	26.70	100.00	

Frequency Missing = 27

Statistics for Table of age by sms6

Statistic	DF	Value	Prob
Chi-Square	4	10.8147	0.0313

Effective Sample Size = 221  
Frequency Missing = 27

WARNING: 11% of the data are missing  
The SAS System

Table of salarygp by sms6

salarygp		sms6			
Frequency		1	2	3	Total
Percent					
1	52	52	17	121	
	22.03	22.03	7.20	51.27	
2	17	41	38	96	
	7.20	17.37	16.10	40.68	
3	3	6	10	19	
	1.27	2.54	4.24	8.05	
Total	72	99	65	236	
	30.51	41.95	27.54	100.00	

Frequency Missing = 12

Statistics for Table of salarygp by sms6

Statistic	DF	Value	Prob
Chi-Square	4	30.5936	<.0001

Effective Sample Size = 236  
Frequency Missing = 12  
The SAS System

Table of output by sms6

output		sms6			
Frequency		1	2	3	Total
Percent					
1	7	17	11	35	
	3.08	7.49	4.85	15.42	
2	43	41	19	103	
	18.94	18.06	8.37	45.37	
3	18	37	34	89	
	7.93	16.30	14.98	39.21	
Total	68	95	64	227	
	29.96	41.85	28.19	100.00	

Frequency Missing = 21

Statistics for Table of output by sms6

Statistic	DF	Value	Prob
Chi-Square	4	15.9975	0.0030

Effective Sample Size = 227  
Frequency Missing = 21  
The SAS System

Table of group by sms6

group		sms6			
Frequency		1	2	3	Total
Percent					
b	5	13	12	30	
	2.12	5.51	5.08	12.71	
d	29	49	44	122	
	12.29	20.76	18.64	51.69	
n	38	37	9	84	
	16.10	15.68	3.81	35.59	
Total	72	99	65	236	
	30.51	41.95	27.54	100.00	

Frequency Missing = 12

Statistics for Table of group by sms6

Statistic	DF	Value	Prob
Chi-Square	4	23.4127	0.0001

Effective Sample Size = 236  
Frequency Missing = 12  
The SAS System

Table of salarygp by sms7

salarygp		sms7			
Frequency		1	2	3	Total
Percent					
1	29	67	29	125	
	12.03	27.80	12.03	51.87	
2	4	42	51	97	
	1.66	17.43	21.16	40.25	
3	2	6	11	19	
	0.83	2.49	4.56	7.88	
Total	35	115	91	241	
	14.52	47.72	37.76	100.00	

Frequency Missing = 7

Statistics for Table of salarygp by sms7

Statistic	DF	Value	Prob
Chi-Square	4	30.9509	<.0001

Effective Sample Size = 241  
 Frequency Missing = 7  
 The SAS System

Table of output by sms7

output		sms7			
Frequency		1	2	3	Total
Percent					
1	2	17	16	35	
	0.86	7.33	6.90	15.09	
2	19	59	30	108	
	8.19	25.43	12.93	46.55	
3	10	35	44	89	
	4.31	15.09	18.97	38.36	
Total	31	111	90	232	
	13.36	47.84	38.79	100.00	

Frequency Missing = 16

Statistics for Table of output by sms7

Statistic	DF	Value	Prob
Chi-Square	4	12.0826	0.0167

Effective Sample Size = 232  
 Frequency Missing = 16  
 The SAS System

Table of salarygp by sms8

salarygp		sms8			
Frequency		1	2	3	Total
Percent					
1	61	45	16	122	
	25.74	18.99	6.75	51.48	
2	22	37	37	96	
	9.28	15.61	15.61	40.51	
3	8	5	6	19	
	3.38	2.11	2.53	8.02	
Total	91	87	59	237	
	38.40	36.71	24.89	100.00	

Frequency Missing = 11

Statistics for Table of salarygp by sms8

Statistic	DF	Value	Prob
Chi-Square	4	25.3087	<.0001

Effective Sample Size = 237  
 Frequency Missing = 11  
 The SAS System

Table of HD by sms9

HD		sms9			
Frequency		1	2	3	Total
Percent					
1	23	33	25	81	
	10.31	14.80	11.21	36.32	
2	85	56	21	142	
	29.15	25.11	9.42	83.68	
Total	88	89	46	223	
	39.46	39.91	20.63	100.00	

Frequency Missing = 25

Statistics for Table of HD by sms9

Statistic	DF	Value	Prob
Chi-Square	2	10.4315	0.0054

Effective Sample Size = 223  
 Frequency Missing = 25

WARNING: 10% of the data are missing.  
 The SAS System



Table of salarygp by sms9

salarygp		sms9			
Frequency		1	2	3	Total
Percent					
1	61	50	12	123	
	25.63	21.01	5.04	51.68	
2	25	41	30	96	
	10.50	17.23	12.61	40.34	
3	5	7	7	19	
	2.10	2.94	2.94	7.98	
Total	91	98	49	238	
	38.24	41.18	20.59	100.00	

Frequency Missing = 10

Statistics for Table of salarygp by sms9

Statistic	DF	Value	Prob
Chi-Square	4	23.4873	0.0001

Effective Sample Size = 238  
 Frequency Missing = 10  
 The SAS System

Table of salarygp by sms10

salarygp		sms10			
Frequency		1	2	3	Total
Percent					
1	68	37	14	119	
	29.18	15.88	6.01	51.07	
2	26	40	30	96	
	11.16	17.17	12.86	41.20	
3	7	6	5	18	
	3.00	2.58	2.15	7.73	
Total	101	83	49	233	
	43.35	35.62	21.03	100.00	

Frequency Missing = 15

Statistics for Table of salarygp by sms10

Statistic	DF	Value	Prob
Chi-Square	4	22.8772	0.0001

Effective Sample Size = 233  
 Frequency Missing = 15  
 The SAS System

Table of salarygp by sms11

salarygp		sms11			
Frequency		1	2	3	Total
Percent					
1	76	32	9	117	
	32.90	13.85	3.90	50.65	
2	42	29	25	96	
	18.18	12.55	10.82	41.56	
3	7	5	6	18	
	3.03	2.16	2.60	7.79	
Total	125	66	40	231	
	54.11	28.57	17.32	100.00	

