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## A Marketing Plan for a Mature Dental Practice

Linda C. Keup

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A MARKETING PLAN  
FOR A MATURE DENTAL PRACTICE

by

Linda C. Keup

Bachelor of Science, Minot State College

An Independent Study

Submitted to the Graduate Faculty of

The University of North Dakota

in partial fulfillment of the requirements

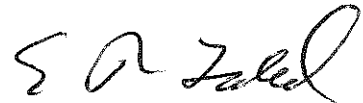
for the degree of

Master of Business Administration

The University of North Dakota Graduate Center  
May, 1987

APPROVAL PAGE

This independent study submitted by Linda C. Keup in partial fulfillment of the requirements for the Degree of Master of Business Administration from the University of North Dakota is hereby approved by the Faculty Advisor under whom the work has been done. This independent study meets the standards for appearance and conforms to the style and format of the Graduate School of the University of North Dakota.



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E. Ray Ladd

PERMISSION

Title: A MARKETING PLAN FOR THE MATURE DENTAL PRACTICE

Department: School of Business and Public Administration

Degree: Master of Business Administration

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Signature Linda C. Kemp

Date May 8, 1987

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Without the unfailing support of my husband, David and children, Sarah, Ben, and Chrissy, this program would remain a "dream for tomorrow."

ABSTRACT

A MARKETING PLAN FOR THE MATURE DENTAL PRACTICE

Linda C. Keup

The University of North Dakota Graduate Center

Faculty Advisor: E. Ray Ladd

The market faced by a dental practitioner today is radically different from the one twenty years ago. Thus, the mature dental practice must adapt and change in response.

The cultural, social and legal issues which have created today's dental marketplace are examined through a review of the literature.

By means of an internal audit of the staff and a survey of current patients, attitudes toward one dental practice were acquired. Results of those surveys are explored for predictability. Demographic data was also gathered from the surveys, and the market currently served is identified. Additional target markets are identified and appropriate marketing concepts defined.

Finally, based on research results, literature review and corporate mission, a marketing plan for this particular dental practice was developed.



## CHAPTER I

### Purpose

The purpose of this study is to produce an appropriate and workable marketing plan for one dental practice in Minot, North Dakota.

In order to produce such a plan, it is necessary to examine the cultural, social and legal issues which have brought dentistry to a consumer-oriented and business minded profession.

In addition to background information from the survey of the literature, primary research was done in the dental practice itself. The methodology of this research involved an internal audit of staff members to assess their perceptions of the practice. Also, a survey of 1000 current patients was conducted under the auspices of Health Systems Management, P.O. Box 306, Alamo, California. Reactions to and attitudes toward this dental practice were assessed and demographic data gathered as well.

The doctor developed a philosophy and a mission statement, based on his beliefs about the dental practice and its stakeholders.

From these resources, then, was the marketing plan developed.

## SCOPE

This study involves one dental practice in Minot, North Dakota. It is a plan designed for use in an office of a single practitioner doing general dentistry. In this office, assignment of benefits is accepted, but there is no participation in Health Maintenance Organizations, Preferred Provider Organizations, Individual Practice Associations, or Capitation plans.

It is not intended to be a universal tool, used without the primary research. Variations in demographic and psychographic characteristics preclude this study and its resulting marketing plan from being used by other practices. Similar research and analysis of findings in other practices could lead to a similar marketing plan, however.

## LIMITATIONS

The analyses are based on self-reported data, which presents two potential problems: people generally tell us what they think we want to hear; and since selection of a dentist is a freely made choice, an individual may appear to have failed to make the right choice if the dentist he/she selected scores low.

The analysis was based on a quantifiable integer being assigned to each response. Statistical analysis was performed by SAS software, and the assumption is made that the software operated correctly in its calculations.

## CHAPTER II

### Changes in Demand and Causes

During the decades of the 1950s, 1960s and 1970s, there occurred a series of events which ultimately led to what some believe to be a crisis in dentistry today. Demand for dental services is dropping as the supply of dentists is an all time high.

In the late 1950s and early 1960s, there began a concerted effort to expand the duties of dental auxiliaries (assistants and hygienists). This significantly increased the production potential of dentists.<sup>1</sup>

Tooth decay has declined by about 50% since the mid 1960s. Better nutrition which leads to better overall health and improved dental work are contributors, but the real key is the fluoridation of drinking water, started in 1946 in Grand Rapids, Michigan.<sup>2</sup> By 1983, a full 53% of the American population had access to fluoridated water supplies.

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<sup>1</sup>/Dr. Chester W. Douglass, "A Brighter Outlook," Dental Economics (April 1986):41-58.

<sup>2</sup>Richard Greene, "What's good for America isn't necessarily good for the dentists," Forbes (August 13, 1984): 79-81.

This cavity bust was accompanied by a baby bust--the number of children aged 5-13 fell 17% and the number of 14-17 year olds dropped 6%.<sup>3</sup>

The number of dentists soared just when fewer children with less decay were seeking treatment.<sup>4</sup> This oversupply of practitioners resulted from the Health Profession Assistance Legislation.<sup>5</sup> The federal government perceived that Americans were not receiving adequate dental care and through the aforementioned legislation, increased its funding for dental education. As a result, the number of first year dental students rose to 6300 in 1978 from 3000 in 1961. Recently, dental schools have been responsive to the oversupply and the number of first year students fell to 4700 in 1985.<sup>6</sup>

Increased specialization also occurred during the early 1970s.

The development of competition has come from alternative delivery systems such as health maintenance organizations, preferred provider organizations, individual practice associations, corporate dental facilities, retail dentistry, and franchises. Franchises come in three forms: the traditional which sells franchise rights to dentists opening offices of their own;

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<sup>3</sup>Thomas G. Exter, "Dental Demographics," American Demographics (February 1985) : 31-33.

<sup>4</sup>Ibid.

<sup>5</sup>Douglass, p. 41.

<sup>6</sup>Ibid.

second, the franchise which opts for mall locations; and third, the Century 21 style which offers a brand name and an ad program to dentists who wish to continue on their own.<sup>7</sup> These franchises and retail dental clinics usually offer extended hours, instant care, lower fees and the security of a brand name for a mobile population.<sup>8</sup>

Competition has also arrived in alternative financing systems. Dental insurance coverage has increased substantially. Capitation plans, which pay dentists a monthly fee for each employee of participating organizations, regardless of the amount of dental work performed, are becoming popular.

#### Future Demand and Opportunities

And what of future demand?

A recent Gallup poll showed that 81% of all Americans believe being in good health is very important.<sup>9</sup> Dental practitioners can expect increased importance to be placed on dental health as a result. In addition, this generation is generally more aware of their oral health and dentists can translate that into involve-

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<sup>7</sup>Julie Liesse Erickson, "Franchises biting into dental business," Advertising Age (November 8, 1984): 28.