Frequency Missing = 17

Statistics for Table of salarygp by sms11

Statistic	DF	Value	Prob
Chi-Square	4	18.5196	0.0010

Effective Sample Size = 231  
 Frequency Missing = 17  
 The SAS System

Table of group by sms11

group		sms11			
Frequency		1	2	3	Total
Percent					
b	12	7	12	31	
	5.19	3.03	5.19	13.42	
d	58	40	22	120	
	25.11	17.32	9.52	51.95	
n	55	19	6	80	
	23.81	8.23	2.60	34.63	
Total	125	66	40	231	
	54.11	28.57	17.32	100.00	

Frequency Missing = 17

Statistics for Table of group by sms11

Statistic	DF	Value	Prob
Chi-Square	4	19.9771	0.0005

Effective Sample Size = 231  
 Frequency Missing = 17  
 The SAS System

Table of salarygp by sms12

salarygp		sms12			
Frequency		1	2	3	Total
1	61	40	23	124	
	25.52	16.74	9.62	51.88	
2	20	32	44	96	
	8.37	13.39	18.41	40.17	
3	3	7	9	19	
	1.26	2.93	3.77	7.95	
Total	84	79	76	239	
	35.15	33.05	31.80	100.00	

Frequency Missing = 9

Statistics for Table of salarygp by sms12

Statistic	DF	Value	Prob
Chi-Square	4	28.9327	<.0001

Effective Sample Size = 239  
 Frequency Missing = 9  
 The SAS System

Table of output by sms12

output		sms12			
Frequency		1	2	3	Total
1	13	13	9	35	
	5.65	5.65	3.91	15.22	
2	51	30	25	106	
	22.17	13.04	10.87	46.09	
3	17	33	39	89	
	7.39	14.35	16.96	38.70	
Total	81	76	73	230	
	35.22	33.04	31.74	100.00	

Frequency Missing = 18

Statistics for Table of output by sms12

Statistic	DF	Value	Prob
Chi-Square	4	19.6576	0.0006

Effective Sample Size = 230  
 Frequency Missing = 18  
 The SAS System

Table of group by sms12

group		sms12			
Frequency		1	2	3	Total
b	6	10	16	32	
	2.51	4.18	6.89	13.39	
d	32	41	47	120	
	13.39	17.15	19.67	50.21	
n	46	26	13	87	
	19.25	11.72	5.44	36.40	
Total	84	79	76	239	
	35.15	33.05	31.80	100.00	

Frequency Missing = 9

Statistics for Table of group by sms12

Statistic	DF	Value	Prob
Chi-Square	4	25.9341	<.0001

Effective Sample Size = 239  
 Frequency Missing = 9  
 The SAS System

Table of salarygp by sms13

salarygp		sms13			
Frequency		1	2	3	Total
1	45	43	34	122	
	18.83	17.99	14.23	51.05	
2	9	43	46	98	
	3.77	17.99	19.25	41.00	
3	2	5	12	19	
	0.84	2.09	5.02	7.95	
Total	56	91	92	239	
	23.43	38.08	38.49	100.00	

Frequency Missing = 9

Statistics for Table of salarygp by sms13

Statistic	DF	Value	Prob
Chi-Square	4	29.4746	<.0001

Effective Sample Size = 239  
 Frequency Missing = 9  
 The SAS System

Table of output by sms13

output		sms13			
Frequency	Percent	1	2	3	Total
1	6 2.61	14 6.09	15 6.52	35 15.22	
2	38 16.52	36 15.65	32 13.91	106 46.09	
3	9 3.91	38 16.52	42 18.26	89 38.70	
Total	53 23.04	88 38.26	89 38.70	230 100.00	

Frequency Missing = 18

Statistics for Table of output by sms13

Statistic	DF	Value	Prob
Chi-Square	4	19.3265	0.0007

Effective Sample Size = 230  
Frequency Missing = 18  
The SAS System

Table of Group by sms13

group		sms13			
Frequency	Percent	1	2	3	Total
b	4 1.67	8 3.35	18 7.53	30 12.55	
d	16 6.69	50 20.92	57 23.85	123 51.46	
n	36 15.06	33 13.81	17 7.11	86 35.98	
Total	56 23.43	91 38.06	92 38.49	239 100.00	

Frequency Missing = 9

Statistics for Table of group by sms13

Statistic	DF	Value	Prob
Chi-Square	4	34.1233	<.0001

Effective Sample Size = 239  
Frequency Missing = 9  
The SAS System

Table of salarygp by sms14

salarygp		sms14			
Frequency	Percent	1	2	3	Total
1	83 36.24	25 10.92	8 3.49	116 50.86	
2	32 13.97	35 15.28	28 12.23	95 41.48	
3	5 2.18	8 3.49	5 2.18	18 7.86	
Total	120 52.40	68 29.69	41 17.90	229 100.00	

Frequency Missing = 19

Statistics for Table of salarygp by sms14

Statistic	DF	Value	Prob
Chi-Square	4	36.0267	<.0001

Effective Sample Size = 229  
Frequency Missing = 19  
The SAS System

Table of output by sms14

output		sms14			
Frequency	Percent	1	2	3	Total
1	14 6.36	10 4.55	11 5.00	35 15.91	
2	64 29.09	25 11.36	10 4.55	99 45.00	
3	36 16.36	31 14.09	19 8.64	86 39.09	
Total	114 51.82	66 30.00	40 18.18	220 100.00	

Frequency Missing = 28

Statistics for Table of output by sms14

Statistic	DF	Value	Prob
Chi-Square	4	15.2058	0.0043

Effective Sample Size = 220  
Frequency Missing = 28

WARNING: 11% of the data are missing  
The SAS System

Table of group by sss14

group		sss14			
Frequency	Percent	1	2	3	Total
b		9	13	8	30
		3.93	5.68	3.49	13.10
d		48	43	29	120
		20.96	18.78	12.66	52.40
n		63	12	4	79
		27.51	5.24	1.75	34.50
Total		120	68	41	229
		52.40	29.89	17.90	100.00

Frequency Missing = 19

Statistics for Table of group by sss14

Statistic	DF	Value	Prob
Chi-Square	4	37.8583	<.0001

Effective Sample Size = 229  
 Frequency Missing = 19  
 The SAS System

Table of age by sss15

age		sss15			
Frequency	Percent	1	2	3	Total
1		23	5	14	42
		10.75	2.34	6.54	19.63
3		63	44	45	152
		29.44	20.56	21.03	71.03
5		6	10	4	20
		2.80	4.67	1.87	9.35
Total		92	59	63	214
		42.98	27.57	29.44	100.00

Frequency Missing = 34

Statistics for Table of age by sss15

Statistic	DF	Value	Prob
Chi-Square	4	10.5387	0.0323

Effective Sample Size = 214  
 Frequency Missing = 34

WARNING: 14% of the data are missing.  
 The SAS System

Table of salarygp by sss15

salarygp		sss15			
Frequency	Percent	1	2	3	Total
1		87	26	23	116
		29.39	11.40	10.09	50.88
2		24	32	38	94
		10.53	14.04	16.67	41.23
3		5	7	6	18
		2.19	3.07	2.63	7.89
Total		96	65	67	228
		42.11	28.51	29.39	100.00

Frequency Missing = 20

Statistics for Table of salarygp by sss15

Statistic	DF	Value	Prob
Chi-Square	4	24.5622	<.0001

Effective Sample Size = 228  
 Frequency Missing = 20  
 The SAS System

Table of output by sss15

output		sss15			
Frequency	Percent	1	2	3	Total
1		10	6	19	35
		4.57	2.74	8.68	15.98
2		56	28	14	98
		25.57	12.79	6.39	44.75
3		26	30	30	86
		11.87	13.70	13.70	39.27
Total		92	64	63	219
		42.01	29.22	28.77	100.00

Frequency Missing = 29

Statistics for Table of output by sss15

Statistic	DF	Value	Prob
Chi-Square	4	28.5770	<.0001

Effective Sample Size = 219  
 Frequency Missing = 29

WARNING: 12% of the data are missing.  
 The SAS System

Table of group by sss15

group		sss15			
Frequency		1	2	3	Total
b	9	10	12		31
	3.95	4.39	5.26		13.60
d	34	37	50		121
	14.91	16.23	21.93		53.07
n	53	18	5		76
	23.25	7.89	2.19		33.33
Total	96	65	67		228
	42.11	28.51	29.39		100.00

Frequency Missing = 20

Statistics for Table of group by sss15

Statistic	DF	Value	Prob
Chi-Square	4	41.8686	<.0001

Effective Sample Size = 228  
 Frequency Missing = 20  
 The SAS System

Table of salarygp by sss16

salarygp		sss16			
Frequency		1	2	3	Total
1	73	27	13		113
	32.44	12.00	5.78		50.22
2	29	32	33		94
	12.89	14.22	14.67		41.78
3	5	8	5		18
	2.22	3.56	2.22		8.00
Total	107	67	51		225
	47.56	29.78	22.67		100.00

Frequency Missing = 23

Statistics for Table of salarygp by sss16

Statistic	DF	Value	Prob
Chi-Square	4	29.9253	<.0001

Effective Sample Size = 225  
 Frequency Missing = 23  
 The SAS System

Table of output by sss16

output		sss16			
Frequency		1	2	3	Total
1	10	13	12		35
	4.63	6.02	5.56		16.20
2	65	21	11		97
	30.09	9.72	5.09		44.91
3	26	32	26		84
	12.04	14.81	12.04		38.89
Total	101	66	49		216
	46.76	30.56	22.69		100.00

Frequency Missing = 32

Statistics for Table of output by sss16

Statistic	DF	Value	Prob
Chi-Square	4	30.1603	<.0001

Effective Sample Size = 216  
 Frequency Missing = 32

WARNING: 13% of the data are missing  
 The SAS System

Table of group by sss16

group		sss16			
Frequency		1	2	3	Total
b	11	11	8		30
	4.89	4.89	3.56		13.33
d	41	44	36		121
	18.22	19.56	16.00		53.78
n	55	12	7		74
	24.44	5.33	3.11		32.89
Total	107	67	51		225
	47.56	29.78	22.67		100.00

Frequency Missing = 23

Statistics for Table of group by sss16

Statistic	DF	Value	Prob
Chi-Square	4	32.0512	<.0001

Effective Sample Size = 225  
 Frequency Missing = 23  
 The SAS System

Table of salarygp by sms17

salarygp		sms17			
Frequency		1	2	3	Total
Percent					
1	53	53	18		124
	22.27	22.27	7.56		52.10
2	19	42	34		95
	7.98	17.65	14.29		39.92
3	3	8	8		19
	1.26	3.36	3.36		7.98
Total	75	103	60		238
	31.51	43.28	25.21		100.00

Frequency Missing = 10

Statistics for Table of salarygp by sms17

Statistic	DF	Value	Prob
Chi-Square	4	22.4754	0.0002

Effective Sample Size = 238  
 Frequency Missing = 10  
 The SAS System

Table of output by sms17

output		sms17			
Frequency		1	2	3	Total
Percent					
1	8	13	14		35
	3.48	5.65	6.09		15.22
2	45	36	25		106
	19.57	15.65	10.87		46.09
3	18	51	20		89
	7.83	22.17	8.70		38.70
Total	71	100	59		230
	30.87	43.48	25.65		100.00

Frequency Missing = 18

Statistics for Table of output by sms17

Statistic	DF	Value	Prob
Chi-Square	4	18.3816	0.0010

Effective Sample Size = 230  
 Frequency Missing = 18  
 The SAS System

Table of group by sms17

group		sms17			
Frequency		1	2	3	Total
Percent					
b	4	13	15		32
	1.68	5.46	6.30		13.45
d	29	56	36		121
	12.18	23.53	15.13		50.84
n	42	34	9		85
	17.65	14.29	3.78		35.71
Total	75	103	60		238
	31.51	43.28	25.21		100.00

Frequency Missing = 10

Statistics for Table of group by sms17

Statistic	DF	Value	Prob
Chi-Square	4	29.1704	<.0001

Effective Sample Size = 238  
 Frequency Missing = 10  
 The SAS System

Table of gender by sms18

gender		sms18			
Frequency		1	2	3	Total
Percent					
1	0	5	3		8
	0.00	2.22	1.33		3.56
2	107	72	38		217
	47.56	32.00	16.89		96.44
Total	107	77	41		225
	47.56	34.22	18.22		100.00