<sup>8</sup>Ibid, p.29.

<sup>9</sup>C. Rubestein, "Wellness is all...", Psychology Today 16 (October, 1982): 30.

ment.<sup>10</sup>

Only about one half of the American population sees a dentist on anything approaching a regular basis. A serious gap still exists between dental needs and demand for dental care.<sup>11</sup>

In 1979, the Surgeon General's report "Healthy People" outlined twelve objectives for achieving improved oral health in the U.S. These objectives include reduction of dental caries in children; assurance of fluoridated water supplies; education in oral hygiene practices and preventive measures; elimination of highly cariogenic snacks from school lunch programs and vending machines; reduction of gingivitis and periodontal disease; requirement of mouth guards in organized contact sports; and early identification of oral cancers.<sup>12</sup> Dental professionals have varied opportunities in meeting these objectives.

Whereas the traditional dentist focused on restoration of carious teeth, and replacement of teeth lost to disease, today's dentist will be more involved in preventive and esthetic dentistry and control and treatment of oral disease.<sup>13</sup> As our population

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<sup>10</sup>Elizabeth Giangrego, comp., "Changing Treatment needs of the Postfluoride Generation," Journal of the American Dental Association 112 (March 1986): 317.

<sup>11</sup>D. Grembowski, "Utilization of dental services in the U.S. and an insured population," American Journal of Public Health 75 (January 8, 1985): 87.

<sup>12</sup>Stephen B. Corbin, Dushanka V. Kleinman, and J. Michael Lane, "New Opportunities for Enhancing Oral Health: Moving Toward the 1990 Objectives for the Nation," Public Health Reports 100 (September-October 1985):516-520.

<sup>13</sup>Giangrego, pp. 316-317.

ages, more of them will retain their own dentition for longer periods. Therefore restorative work such as crowns, bridges, implants, partial and full dentures, will increase in demand.

Baby boomers experienced high rates of cavities as children and will need more complex dental care the rest of their lives.<sup>14</sup>

A recent study revealed that in a population which has large rates of insurance coverage, utilization of dental services exceeds the U.S. rate.<sup>15</sup>

Opportunities, thus, do exist for the astute dental practitioner who recognizes them and is prepared to adapt to this changing and increasingly competitive environment. As dentistry becomes more of a competitive enterprise, it requires an increasing awareness of the value and need for effective marketing.

#### Marketing and Advertising the Dental Practice

Factors mentioned previously--increasingly competitive environment, changing demographics, and a decreasing incidence of tooth decay all have created a niche for marketing the dental practice.

In fact, some faculty members in medicine, nursing, pharmacy and allied health fields have acknowledged the importance of and need for all health care students to study marketing. They feel that it would be good for the students and would ultimately

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<sup>14</sup>Exter, p. 32.

<sup>15</sup>Grembowski, p. 87.



benefit health care delivery, promote quality patient care, and result in cost effectiveness. Others oppose the concept based on health care being an altruistic field and an inappropriate forum for discussing selling or promoting.<sup>16</sup>

These two divergent views are indicative of the dental profession's view of marketing and advertising.

Evidence of this is the decision by American Dental Association members to turn down a proposal for a national ad campaign in the fall of 1984.<sup>17</sup> The ADA has been using Operation Outreach to help members distinguish between marketing and advertising and, according to Robert Roach, ADA Executive Director for Communications, the outlook for dental marketing is good.<sup>18</sup>

Until recently, the ADA imposed a code of conduct on its membership prohibiting almost all promotional activities. "The U.S. Supreme Court decision in *Bates and O'Steen versus State Bar of Arizona* (1977) ruled such restrictions on advertising to be a violation of free speech and effectively struck down most ethical prohibitions. Moreover, the Federal Trade Commission, arguing that consumers should not be deprived of the free flow of information, has fought to subject the American Dental Association and other professional associations to Federal antitrust legislation that prohibits restricting advertising (other than false or

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<sup>16</sup>Susan R. Carroll, "Health Care Students ought to learn marketing," Marketing News (July 18, 1986): 14.

<sup>17</sup>"Dentists Give Brush to proposal to launch ad campaign," Marketing News 18 (December 7, 1984): 1.

<sup>18</sup>Ibid.

misleading."<sup>19</sup>

Few dentists are taking advantage of recently acquired access to advertising. A 1982 survey indicates fairly strong aversion to advertising by dentists themselves. Consumers were much more tolerant and accepting of the ads. Dentists believe that advertising will not enhance the profession's image and that advertising cannot communicate the technical complexity and varying qualities of work offered.<sup>20</sup>

The results of this study are significant in pointing up opinion differences between dentists and consumers.

It is possible that dentists have a different perception of what attributes are important to consumers. In a study in Great Britain, competence was ranked first, followed by likeable, careful, social, trustworthy, gentle, and sympathetic.<sup>21</sup>

Dental practitioners have long revered technical excellence and paid scant attention to those skills which their patients consider most important.

As Avrom King has stated, "Perception is reality."<sup>22</sup> If a dental practice is to adopt a "marketing concept", it will become

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<sup>19</sup>Irwin A. Shapiro and Robert F. Majewski, "Should Dentists Advertise?" Journal of Advertising Research 23 (June/July 1983): p. 33.

<sup>20</sup>Ibid, pp.35-36.

<sup>21</sup>Andree Liddell and Brenda May, "Patients' perceptions of dentists' positive and negative attributes," Social Science and Medicine 19:8, 1984: 840.

<sup>22</sup>Avrom E. King, "How to Write Philosophy/Mission Statements for Your Dental Practice, a tape program by the Nexus Group, Inc., 1986.

more consumer-oriented, listening to those perceptions of its consumer/patients.

## Summary

In this chapter, a survey of the literature concerning health care and specifically dental marketing was examined.

Factors responsible for the current interest in and need for marketing were explored. Opportunities for the future were identified and legal and professional attitudes toward marketing and advertising were examined.

## CHAPTER III METHODOLOGY

### Internal Audit of the Staff

As the first step in developing a marketing plan, an internal practice audit was taken of the current staff members. Five staff members were surveyed, including two chairside assistants, one hygienist and two business coordinators. These individuals have been employed in the practice from three to twenty years.

Each of the marketing mix components - product, price, place, promotion - was surveyed. The objective was to determine staff perceptions of the practice and to determine whether staff members have a clear concept of the aims and philosophy of the practice. Any areas in need of attention would also be highlighted by the results of the audit.

It is important to note that in the product questions, only two relate to actual technical dental work. The remainder deal with "customer service"-- patients being treated with warmth, gentleness, respect and care.