Frequency Missing = 23

Statistics for Table of gender by sms18

Statistic	DF	Value	Prob
Chi-Square	2	7.5746	0.0227

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test

Effective Sample Size = 225  
 Frequency Missing = 23  
 The SAS System

Table of salarygp by sss18

salarygp	sss18			Total
Frequency Percent	1	2	3	
1	88 28.33	38 15.83	17 7.08	123 51.25
2	38 15.83	43 17.92	17 7.08	98 40.83
3	6 2.50	5 2.08	8 3.33	19 7.92
Total	112 46.67	86 35.83	42 17.50	240 100.00

Frequency Missing = 8

Statistics for Table of salarygp by sss18

Statistic	DF	Value	Prob
Chi-Square	4	14.8050	0.0051

Effective Sample Size = 240  
Frequency Missing = 8  
The SAS System

Table of output by sss18

output	sss18			Total
Frequency Percent	1	2	3	
1	14 6.06	17 7.36	4 1.73	35 15.15
2	60 25.97	25 10.82	21 9.09	106 45.89
3	34 14.72	40 17.32	18 6.93	90 38.96
Total	108 46.75	82 35.50	41 17.75	231 100.00

Frequency Missing = 17

Statistics for Table of output by sss18

Statistic	DF	Value	Prob
Chi-Square	4	13.0853	0.0109

Effective Sample Size = 231  
Frequency Missing = 17  
The SAS System

Table of group by sss18

group	sss18			Total
Frequency Percent	1	2	3	
b	11 4.58	12 5.00	9 3.75	32 13.33
d	52 21.67	46 19.17	25 10.42	123 51.25
n	49 20.42	28 11.67	8 3.33	85 35.42
Total	112 46.67	86 35.83	42 17.50	240 100.00

Frequency Missing = 8

Statistics for Table of group by sss18

Statistic	DF	Value	Prob
Chi-Square	4	9.8502	0.0430

Effective Sample Size = 240  
Frequency Missing = 8  
The SAS System

Table of gender by sss19

gender	sss19			Total
Frequency Percent	1	2	3	
1	1 0.46	6 2.78	1 0.46	8 3.70
2	100 48.30	64 29.63	44 20.37	208 96.30
Total	101 48.78	70 32.41	45 20.83	216 100.00

Frequency Missing = 32

Statistics for Table of gender by sss19

Statistic	DF	Value	Prob
Chi-Square	2	7.0128	0.0309

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test

Effective Sample Size = 216  
Frequency Missing = 32

WARNING: 13% of the data are missing  
The SAS System

Table of salarygp by sms19

salarygp		sms19			
Frequency	Percent	1	2	3	Total
1	68 29.57	35 15.22	13 5.65		116 50.43
2	33 14.35	34 14.78	28 12.17		95 41.30
3	6 2.61	6 2.61	7 3.04		19 8.26
Total	107 46.52	75 32.61	48 20.87		230 100.00

Frequency Missing = 18

Statistics for Table of salarygp by sms19

Statistic	DF	Value	Prob
Chi-Square	4	18.7924	0.0009

Effective Sample Size = 230  
Frequency Missing = 18  
The SAS System

Table of output by sms19

output		sms19			
Frequency	Percent	1	2	3	Total
1	15 6.76	11 4.95	9 4.05		35 15.77
2	81 27.48	26 11.71	12 5.41		99 44.59
3	27 12.18	35 15.77	26 11.71		88 39.64
Total	103 46.40	72 32.43	47 21.17		222 100.00

Frequency Missing = 26

Statistics for Table of output by sms19

Statistic	DF	Value	Prob
Chi-Square	4	19.4419	0.0006

Effective Sample Size = 222  
Frequency Missing = 26

WARNING: 10% of the data are missing  
The SAS System

Table of group by sms19

group		sms19			
Frequency	Percent	1	2	3	Total
b	8 3.48	11 4.78	11 4.78		30 13.04
d	46 20.00	43 18.70	31 13.48		120 52.17
n	53 23.04	21 9.13	6 2.61		80 34.78
Total	107 46.52	75 32.61	48 20.87		230 100.00

Frequency Missing = 18

Statistics for Table of group by sms19

Statistic	DF	Value	Prob
Chi-Square	4	24.3468	<.0001

Effective Sample Size = 230  
Frequency Missing = 18  
The SAS System

Table of salarygp by sms20

salarygp		sms20			
Frequency	Percent	1	2	3	Total
1	74 31.90	32 13.79	10 4.31		116 50.00
2	41 17.67	36 16.36	18 7.76		97 41.81
3	5 2.16	9 3.88	5 2.16		19 8.19
Total	120 51.72	79 34.05	33 14.22		232 100.00

Frequency Missing = 16

Statistics for Table of salarygp by sms20

Statistic	DF	Value	Prob
Chi-Square	4	16.2700	0.0027

Effective Sample Size = 232  
Frequency Missing = 16  
The SAS System



Table of output by ses20

output		ses20			
Frequency	Percent	1	2	3	Total
1	16 7.14	12 5.36	7 3.13	35 15.63	
2	65 29.02	25 11.16	10 4.46	100 44.64	
3	34 15.18	40 17.86	15 6.70	89 39.73	
Total	115 51.34	77 34.38	32 14.29	224 100.00	

Frequency Missing = 24

Statistics for Table of output by ses20

Statistic	DF	Value	Prob
Chi-Square	4	14.7880	0.0052

Effective Sample Size = 224  
Frequency Missing = 24  
The SAS System

Table of group by ses20

group		ses20			
Frequency	Percent	1	2	3	Total
b	10 4.31	13 5.60	7 3.02	30 12.93	
d	60 25.86	42 18.10	20 8.62	122 52.59	
n	50 21.55	24 10.34	6 2.59	80 34.48	
Total	120 51.72	79 34.05	33 14.22	232 100.00	

Frequency Missing = 16

Statistics for Table of group by ses20

Statistic	DF	Value	Prob
Chi-Square	4	9.7566	0.0447

Effective Sample Size = 232  
Frequency Missing = 16

Table of group by asq2

group		asq2					
Frequency	Percent	1	2	3	4	5	Total
b	3 1.31	7 3.06	5 2.18	10 4.37	5 2.18	30 13.10	
d	3 1.31	12 5.24	21 9.17	42 18.34	37 16.16	115 50.22	
n	2 0.87	6 2.62	12 5.24	48 20.96	16 6.99	84 36.68	
Total	8 3.49	25 10.92	38 16.59	100 43.67	58 25.33	229 100.00	

Frequency Missing = 19

Statistics for Table of group by asq2

Statistic	DF	Value	Prob
Chi-Square	8	19.9062	0.0107

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test

Effective Sample Size = 229  
Frequency Missing = 19  
The SAS System

Table of age by asq3

age		asq3					
Frequency	Percent	1	2	3	4	5	Total
1	2 0.93	2 0.93	4 1.86	16 7.44	11 5.12	35 16.28	
3	1 0.47	5 2.33	5 2.33	70 32.56	77 35.61	158 73.49	
5	0 0.00	0 0.00	1 0.47	6 2.79	15 6.98	22 10.23	
Total	3 1.40	7 3.26	10 4.65	92 42.79	103 47.91	215 100.00	

Frequency Missing = 33

Statistics for Table of age by asq3

Statistic	DF	Value	Prob
Chi-Square	8	16.5085	0.0357

WARNING: 47% of the cells have expected counts less than 5. Chi-Square may not be a valid test

Effective Sample Size = 215  
Frequency Missing = 33  
WARNING: 13% of the data are missing  
The SAS System

Table of gender by asq6

gender		asq6			Total
Frequency Percent	3	4	5		
1	1 0.44	2 0.88	5 2.21	8 3.54	
2	1 0.44	31 13.72	186 82.30	218 96.46	
Total	2 0.88	33 14.60	191 84.51	226 100.00	

Frequency Missing = 22

Statistics for Table of gender by asq6

Statistic	DF	Value	Prob
Chi-Square	2	13.7330	0.0010

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 226  
Frequency Missing = 22  
The SAS System

Table of gender by asq7

gender		asq7				Total
Frequency Percent	2	3	4	5		
1	0 0.00	2 0.88	1 0.44	5 2.21	8 3.54	
2	1 0.44	0 0.00	38 16.81	179 79.20	218 96.46	
Total	1 0.44	2 0.88	39 17.26	184 81.42	226 100.00	

Frequency Missing = 22

Statistics for Table of gender by asq7

Statistic	DF	Value	Prob
Chi-Square	3	55.0099	< .0001

WARNING: 63% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 226  
Frequency Missing = 22  
The SAS System

Table of gender by asq9

gender		asq9			Total
Frequency Percent	3	4	5		
1	0 0.00	5 2.22	3 1.33	8 3.56	
2	1 0.44	47 20.89	169 75.11	217 96.44	
Total	1 0.44	52 23.11	172 76.44	225 100.00	

Frequency Missing = 23

Statistics for Table of gender by asq9

Statistic	DF	Value	Prob
Chi-Square	2	7.2511	0.0266

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 225  
Frequency Missing = 23  
The SAS System

Table of age by asq10

age		asq10				Total
Frequency Percent	2	3	4	5		
1	2 0.89	7 3.11	15 6.67	17 7.56	41 18.22	
3	3 1.33	3 1.33	67 29.78	88 39.11	161 71.56	
5	0 0.00	2 0.89	3 1.33	18 8.00	23 10.22	
Total	5 2.22	12 5.33	85 37.78	123 54.67	225 100.00	

Frequency Missing = 23

Statistics for table of age by asq10

Statistic	DF	Value	Prob
Chi-Square	6	24.8405	0.0004

WARNING: 42% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 225  
Frequency Missing = 23  
The SAS System

Table of gender by asq11

gender		asq11			Total
Frequency	Percent	3	4	5	
1		1	5	2	8
		0.44	2.22	0.89	3.56
2		5	61	151	217
		2.22	27.11	67.11	96.44
Total		6	66	153	225
		2.67	29.33	68.00	100.00

Frequency Missing = 23

Statistics for Table of gender by asq11

Statistic	DF	Value	Prob
Chi-Square	2	8.3739	0.0152

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 225  
Frequency Missing = 23  
The SAS System

Table of output by asq15

output		asq15					Total
Frequency	Percent	1	2	3	4	5	
1		1	1	4	13	15	34
		0.43	0.43	1.73	5.63	6.49	14.72
2		0	3	4	21	79	107
		0.00	1.30	1.73	9.09	34.20	46.32
3		5	4	6	22	53	90
		2.16	1.73	2.60	9.52	22.94	38.96
Total		6	8	14	56	147	231
		2.60	3.46	6.06	24.24	63.64	100.00

Frequency Missing = 17

Statistics for Table of output by asq15

Statistic	DF	Value	Prob
Chi-Square	8	16.8604	0.0316

WARNING: 47% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 231  
Frequency Missing = 17  
The SAS System

Table of gender by asq16

gender		asq16					Total
Frequency	Percent	1	2	3	4	5	
1		0	1	0	4	3	8
		0.00	0.44	0.00	1.78	1.33	3.56
2		1	0	4	58	154	217
		0.44	0.00	1.78	25.78	68.44	96.44
Total		1	1	4	62	157	225
		0.44	0.44	1.78	27.56	69.78	100.00

Frequency Missing = 23

Statistics for Table of gender by asq16

Statistic	DF	Value	Prob
Chi-Square	4	30.0643	<.0001

WARNING: 70% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 225  
Frequency Missing = 23  
The SAS System

Table of gender by asq17

gender		asq17				Total
Frequency	Percent	2	3	4	5	
1		1	0	3	4	8
		0.44	0.00	1.33	1.77	3.54
2		0	2	84	132	218
		0.00	0.88	37.17	58.41	96.46
Total		1	2	87	136	226
		0.44	0.88	38.50	60.18	100.00

Frequency Missing = 22

Statistics for Table of gender by asq17

Statistic	DF	Value	Prob
Chi-Square	3	27.4683	<.0001

WARNING: 75% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 226  
Frequency Missing = 22  
The SAS System

Table of gender by asq18

gender		asq18				
Frequency Percent		2	3	4	5	Total
1	0 0.00	2 0.89	1 0.44	5 2.22	8 3.56	
2	1 0.44	9 4.00	76 33.78	131 58.22	217 96.44	
Total	1 0.44	11 4.89	77 34.22	136 60.44	225 100.00	

Frequency Missing = 23

Statistics for Table of gender by asq18

Statistic	DF	Value	Prob
Chi-Square	3	8.0487	0.0450

WARNING: 63% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 225  
Frequency Missing = 23  
The SAS System

Table of group by asq18

group		asq18				
Frequency Percent		2	3	4	5	Total
b	0 0.00	0 0.00	9 3.75	23 9.58	32 13.33	
d	2 0.83	13 5.42	41 17.08	63 26.25	119 49.58	
n	0 0.00	0 0.00	30 12.50	59 24.58	89 37.08	
Total	2 0.83	13 5.42	80 33.33	145 60.42	240 100.00	