Before a dental practice can successfully present itself to the public, all members of that team must be in tune with the philosophy of the practice and committed to it. The aim of this audit is to provide a springboard for discussion of that philosophy and each staff member's role in marketing it.

The audit was completed privately by each staff member and

returned anonymously in an envelope. A sample copy is found on the following pages.

## THE INTERNAL PRACTICE AUDIT

exercise is the key first step in the collection of data essential to developing a plan. We get our act together before we can successfully present it to the public. All members of the team, including the doctor, should answer each question privately. There are no right or wrong answers. Tabulating the responses will enhance our insight into the current state of our marketing mix (Product, Price, Place, Promotion).

Place a check mark under the single most appropriate response.

	<u>Always</u>	<u>Usually</u>	<u>Some- times</u>	<u>Rarely</u>	<u>Never</u>
<b>PRODUCT</b>					
Our office offers a full range of dental services.	_____	_____	_____	_____	_____
We emphasize prevention and patient education.	_____	_____	_____	_____	_____
The quality of our dental service is excellent.	_____	_____	_____	_____	_____
Doctors use the latest techniques and continue their education.	_____	_____	_____	_____	_____
Patients believe our practice is unique.	_____	_____	_____	_____	_____
Patients calling our office are given an appointment within one week or less.	_____	_____	_____	_____	_____
All incoming phone lines are never busy at the same time.	_____	_____	_____	_____	_____
The person who answers the phone is warm, friendly and courteous.	_____	_____	_____	_____	_____
Emergencies are seen promptly.	_____	_____	_____	_____	_____
Appointments suit patients' convenience; i.e., evenings, weekends.	_____	_____	_____	_____	_____
Patients are greeted promptly by name as soon as they enter the reception area.	_____	_____	_____	_____	_____
Patients are left alone while they are waiting and being treated 5-10 minutes or less.	_____	_____	_____	_____	_____
At least one member of the team knows each patient personally.	_____	_____	_____	_____	_____
Patients feel loyal to our practice.	_____	_____	_____	_____	_____
We treat our patients with tender loving care.	_____	_____	_____	_____	_____

	<u>Always</u>	<u>Usually</u>	<u>Some- times</u>	<u>Rarely</u>	<u>Never</u>
The majority of our patients are easy to handle.	_____	_____	_____	_____	_____
Each new patient receives a tour of our offices.	_____	_____	_____	_____	_____
Patients receive a follow-up call after treatment.	_____	_____	_____	_____	_____
Over 80% of our patients accept full, recommended treatment plans.	_____	_____	_____	_____	_____
Doctor/staff/patient communications are good to excellent.	_____	_____	_____	_____	_____
Patients can see that staff members enjoy their work.	_____	_____	_____	_____	_____
Staff members are comfortable with the type of patients we serve.	_____	_____	_____	_____	_____
Our office has regular staff meetings to which every member of the team contributes.	_____	_____	_____	_____	_____

**PRICE**

Patients are fully informed about fees.	_____	_____	_____	_____	_____
Patients perceive our fees as reasonable.	_____	_____	_____	_____	_____
We offer special packages -- examination, x-rays, consultation -- for new patients.	_____	_____	_____	_____	_____
Financial arrangements are clearly explained before treatment begins.	_____	_____	_____	_____	_____
We try hard to work out a payment plan the patient can afford.	_____	_____	_____	_____	_____
Our office has a comprehensive fee list.	_____	_____	_____	_____	_____
We offer assistance to patients with third party payments.	_____	_____	_____	_____	_____
We accept credit cards and/or insurance assignments as well as cash.	_____	_____	_____	_____	_____
Discounts are offered for certain groups, (i.e., senior citizens).	_____	_____	_____	_____	_____



	<u>Always</u>	<u>Usually</u>	<u>Some- times</u>	<u>Rarely</u>	<u>Never</u>
have no problem talking with patients out money.	_____	_____	_____	_____	_____
work to make patients want the treatment they need.	_____	_____	_____	_____	_____
have very few complaints from pat- ients about fees.	_____	_____	_____	_____	_____
es are reevaluated at least once a ar.	_____	_____	_____	_____	_____
cedures exist for dealing with com- plaints/disputes about bills.	_____	_____	_____	_____	_____
r patients are "sold" on our practice before fees are discussed and treatment options.	_____	_____	_____	_____	_____
<b>PLACE</b>					
outside of our building and its grounds is attractive, neat and clean.	_____	_____	_____	_____	_____
office location is easy for new patients to find.	_____	_____	_____	_____	_____
office sign is clearly visible to passersby.	_____	_____	_____	_____	_____
other types of service businesses are located in the same building or nearby.	_____	_____	_____	_____	_____
office is accessible for disabled and elderly patients.	_____	_____	_____	_____	_____
there is adequate parking for patients.	_____	_____	_____	_____	_____
office is located on or near public transportation.	_____	_____	_____	_____	_____
office decor reflects our image.	_____	_____	_____	_____	_____
entire office (reception area, operatories, exam rooms, etc.) is clean at all times.	_____	_____	_____	_____	_____
Wallpaper, paint, upholstery look new and well-maintained.	_____	_____	_____	_____	_____
reception area is inviting and well-lit.	_____	_____	_____	_____	_____
reception furniture is comfortable.	_____	_____	_____	_____	_____
Reading material in reception area is current and up-to-date.	_____	_____	_____	_____	_____

	<u>Always</u>	<u>Usually</u>	<u>Some- times</u>	<u>Rarely</u>	<u>Never</u>
Office decor is personalized with doctor's and staff's interests and/or talents.	_____	_____	_____	_____	_____
Staff is appropriately dressed for practice's image.	_____	_____	_____	_____	_____
Staff is well-groomed.	_____	_____	_____	_____	_____
Dental equipment looks modern and sparkling clean.	_____	_____	_____	_____	_____
Areas are set aside for patients' privacy during consultations.	_____	_____	_____	_____	_____
Patients are visible to staff as soon as they arrive in reception area.	_____	_____	_____	_____	_____

### PROMOTION

All of our staff actively refers to our practice.	_____	_____	_____	_____	_____
Staff is trained in asking patients for referrals.	_____	_____	_____	_____	_____
Staff asks all patients for referrals.	_____	_____	_____	_____	_____
The majority of our patients refer to our practice.	_____	_____	_____	_____	_____
Patients receive cards on special occasions; i.e., birthday, graduation.	_____	_____	_____	_____	_____
Patients giving referrals receive a gift or other reward.	_____	_____	_____	_____	_____
New patients are sent welcoming letters and practice brochures.	_____	_____	_____	_____	_____
All patients are sent prompt recall notices.	_____	_____	_____	_____	_____
Reception area has bulletin board with pictures of patients, their interests, talents.	_____	_____	_____	_____	_____
We send congratulations and educational materials to new patients.	_____	_____	_____	_____	_____
We report back promptly to referring doctors.	_____	_____	_____	_____	_____
Our doctor projects enthusiasm about dentistry.	_____	_____	_____	_____	_____
We've introduced our practice to local pharmacists.	_____	_____	_____	_____	_____

	<u>Always</u>	<u>Usually</u>	<u>Some- times</u>	<u>Rarely</u>	<u>Never</u>
Patients leave with some reminder of our office; e.g., pen, memo pad with our name.	_____	_____	_____	_____	_____
Everybody on the team takes an active role in promoting the practice.	_____	_____	_____	_____	_____
Doctor or other staff members give public talks.	_____	_____	_____	_____	_____
Doctor makes presentations at professional meetings.	_____	_____	_____	_____	_____
Staff understands office image we're marketing.	_____	_____	_____	_____	_____

Thank you for your assistance. Please place this in the envelope and return to the staff member in charge of scoring.

You may score your own answers below, or turn it in to the assigned scorer, who will compute the score for you.

- each Always score 5 points
- each Usually score 4 points
- each Sometimes score 3 points
- each Rarely score 2 points
- each Never score 1 point

Sum up your scores for each section, and place them in the blanks below:

**PRODUCT** \_\_\_\_\_ points ÷ 23 = \_\_\_\_\_

**PRICE** \_\_\_\_\_ points ÷ 15 = \_\_\_\_\_

**PLACE** \_\_\_\_\_ points ÷ 19 = \_\_\_\_\_

**PROMOTION** \_\_\_\_\_ points ÷ 18 = \_\_\_\_\_

## Survey of Current Patients

The survey was designed by and made available to subscribers of The Press Report and its parent company, Health Systems Management. It was duplicated and mailed, with a cover letter and an addressed stamped envelope to 1000 patients of record. Copies of both the survey and the letter are found in the Appendix.

Health Systems Management acted as a mail-drop, extrapolating information pertinent to national data gathering and then returned all surveys to us. It was believed that people would be more honest in their evaluations if the survey were not returned directly to the dental office.

The purpose of the survey was to learn patients' perceptions of this practice, identify demographic variables and to highlight areas needing attention relative to a marketing plan.

November 20, 1986

Dear Patient:

Our office is one of a select group which has been invited to participate in a national survey of consumer attitudes about dentistry. Because you are one of our valued patients, we are asking you to help us serve you better by taking the time to fill out the enclosed survey form.

We are delighted at this opportunity to participate, because we believe the results of the survey will help us improve our quality of service to our patients. Each participating doctor's office will receive a report about the attitudes and concerns of its patients and a comparative analysis with other offices around the country.

But, in order to participate, we need your help. Please take a few minutes to honestly and objectively respond to each question on the survey form. All replies are anonymous and confidential. Simply place your completed form in the enclosed, stamped envelope, which is pre-addressed to Health Systems Management, and drop it in the mail.

Thank you very much.

Sincerely,

## ATTITUDES ABOUT DENTISTS AND DENTISTRY

Dental Consumer: Thank you for participating in this special national survey. Please take  
 ment to complete the following questionnaire. For questions 1 through 27, mark the box  
 most closely matches your opinion. The remaining questions are self-explanatory.

	<u>Strongly</u> <u>Agree</u>	<u>Agree</u>	<u>Don't</u> <u>Know</u>	<u>Disagree</u>	<u>Strongly</u> <u>Disagree</u>
When phoning my dentist's office, I usually receive prompt, courteous attention.	_____	_____	_____	_____	_____
Members of the staff are friendly and courteous.	_____	_____	_____	_____	_____
The dentist really listens to me.	_____	_____	_____	_____	_____
The dentist seldom spends enough time with me.	_____	_____	_____	_____	_____
The dentist explains things to me in plain, simple English.	_____	_____	_____	_____	_____
The dentist seems to remember me from visit to visit.	_____	_____	_____	_____	_____
The dentist and his staff do not look professional.	_____	_____	_____	_____	_____
I wouldn't consider changing dentists.	_____	_____	_____	_____	_____
I usually have to wait too long when I arrive at the office.	_____	_____	_____	_____	_____
The dentist helps calm my fears about treatment.	_____	_____	_____	_____	_____
The office location is inconvenient.	_____	_____	_____	_____	_____
It's easy to find parking close to the office.	_____	_____	_____	_____	_____
The office hours are convenient.	_____	_____	_____	_____	_____
The dentist's office is easy to find.	_____	_____	_____	_____	_____
The dentist's office is not clean.	_____	_____	_____	_____	_____
The reception area is comfortable.	_____	_____	_____	_____	_____
The dentist asks too many personal questions.	_____	_____	_____	_____	_____
I am told in advance what the treatment will cost.	_____	_____	_____	_____	_____
The dentist's fees are too high.	_____	_____	_____	_____	_____

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Don't Know</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
The dentist is willing to discuss special payment terms.	_____	_____	_____	_____	_____
The dentist and his staff are gentle, careful and competent.	_____	_____	_____	_____	_____
I feel my time is respected.	_____	_____	_____	_____	_____
I don't think the dentist keeps up with the latest in dentistry.	_____	_____	_____	_____	_____
It's difficult to get an appointment on short notice.	_____	_____	_____	_____	_____
The dentist and his staff have taught me a great deal about taking care of my teeth.	_____	_____	_____	_____	_____
Overall, I am quite satisfied with the care I receive.	_____	_____	_____	_____	_____
I feel very nervous about visiting the dentist.	_____	_____	_____	_____	_____
I have referred others to this dentist.			_____ Yes		_____ No
I visit the dentist:					
_____ Every 3-4 months			_____ Every 6 months		
_____ Every 12 months			_____ Every 18 months		
_____ Every 2 years			_____ Less than every 2 years		
I have been with this dentist:					
_____ Less than 6 months			_____ 6 months - 2 years		
_____ 2 - 5 years			_____ More than 5 years		
I would recommend others to choose this dentist.			_____ Yes		_____ No
My first visit was for:					
_____ Regular examination			_____ Cleaning		
_____ Toothache			_____ Other (please explain) _____		

Upon first entering the reception room of this office, prior to meeting staff or doctor, do you remember your first impression?