Frequency Missing = 8

Statistics for Table of group by asq18

Statistic	DF	Value	Prob
Chi-Square	6	17.8657	0.0066

WARNING: 42% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 240  
Frequency Missing = 8  
The SAS System

Table of group by asq19

group		asq19					
Frequency Percent		1	2	3	4	5	Total
b	1 0.43	1 0.43	0 0.00	6 2.55	24 10.21	32 13.62	
d	0 0.00	1 0.43	10 4.28	47 20.00	61 25.96	119 50.84	
n	0 0.00	0 0.00	0 0.00	28 11.91	56 23.83	84 35.74	
Total	1 0.43	2 0.85	10 4.26	81 34.47	141 60.00	235 100.00	

Frequency Missing = 13

Statistics for Table of group by asq19

Statistic	DF	Value	Prob
Chi-Square	8	25.2858	0.0014

WARNING: 53% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 235  
Frequency Missing = 13  
The SAS System

Table of group by asq20

group		asq20				
Frequency Percent		2	3	4	5	Total
b	0 0.00	0 0.00	8 3.33	24 10.00	32 13.33	
d	1 0.42	11 4.58	42 17.50	85 27.08	119 49.58	
n	0 0.00	1 0.42	20 8.33	68 28.33	89 37.08	
Total	1 0.42	12 5.00	70 29.17	157 65.42	240 100.00	

Frequency Missing = 8

Statistics for Table of group by asq20

Statistic	DF	Value	Prob
Chi-Square	6	16.8792	0.0097

WARNING: 42% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 240  
Frequency Missing = 8  
The SAS System

Table of age by pdn2

age		pdn2				
Frequency	Percent	1	2	3	4	Total
1	4	23	15	1		43
	1.73	9.96	6.49	0.43		18.61
3	12	61	63	28		164
	5.19	26.41	27.27	12.12		71.00
5	2	5	8	9		24
	0.87	2.16	3.46	3.90		10.39
Total	18	89	86	38		231
	7.79	38.53	37.23	16.45		100.00

Frequency Missing = 17

Statistics for Table of age by pdn2

Statistic	DF	Value	Prob
Chi-Square	6	16.6477	0.0107

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 231  
Frequency Missing = 17  
The SAS System

Table of HD by pdn2

HD		pdn2				
Frequency	Percent	1	2	3	4	Total
1	9	38	19	17		83
	3.91	16.52	8.26	7.39		36.09
2	9	51	66	21		147
	3.91	22.17	28.70	9.13		63.91
Total	18	89	85	38		230
	7.83	38.70	36.96	16.52		100.00

Frequency Missing = 18

Statistics for Table of HD by pdn2

Statistic	DF	Value	Prob
Chi-Square	3	11.3807	0.0098

Effective Sample Size = 230  
Frequency Missing = 18  
The SAS System

Table of group by pdn2

group		pdn2				
Frequency	Percent	1	2	3	4	Total
b	4	9	15	4		32
	1.73	3.90	6.49	1.73		13.85
d	7	52	41	11		111
	3.03	22.51	17.75	4.76		48.05
n	7	28	30	23		88
	3.03	12.12	12.99	9.96		38.10
Total	18	89	86	38		231
	7.79	38.53	37.23	16.45		100.00

Frequency Missing = 17

Statistics for Table of group by pdn2

Statistic	DF	Value	Prob
Chi-Square	6	14.3925	0.0255

Effective Sample Size = 231  
Frequency Missing = 17  
The SAS System

Table of age by pdn3

age		pdn3				
Frequency	Percent	1	2	3	4	Total
1	15	20	7	0		42
	6.52	8.70	3.04	0.00		18.26
3	38	75	41	10		164
	16.52	32.61	17.83	4.35		71.30
5	10	7	3	4		24
	4.35	3.04	1.30	1.74		10.43
Total	63	102	51	14		230
	27.39	44.35	22.17	6.09		100.00

Frequency Missing = 18

Statistics for Table of age by pdn3

Statistic	DF	Value	Prob
Chi-Square	6	14.4816	0.0247

Effective Sample Size = 230  
Frequency Missing = 18  
The SAS System

Table of age by pdn5

age		pdn5				Total
Frequency	Percent	1	2	3	4	
1	10 4.35	22 9.57	8 3.48	2 0.87	42 18.26	
3	20 8.70	71 30.87	51 22.17	22 9.57	164 71.30	
5	3 1.30	5 2.17	10 4.35	6 2.61	24 10.43	
Total	33 14.35	98 42.61	69 30.00	30 13.04	230 100.00	

Frequency Missing = 18

Statistics for Table of age by pdn5

Statistic	DF	Value	Prob
Chi-Square	6	14.5278	0.0243

Effective Sample Size = 230  
Frequency Missing = 18  
The SAS System

Table of age by pdn6

age		pdn6				Total
Frequency	Percent	1	2	3	4	
1	16 6.96	15 6.52	7 3.04	4 1.74	42 18.26	
3	30 13.04	74 32.17	43 18.70	17 7.39	164 71.30	
5	5 2.17	9 3.91	2 0.87	8 3.48	24 10.43	
Total	51 22.17	98 42.61	52 22.61	29 12.61	230 100.00	

Frequency Missing = 18

Statistics for Table of age by pdn6

Statistic	DF	Value	Prob
Chi-Square	6	19.7054	0.0031

Effective Sample Size = 230  
Frequency Missing = 18  
The SAS System

Table of group by pdn7

group		pdn7				Total
Frequency	Percent	1	2	3	4	
b	2 0.88	8 3.51	14 6.14	8 3.51	32 14.04	
d	11 4.82	41 17.98	44 19.30	14 6.14	110 48.25	
n	5 2.19	21 9.21	24 10.53	36 15.79	86 37.72	
Total	18 7.89	70 30.70	82 35.96	58 25.44	228 100.00	

Frequency Missing = 20

Statistics for Table of group by pdn7

Statistic	DF	Value	Prob
Chi-Square	6	22.8866	0.0008

Effective Sample Size = 228  
Frequency Missing = 20  
The SAS System

Table of output by pdn8

output		pdn8				Total
Frequency	Percent	1	2	3	4	
1	10 4.52	19 8.60	3 1.36	2 0.90	34 15.38	
2	18 8.14	49 22.17	29 13.12	10 4.52	106 47.96	
3	27 12.22	28 12.67	14 6.33	12 5.43	81 36.85	
Total	55 24.89	96 43.44	46 20.81	24 10.86	221 100.00	