I first went to this dentist because:

- |  |  |
|--|--|
| <input type="checkbox"/> Referred by friend or relative        | <input type="checkbox"/> Referred by another health professional |
| <input type="checkbox"/> Referred by member of dentist's staff | <input type="checkbox"/> Yellow pages                            |
| <input type="checkbox"/> Noticed Office                        | <input type="checkbox"/> Other: _____                            |

The staff is concerned that I return for regular appointments.  Yes  No

Other family members who use the same dentist:

- |                                 |   |
|---------------------------------|---|
| <input type="checkbox"/> Spouse | <input type="checkbox"/> Children (# _____) |
| <input type="checkbox"/> Parent | <input type="checkbox"/> Other: _____       |

Other services I think would be appropriate for this dentist to provide (o.k. to check more than one):

- Nutrition counseling
- Counseling to overcome anxiety about dental treatment
- Educational programs and activities for children
- Child care service in the dental office
- Transportation to/from dentist's office
- Other (please specify): \_\_\_\_\_

The things I like most about this dentist's practice are: \_\_\_\_\_

If I could change anything about this dentist's practice, it would be: \_\_\_\_\_

I prefer to visit a dentist located near:

- |  |                                 |
|--|---------------------------------|
| <input type="checkbox"/> Home                          | <input type="checkbox"/> Work   |
| <input type="checkbox"/> Shopping                      | <input type="checkbox"/> School |
| <input type="checkbox"/> Other (please specify): _____ |                                 |

In order to get to my dentist, I travel:

- |   |  |
|---|--|
| <input type="checkbox"/> Less than 1 mile | <input type="checkbox"/> 1 - 5 miles   |
| <input type="checkbox"/> 5 - 10 miles     | <input type="checkbox"/> Over 10 miles |



PERSONAL DATA

All information is kept confidential.

The only purpose is developing a composite of survey participants.

Please check appropriate places.

\_\_\_\_\_ M \_\_\_\_\_ F

Age: \_\_\_\_\_ Under 18  
\_\_\_\_\_ 18 - 35  
\_\_\_\_\_ 36 - 50  
\_\_\_\_\_ 51 - 65  
\_\_\_\_\_ Over 65

Status: \_\_\_\_\_ Single \_\_\_\_\_ Married \_\_\_\_\_ Divorced \_\_\_\_\_ Widowed

Children: \_\_\_\_\_ 0 \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 or more

Education:

\_\_\_\_\_ Less than 4 yrs. high school \_\_\_\_\_ High school graduate  
\_\_\_\_\_ Less than 4 yrs. college \_\_\_\_\_ College graduate  
\_\_\_\_\_ More than 4 yrs. college

Annual Income:

\_\_\_\_\_ \$0 - 5,000 \_\_\_\_\_ \$6,000 - 10,000  
\_\_\_\_\_ \$11,000 - 15,000 \_\_\_\_\_ \$16,000 - 25,000  
\_\_\_\_\_ \$26,000 - 35,000 \_\_\_\_\_ \$36,000 - 50,000  
\_\_\_\_\_ \$51,000 +

Address: \_\_\_\_\_

Schedule (hours/days): \_\_\_\_\_

**NOTE:** If you would be interested in volunteering to participate in a follow-up telephone interview, please write your name, address, and telephone number below. NOTE: PLEASE DO ONLY IF YOU WANT TO BE CALLED. Otherwise, there is no need to identify yourself, you should leave this portion of the form blank.

Tel. No. ( ) \_\_\_\_\_

State \_\_\_\_\_ Zip Code \_\_\_\_\_

above adapted from a form by the American Dental Association

## Corporate Mission Statement

We are in the health care business with a specialty and emphasis in oral health, which we believe to be one important component of a person's overall health.

It is our goal to restore and maintain each patient's optimal dental health. This is accomplished by means of preventive, restorative, prosthetic and orthodontic dentistry and education.

We believe our patients are entitled to the benefits of the latest developments and techniques available; thus, we will participate in continuing education as much as possible.

We strive to create an environment in which a person can experience a high degree of comfort, concern, warmth and respect as well as technically excellent dental care. We also strive to form lasting relationships with those people who choose to use our services.

We are committed to development of a dental team which embraces the philosophy of this dental practice. We believe continuing education to be critical in this development. Job satisfaction and reward will be commensurate with involvement in and commitment to this philosophy.

Fees for our services will reflect the excellence of the skill, care, and judgment used in our office.

## Corporate Objectives

The following are overall objectives of this dental practice, based on the corporate mission and philosophy of the dentist:

To restore each patient to his/her optimal dental health

To insure the comfort of each person

To build a loyal patient base, which refers to the practice

To promote lasting relationships with patients

To build a strong dental team which is committed to the mission

To develop a comfortable working environment for all staff

To maintain fees at competitive levels, but reflective of excellence

To build a reputation for excellence

To continue the education which was begun in dental school

## CHAPTER IV FINDINGS

### Staff Attitudes and Perceptions

Based on the indicated scoring method, the following strengths and weaknesses of the marketing mix, as perceived by the staff, are identified.

Always	= 5 points
Usually	= 4 points
Sometimes	= 3 points
Rarely	= 2 points
Never	= 1 point

Scores for all five audits were added; then divided by 5 to get a score on that component of the marketing mix. Results of that computation is as follows:

Product	= 89.2
Price	= 53.2
Place	= 84.2
Promotion	= 60.2

There is evidence, then, that the product offered to the patients is more than acceptable in the eyes of the staff. They apparently believe the quality of dental service is excellent, that the latest techniques are learned and used, that patients are treated with warmth, friendliness, respect and courtesy. Items which scored a 3, 2, or 1 include: patients believe our practice is unique; patients receive an appointment in one week or less; all incoming lines are never busy at the same time; appointments suit patients' convenience, i.e. weekends, evenings; patients under treatment are left alone 5-10 minutes or less; patients feel

loyal; and one member of the team knows each patient personally. Of particular importance is the lack of follow-up calls after treatment and acceptance of full recommended treatment plans by less than 80% of the patients.

The second area--price--received the lowest score. Areas of greatest concern: patient perception of fees being reasonable, patients being fully informed about cost of treatment, having financial arrangements clearly explained before treatment begins, and having few complaints about fees. Clearly, this is an area which needs attention. Patient perceptions of the fees may be directly related to staff perceptions and some clarification may be necessary.

Place ranks high on the scale. The office is seen as modern, clean, professional, comfortable and accessible and that the staff is well-groomed and appropriately dressed. It is noted that there is no office sign and there are few other service businesses nearby. The audit concerned itself with those areas which the patient uses and does not address the business office, lab, and storage space, which are woefully inadequate in the present office space.

Promotion is the other area which scored relatively low. It is apparent that the staff must be more aggressive in inviting referrals, more active professionally, and generally take a more active role in promoting the practice. Direct contact with patients on a more personal level is missing (e.g., congratulations, sympathy, welcome, thank you, etc.)

## THE INTERNAL PRACTICE AUDIT

Exercise is the key first step in the collection of data essential to developing a plan. We must get our act together before we can successfully present it to the public. All members of the team, including the doctor, should answer each question privately. There are no right or wrong answers. Tabulating the responses will enhance our insight into the current state of our practice mix (Product, Price, Place, Promotion).

Place a check mark under the single most appropriate response.

Numbers indicate the number of responses.

	<u>Always</u>	<u>Usually</u>	<u>Sometimes</u>	<u>Rarely</u>	<u>Never</u>
<b>PRODUCT</b>					
Our office offers a full range of dental services.	<u>5</u>	_____	_____	_____	_____
We emphasize prevention and patient education.	<u>3</u>	<u>2</u>	_____	_____	_____
The quality of our dental service is excellent.	<u>4</u>	<u>1</u>	_____	_____	_____
Doctors use the latest techniques and continue their education.	<u>4</u>	<u>1</u>	_____	_____	_____
Patients believe our practice is unique.	<u>1</u>	<u>3</u>	<u>1</u>	_____	_____
Patients calling our office are given an appointment within one week or less.	_____	<u>3</u>	<u>2</u>	_____	_____
All incoming phone lines are never busy at the same time.	_____	<u>3</u>	<u>1</u>	<u>1</u>	_____
The person who answers the phone is warm, friendly and courteous.	<u>4</u>	<u>1</u>	_____	_____	_____
Emergencies are seen promptly.	<u>2</u>	<u>3</u>	_____	_____	_____
Appointments suit patients' convenience; i.e., evenings, weekends.	<u>1</u>	<u>2</u>	_____	<u>1</u>	<u>1</u>
Patients are greeted promptly by name as soon as they enter the reception area.	_____	<u>5</u>	_____	_____	_____
Patients are left alone while they are waiting and being treated 5-10 minutes or less.	_____	_____	_____	<u>4</u>	<u>1</u>
At least one member of the team knows each patient personally.	<u>1</u>	<u>3</u>	<u>1</u>	_____	_____
Patients feel loyal to our practice.	<u>1</u>	<u>3</u>	<u>1</u>	_____	_____
We treat our patients with tender loving care.	<u>1</u>	<u>4</u>	_____	_____	_____

	<u>Always</u>	<u>Usually</u>	<u>Some- times</u>	<u>Rarely</u>	<u>Never</u>
The majority of our patients are easy to handle.	_____	<u>5</u>	_____	_____	_____
Each new patient receives a tour of our offices.	_____	_____	<u>2</u>	<u>2</u>	<u>1</u>
Patients receive a follow-up call after treatment.	_____	_____	<u>2</u>	<u>3</u>	_____
Over 80% of our patients accept full, recommended treatment plans.	_____	<u>2</u>	<u>3</u>	_____	_____
Doctor/staff/patient communications are good to excellent.	_____	<u>3</u>	<u>1</u>	<u>1</u>	_____
Patients can see that staff members enjoy their work.	_____	<u>5</u>	_____	_____	_____
Staff members are comfortable with the type of patients we serve.	_____	<u>5</u>	_____	_____	_____
Our office has regular staff meetings to which every member of the team contributes.	<u>1</u>	<u>4</u>	_____	_____	_____

#### PRICE

Patients are fully informed about fees.	_____	<u>1</u>	<u>4</u>	_____	_____
Patients perceive our fees as reasonable.	_____	<u>1</u>	<u>3</u>	<u>1</u>	_____
We offer special packages -- examination, x-rays, consultation -- for new patients.	_____	<u>3</u>	<u>1</u>	_____	<u>1</u>
Financial arrangements are clearly explained before treatment begins.	_____	<u>2</u>	<u>3</u>	_____	_____
We try hard to work out a payment plan the patient can afford.	<u>2</u>	<u>3</u>	_____	_____	_____
Our office has a comprehensive fee list.	<u>1</u>	<u>4</u>	_____	_____	_____
We offer assistance to patients with third party payments.	<u>2</u>	_____	<u>1</u>	<u>1</u>	_____
We accept credit cards and/or insurance assignments as well as cash.	<u>4</u>	_____	_____	_____	<u>1</u>
Discounts are offered for certain groups, (i.e., senior citizens).	<u>1</u>	_____	<u>2</u>	<u>1</u>	<u>1</u>

	<u>Always</u>	<u>Usually</u>	<u>Some- times</u>	<u>Rarely</u>	<u>Never</u>
have no problem talking with patients about money.	<u>1</u>	<u>2</u>	<u>1</u>	_____	_____
We work to make patients want the treatment they need.	<u>2</u>	<u>3</u>	_____	_____	_____
We have very few complaints from patients about fees.	_____	<u>1</u>	<u>3</u>	<u>1</u>	_____
Fees are reevaluated at least once a year.	<u>2</u>	<u>1</u>	<u>2</u>	_____	_____
Procedures exist for dealing with complaints/disputes about bills.	_____	<u>4</u>	_____	_____	<u>1</u>
Our patients are "sold" on our practice before fees are discussed and treatment begins.	_____	<u>4</u>	<u>1</u>	_____	_____
<b>PLACE</b>					
The outside of our building and its grounds are attractive, neat and clean.	<u>3</u>	<u>2</u>	_____	_____	_____
Office location is easy for new patients to find.	<u>1</u>	<u>4</u>	_____	_____	_____
Our office sign is clearly visible to passersby.	_____	<u>1</u>	<u>2</u>	<u>2</u>	_____
Other types of service businesses are in the same building or nearby.	<u>2</u>	_____	<u>2</u>	_____	<u>1</u>
Our office is accessible for disabled and elderly patients.	<u>4</u>	<u>1</u>	_____	_____	_____
There is adequate parking for patients.	<u>3</u>	<u>2</u>	_____	_____	_____
Office is located on or near public transportation.	<u>4</u>	<u>1</u>	_____	_____	_____
Office decor reflects our image.	<u>3</u>	<u>2</u>	_____	_____	_____
Entire office (reception area, operatories, etc.) is clean at all times.	<u>1</u>	<u>4</u>	_____	_____	_____
Wallpaper, paint, upholstery look new and sparkling.	<u>1</u>	<u>4</u>	_____	_____	_____
Reception area is inviting and well-lit.	<u>3</u>	<u>1</u>	<u>1</u>	_____	_____
Our furniture is comfortable.	<u>3</u>	<u>2</u>	_____	_____	_____
Reading material in reception area is varied and up-to-date.	<u>5</u>	_____	_____	_____	_____