Frequency Missing = 27

Statistics for Table of output by pdn8

Statistic	DF	Value	Prob
Chi-Square	6	15.2882	0.0181

Effective Sample Size = 221  
Frequency Missing = 27

WARNING: 11% of the data are missing  
The SAS System

Table of age by pdn10

age		pdn10				
Frequency	Percent	1	2	3	4	Total
1	8	22	10	2		42
	3.49	9.61	4.37	0.87		18.34
3	16	76	57	15		164
	6.99	33.19	24.89	6.55		71.62
5	3	8	5	7		23
	1.31	3.49	2.18	3.06		10.04
Total	27	106	72	24		229
	11.79	46.29	31.44	10.48		100.00

Frequency Missing = 19

Statistics for Table of age by pdn10

Statistic	DF	Value	Prob
Chi-Square	6	15.8442	0.0146

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test

Effective Sample Size = 229  
Frequency Missing = 19

Table of group by ce#1

group		ce#1			
Frequency	Percent	1	2	3	Total
b	7	16	4		27
	3.61	8.25	2.06		13.92
d	25	71	9		105
	12.89	36.80	4.84		54.12
n	5	41	16		62
	2.58	21.13	8.25		31.96
Total	37	128	29		194
	19.07	65.98	14.95		100.00

Frequency Missing = 54

Statistics for Table of group by ce#1

Statistic	DF	Value	Prob
Chi-Square	4	13.8139	0.0079

Effective Sample Size = 194  
Frequency Missing = 54

WARNING: 22% of the data are missing  
The SAS System

Table of HD by ce#2

HD		ce#2			
Frequency	Percent	1	2	3	Total
1	12	54	8		72
	6.22	27.98	3.11		37.31
2	30	70	21		121
	15.54	36.27	10.88		62.69
Total	42	124	27		193
	21.76	64.25	13.99		100.00

Frequency Missing = 55

Statistics for Table of HD by ce#2

Statistic	DF	Value	Prob
Chi-Square	2	6.0625	0.0483

Effective Sample Size = 193  
Frequency Missing = 55

WARNING: 22% of the data are missing.  
The SAS System

Table of group by ce#2

group		ce#2			
Frequency	Percent	1	2	3	Total
b	7	16	4		27
	3.61	8.25	2.06		13.92
d	29	68	8		105
	14.95	35.05	4.12		54.12
n	6	41	15		62
	3.09	21.13	7.73		31.96
Total	42	125	27		194
	21.65	64.43	13.92		100.00

Frequency Missing = 54

Statistics for Table of group by ce#2

Statistic	DF	Value	Prob
Chi-Square	4	13.9154	0.0076

Effective Sample Size = 194  
Frequency Missing = 54

WARNING: 22% of the data are missing  
The SAS System

Table of age by cem3

age		cem3			Total
Frequency	Percent	1	2	3	
1	29	11	2	42	18.50
	12.78	4.85	0.88		
3	83	78	0	161	
	36.56	34.36	0.00	70.93	
5	11	12	1	24	10.57
	4.85	5.29	0.44		
Total	123	101	3	227	
	54.19	44.49	1.32	100.00	

Frequency Missing = 21

Statistics for Table of age by cem3

Statistic	DF	Value	Prob
Chi-Square	4	13.4776	0.0092

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 227  
 Frequency Missing = 21  
 The SAS System

Table of age by cem4

age		cem4			Total
Frequency	Percent	1	2	3	
1	28	12	2	42	18.56
	12.39	5.31	0.88		
3	79	81	0	160	
	34.96	35.84	0.00	70.80	
5	12	11	1	24	10.62
	5.31	4.87	0.44		
Total	119	104	3	226	
	52.65	46.02	1.33	100.00	

Frequency Missing = 22

Statistics for Table of age by cem4

Statistic	DF	Value	Prob
Chi-Square	4	12.7547	0.0125

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 226  
 Frequency Missing = 22  
 The SAS System

Table of gender by cem6

gender		cem6			Total
Frequency	Percent	1	2	3	
1	2	2	4	8	3.54
	0.88	0.88	1.77		
2	23	148	49	218	
	10.18	64.60	21.88	96.46	
Total	25	148	53	226	
	11.06	65.49	23.45	100.00	

Frequency Missing = 22

Statistics for Table of gender by cem6

Statistic	DF	Value	Prob
Chi-Square	2	8.0251	0.0492

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 226  
 Frequency Missing = 22  
 The SAS System

Table of age by cem7

age		cem7			Total
Frequency	Percent	1	2	3	
1	4	16	23	43	19.11
	1.78	7.11	10.22		
3	10	87	82	159	
	4.44	29.78	36.44	70.67	
5	4	1	18	23	10.22
	1.78	0.44	8.00		
Total	18	84	123	225	
	8.00	37.33	54.67	100.00	

Frequency Missing = 23

Statistics for Table of age by cem7

Statistic	DF	Value	Prob
Chi-Square	4	13.5266	0.0090

WARNING: 22% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Effective Sample Size = 225  
 Frequency Missing = 23  
 The SAS System



Table of HD by ce#8

		ce#8				
HD	Frequency Percent	1	2	3	Total	Percent
		1	13 5.86	44 19.82		
2	14 6.31	64 28.83	64 28.83	142 63.96		
Total	27 12.16	108 48.65	87 39.19	222 100.00		

Frequency Missing = 26

Statistics for Table of HD by ce#8

Statistic	DF	Value	Prob
Chi-Square	2	6.2335	0.0443

Effective Sample Size = 222  
Frequency Missing = 26

WARNING: 10% of the data are missing  
The SAS System

Table of salarypp by ce#8

		ce#8				
salarypp	Frequency Percent	1	2	3	Total	Percent
		1	18 8.07	65 29.15		
2	7 3.14	39 17.49	42 18.83	88 39.46		
3	2 0.90	5 2.24	9 4.04	16 7.17		
Total	27 12.11	109 48.88	87 39.01	223 100.00		