	<u>Always</u>	<u>Usually</u>	<u>Sometimes</u>	<u>Rarely</u>	<u>Never</u>
Office decor is personalized with doctor's and staff's interests and/or talents.	<u>4</u>	<u>1</u>	_____	_____	_____
Staff is appropriately dressed for practice's image.	<u>2</u>	<u>3</u>	_____	_____	_____
Staff is well-groomed.	<u>4</u>	<u>1</u>	_____	_____	_____
Dental equipment looks modern and sparkling clean.	<u>4</u>	<u>1</u>	_____	_____	_____
Areas are set aside for patients' privacy during consultations.	<u>4</u>	<u>1</u>	_____	_____	_____
Patients are visible to staff as soon as they arrive in reception area.	<u>2</u>	<u>3</u>	_____	_____	_____

### PROMOTION

All of our staff actively refers to our practice.	<u>3</u>	<u>2</u>	_____	_____	_____
Staff is trained in asking patients for referrals.	_____	<u>2</u>	_____	<u>2</u>	_____
Staff asks all patients for referrals.	_____	_____	<u>2</u>	<u>2</u>	_____
The majority of our patients refer to our practice.	<u>2</u>	<u>1</u>	<u>1</u>	_____	_____
Patients receive cards on special occasions; i.e., birthday, graduation.	_____	_____	<u>3</u>	<u>1</u>	<u>1</u>
Patients giving referrals receive a gift or other reward.	<u>4</u>	<u>1</u>	_____	_____	_____
New patients are sent welcoming letters and practice brochures.	<u>3</u>	<u>1</u>	<u>1</u>	_____	_____
All patients are sent prompt recall notices.	<u>2</u>	<u>3</u>	_____	_____	_____
Reception area has bulletin board with pictures of patients, their interests, talents.	_____	_____	_____	_____	<u>5</u>
We send congratulations and educational materials to new patients.	<u>1</u>	_____	<u>2</u>	<u>1</u>	<u>1</u>
We report back promptly to referring doctors.	_____	<u>1</u>	<u>2</u>	<u>2</u>	_____
Our doctor projects enthusiasm about dentistry.	<u>2</u>	<u>3</u>	_____	_____	_____
We've introduced our practice to local pharmacists.	<u>1</u>	<u>3</u>	_____	_____	<u>1</u>

	<u>Always</u>	<u>Usually</u>	<u>Some- times</u>	<u>Rarely</u>	<u>Never</u>
Patients leave with some reminder of our office; e.g., pen, memo pad with our name.	_____	<u>3</u>	<u>2</u>	_____	_____
Everybody on the team takes an active role in promoting the practice.	<u>3</u>	<u>2</u>	_____	_____	_____
Doctor or other staff members give public talks.	_____	_____	<u>4</u>	<u>1</u>	_____
Doctor makes presentations at professional meetings.	_____	_____	<u>2</u>	<u>2</u>	_____
Staff understands office image we're marketing.	<u>1</u>	<u>4</u>	_____	_____	_____

Thank you for your assistance. Please replace in the envelope and return to the staff member in charge of scoring.

You may score your own answers below, or turn it in to the assigned scorer, who will compute for you.

- each Always score 5 points
- each Usually score 4 points
- each Sometimes score 3 points
- each Rarely score 2 points
- each Never score 1 point

Sum up your scores for each section, and place them in the blanks below:

**PRODUCT** \_\_\_\_\_ points ÷ 23 = \_\_\_\_\_

**PRICE** \_\_\_\_\_ points ÷ 15 = \_\_\_\_\_

**PLACE** \_\_\_\_\_ points ÷ 19 = \_\_\_\_\_

**PROMOTION** \_\_\_\_\_ points ÷ 18 = \_\_\_\_\_

## Market Definitions and Analysis of Findings

### Demographic Data

This dental practice is located in a community of 34,000, which serves an economic area of approximately 100,000 in northwest North Dakota. It is an area heavily dependent upon agriculture. A state university and a Strategic Air Command Base are also located there. Small communities surrounding the city are important markets for products and services.

In the community itself, there are 27 practicing dentists for a ratio of 1260:1. In the economic area, there are approximately 50 dentists for a ratio of 2000:1.

Because of the dependency on agriculture, the population has been fairly stable for a period of 30 years, and is expected to continue. The nationwide aging of the population will be a factor in this area, perhaps felt more intensely because of a lack of opportunities for young people.

Of the people responding to the survey:

64.4% are female

71.8% are married

69.1% have 2 or more children

70.8% have some college education

58.9% have incomes above \$25,000

Age groups are represented fairly equally

Although not covered in the surveys, estimates from office records indicate that approximately 50% of current patients have some form of dental insurance coverage.

## Frequency Distribution

A copy of the survey with frequency results is found on the following pages. Results are given in percentage form. Complete results are shown on the computer print out in the Appendix.

Three of the marketing mix variables--product, price, and place--were measured.

As noted previously, none of the product questions directly relate to the physical product, e.g., a filling or crown. Dentistry is a service in which it is difficult for the patient/-consumer to discern technical quality; therefore, the perceptions of quality and level of satisfaction are based largely on extra-oral factors. Those factors include a courteous, friendly staff who are gentle, careful and competent; a dentist who remembers his patients, spends adequate time with them and really listens; explains things simply, but doesn't ask too many personal questions; and keeps up with the latest in dentistry. Results are highly favorable in this area, as they were in the staff audit.

Factors relating to place are also favorable, with location noted as convenient, easy to find , and with easy parking. The office is perceived as clean and comfortable and leaves a positive first impression. Again, these results correspond to results of the staff audit.

Price factors--fees themselves, advance information on cost of treatment and special payment terms--are not perceived as

Price factors--fees themselves, advance information on cost of treatment and special payment terms--are not perceived as favorably. This, too, corresponds to the staff responses. 46.3% of those surveyed believe fees to be too high. This is believed to be a reflection of general attitude of all dental fees being too high as well as those in this particular office. One-third reported "not knowing" if fees were too high, presumably because they hadn't had the opportunity to compare.

40% of the respondents said they "didn't know" if the dentist were willing to discuss special payment terms with them, many indicating they "never asked" or "pay cash."

Overall, those surveyed display confidence, loyalty, and satisfaction. While 74.9% wouldn't consider changing dentists, 96.9% are satisfied with the care they receive, 82.3% have referred others to the practice and 98.1% would recommend that others choose this practice.

Other factors which will influence the marketing plan are:

34% of those surveyed report feeling nervous about going to the dentist.

77.6% visit the dentist at least every 12 months.

62.7% have been in the practice more than 5 years.

59% were referred by a friend or relative, and 12% were referred by another health professional.

1.5% came to this office because they noticed the office.

2.0% came because of the Yellow Pages.

68.9% prefer a dentist to be located near home, but many reported "it doesn't matter in a town this size."

## ATTITUDES ABOUT DENTISTS AND DENTISTRY

Dental Consumer: Thank you for participating in this special national survey. Please take time to complete the following questionnaire. For questions 1 through 27, mark the box that most closely matches your opinion. The remaining questions are self-explanatory.