Frequency Missing = 25

Statistics for Table of salarypp by ce#8

Statistic	DF	Value	Prob
Chi-Square	4	9.6184	0.0474

Effective Sample Size = 223  
Frequency Missing = 25

WARNING: 10% of the data are missing  
The SAS System

Table of salarypp by ce#9

		ce#9				
salarypp	Frequency Percent	1	2	3	Total	Percent
		1	15 6.58	70 30.70		
2	5 2.19	48 21.05	36 15.79	89 39.04		
3	5 2.19	7 3.07	5 2.19	17 7.46		
Total	25 10.96	125 54.82	78 34.21	228 100.00		

Frequency Missing = 20

Statistics for Table of salarypp by ce#9

Statistic	DF	Value	Prob
Chi-Square	4	10.1934	0.0373

Effective Sample Size = 228  
Frequency Missing = 20  
The SAS System

APPENDIX F  
T-TEST TABLES

**GENDER**

The TTEST Procedure

T-Tests

Variable	Method	Variances	DF	t Value	Pr >  t
position	Pooled	Equal	214	0.96	0.3405
position	Satterthwaite	Unequal	8.22	1.37	0.2074
package	Pooled	Equal	215	-0.04	0.9655
package	Satterthwaite	Unequal	7.52	-0.04	0.9673
tangible	Pooled	Equal	205	0.25	0.8014
tangible	Satterthwaite	Unequal	7.4	0.21	0.8370
reliabil	Pooled	Equal	223	-2.58	0.0105
reliabil	Satterthwaite	Unequal	7.25	-1.84	0.1072
responsv	Pooled	Equal	216	-1.62	0.1076
responsv	Satterthwaite	Unequal	7.95	-2.08	0.0717
assuranc	Pooled	Equal	221	-2.00	0.0467
assuranc	Satterthwaite	Unequal	7.3	-1.54	0.1654
empathy	Pooled	Equal	217	-1.29	0.1991
empathy	Satterthwaite	Unequal	7.49	-1.24	0.2540

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	N	Mean	Mean	Mean	Sdt.Dev	Std.Dev	Upper CL	Std. Err
reliabil	8	19.712	21.875	24.038	1.711	2.5877	5.2668	0.9149
reliabil	217	23.331	23.571	23.812	1.6419	1.7965	1.9835	0.122
reliabil	Diff (1-2)	-2.992	1.696	-0.401	1.6716	1.8266	2.0134	0.6576

	N	Mean	Mean	Mean	St. Dev	St. Dev	Upper CL	Std. Err
assuranc 1	8	14.666	16.875	19.084	1.7471	2.6424	5.378	0.9342
assuranc 2	215	18.062	18.33	18.599	1.8245	1.9971	2.2061	0.1362
assuranc Diff(1-2)		-2.889	-1.455	-0.021	1.8486	2.0207	2.2285	0.7276

### Highest Degree

#### T-Tests

Variable	Method	Variances	DF	t Value	Pr >  t
strategy	Pooled	Equal	215	0.04	0.9698
strategy	Satterthwaite	Unequal	157	0.04	0.9703
product	Pooled	Equal	218	0.50	0.6156
product	Satterthwaite	Unequal	161	0.50	0.6182
price	Pooled	Equal	214	2.56	0.0111
price	Satterthwaite	Unequal	154	2.50	0.0134
place	Pooled	Equal	213	1.74	0.0829
place	Satterthwaite	Unequal	141	1.66	0.0983
partner	Pooled	Equal	218	0.70	0.4870
partner	Satterthwaite	Unequal	158	0.69	0.4932
people	Pooled	Equal	204	2.17	0.0315
people	Satterthwaite	Unequal	148	2.11	0.0363
promote	Pooled	Equal	219	-0.37	0.7101
promote	Satterthwaite	Unequal	159	-0.37	0.7132

		<b>N</b>	<b>Mean</b>	<b>Mean</b>	<b>Mean</b>	<b>St. Dev</b>	<b>St. Dev</b>	<b>Upper CL</b>	<b>St. Err</b>
price		80	5.4326	5.9375	6.4424	1.9636	2.2689	2.6875	0.2537
price	1								
price	2	136	4.8095	5.1618	5.514	1.8561	2.0771	2.3583	0.1781
price	Diff (1-2)		0.1786	0.7757	1.3728	1.9641	2.1499	2.3749	0.3029
people		77	5.1331	5.6623	6.1916	2.0128	2.3318	2.7719	0.2657
people	1								
people	2	129	4.6082	4.9767	5.3453	1.8852	2.1157	2.4108	0.1863
people	Diff (1-2)		0.0613	0.6856	1.3099	2.0044	2.1987	2.4349	0.3166

APPENDIX G  
ADDITIONAL PROFESSIONAL DEVELOPMENT NEEDS

## ADDITIONAL PROFESSIONAL DEVELOPMENT NEEDS

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### **Needs**

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Stress Management  
Project Management Skills  
Technical  
Handling Success/Failure  
Information Management  
Paper Management  
Mentoring  
Ethics  
Food Service Update Skills  
Skills to Change Specialty  
Editorial/Writing Skills  
Venture Capital  
Grants

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VITA

Mandy Renee Caid-Jefferson

Candidate for the Degree of

Master of Science

Thesis: SERVICES MARKETING SKILLS, SERVICE QUALITY ATTITUDES AND PROFESSIONAL DEVELOPMENT NEEDS OF NON-TRADITIONAL DIETITIANS

Major Field: Nutritional Sciences

Biographical:

Personal Data: Born in Mangum, OK, July 13, 1976, the daughter of Skip and Debra Caid. Married Alan Jefferson August 9, 1997.

Education: Graduated from Granite High School, Granite, Oklahoma in May 1994; received a Bachelor of Science degree in Dietetics from Oklahoma State University, Stillwater, Oklahoma in May 1999; enrolled in the graduate program at Oklahoma State University, 1999-2000; completed the Dietetic Internship at Oklahoma State University in May 2000; completed requirements for the Master of Science degree at Oklahoma State University in December, 2000.

Professional Experience: Student Technical Paraprofessional for NSCI Department, Oklahoma State University, August 1996-May 1999; Graduate Teaching Assistant, June 1999-December 2000; Dietetic Intern, St. Francis Health System, Tulsa, Oklahoma, June 1999-July 1999 and January 2000-March 2000

Professional Organizations: The American Dietetic Association, The Oklahoma Dietetic Association, Kappa Omicron Nu.