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Don't Know</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
When phoning my dentist's office, I usually receive prompt, courteous attention.	<u>69.6</u>	<u>29.4</u>	<u>0.7</u>	<u>0.2</u>	<u>---</u>
Members of the staff are friendly and courteous.	<u>70.3</u>	<u>29.2</u>	<u>0.2</u>	<u>0.2</u>	<u>---</u>
The dentist really listens to me.	<u>50.5</u>	<u>41.0</u>	<u>6.3</u>	<u>2.0</u>	<u>0.2</u>
The dentist seldom spends enough time with me.	<u>5.4</u>	<u>9.4</u>	<u>3.2</u>	<u>56.8</u>	<u>25.2</u>
The dentist explains things to me in plain, simple English.	<u>46.0</u>	<u>50.4</u>	<u>1.2</u>	<u>1.9</u>	<u>0.5</u>
The dentist seems to remember me from visit to visit.	<u>63.2</u>	<u>31.0</u>	<u>4.1</u>	<u>1.7</u>	<u>----</u>
The dentist and his staff do not look professional.	<u>0.7</u>	<u>1.7</u>	<u>1.2</u>	<u>40.6</u>	<u>55.7</u>
I wouldn't consider changing dentists.	<u>39.8</u>	<u>35.1</u>	<u>13.8</u>	<u>8.6</u>	<u>2.7</u>
I usually have to wait too long when I arrive at the office.	<u>3.2</u>	<u>4.6</u>	<u>3.2</u>	<u>58.7</u>	<u>30.3</u>
The dentist helps calm my fears about treatment.	<u>28.1</u>	<u>53.9</u>	<u>9.9</u>	<u>6.9</u>	<u>1.2</u>
The office location is inconvenient.	<u>5.4</u>	<u>9.0</u>	<u>1.0</u>	<u>52.9</u>	<u>31.7</u>
It's easy to find parking close to the office.	<u>52.7</u>	<u>45.1</u>	<u>0.2</u>	<u>1.5</u>	<u>0.5</u>
The office hours are convenient.	<u>46.1</u>	<u>49.0</u>	<u>1.7</u>	<u>3.1</u>	<u>----</u>
The dentist's office is easy to find.	<u>49.5</u>	<u>47.8</u>	<u>0.7</u>	<u>1.7</u>	<u>0.2</u>
The dentist's office is not clean.	<u>2.7</u>	<u>1.2</u>	<u>0.5</u>	<u>33.0</u>	<u>62.6</u>
The reception area is comfortable.	<u>48.1</u>	<u>48.8</u>	<u>1.9</u>	<u>1.2</u>	<u>----</u>
The dentist asks too many personal questions.	<u>1.0</u>	<u>1.0</u>	<u>1.5</u>	<u>49.5</u>	<u>47.1</u>
I am told in advance what the treatment will cost.	<u>20.6</u>	<u>43.0</u>	<u>10.6</u>	<u>19.7</u>	<u>6.1</u>
The dentist's fees are too high.	<u>15.8</u>	<u>30.5</u>	<u>33.7</u>	<u>16.5</u>	<u>3.4</u>

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Don't Know</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
The dentist is willing to discuss special payment terms.	<u>17.8</u>	<u>38.6</u>	<u>40.4</u>	<u>2.8</u>	<u>0.5</u>
The dentist and his staff are gentle, careful and competent.	<u>46.0</u>	<u>51.6</u>	<u>0.2</u>	<u>1.7</u>	<u>0.5</u>
I feel my time is respected.	<u>37.6</u>	<u>55.0</u>	<u>3.9</u>	<u>3.4</u>	<u>-----</u>
I don't think the dentist keeps up with the latest in dentistry.	<u>2.2</u>	<u>3.7</u>	<u>8.9</u>	<u>43.7</u>	<u>41.5</u>
It's difficult to get an appointment on short notice.	<u>2.0</u>	<u>15.7</u>	<u>19.5</u>	<u>47.1</u>	<u>15.7</u>
The dentist and his staff have taught me a great deal about taking care of my teeth.	<u>21.5</u>	<u>58.6</u>	<u>10.0</u>	<u>9.5</u>	<u>0.5</u>
Overall, I am quite satisfied with the care I receive.	<u>45.9</u>	<u>51.0</u>	<u>1.0</u>	<u>1.5</u>	<u>0.7</u>
I feel very nervous about visiting the dentist.	<u>9.7</u>	<u>25.6</u>	<u>2.7</u>	<u>44.9</u>	<u>17.1</u>
I have referred others to this dentist.		<u>82.3</u>	Yes		<u>17.7</u> No
I visit the dentist:					
<u>5.6</u> Every 3-4 months	<u>35.9</u>	Every 6 months			
<u>36.1</u> Every 12 months	<u>4.8</u>	Every 18 months			
<u>9.3</u> Every 2 years	<u>8.3</u>	Less than every 2 years			
I have been with this dentist:					
<u>3.7</u> Less than 6 months	<u>10.8</u>	6 months - 2 years			
<u>22.9</u> 2 - 5 years	<u>62.7</u>	More than 5 years			
I would recommend others to choose this dentist.		<u>98.1</u>	Yes		<u>1.9</u> No
My first visit was for:					
<u>63.5</u> Regular examination	<u>7.1</u>	Cleaning			
<u>8.6</u> Toothache	<u>20.7</u>	Other (please explain)			

Upon first entering the reception room of this office, prior to meeting staff or doctor, do you remember your first impression?

61.2% - Excellent	12.9% - Favorable
20.8% - Don't Remember	5.1% - Negative



st went to this dentist because:

- 12.0 Referred by friend or relative
- 12.4 Referred by another health professional
- 2.5 Referred by member of dentist's staff
- 2.0 Yellow pages
- 18.5 Noticed Office
- 18.7 Other: \_\_\_\_\_

staff is concerned that I return for regular appointments. 95.8 Yes 4.0 No

er family members who use the same dentist:

- 1.6 Spouse \_\_\_\_\_ Children (# \_\_\_\_\_)
- 6.9 Parent 6.5 Other: \_\_\_\_\_

er services I think would be appropriate for this dentist to provide (o.k. to check more than one):

- Nutrition counseling
- Counseling to overcome anxiety about dental treatment
- Educational programs and activities for children
- Child care service in the dental office
- Transportation to/from dentist's office
- Other (please specify): \_\_\_\_\_

things I like most about this dentist's practice are: \_\_\_\_\_

could change anything about this dentist's practice, it would be: \_\_\_\_\_

prefer to visit a dentist located near:

- 12.9 Home 12.8 Work
- 0.3 Shopping 0.6 School
- 12.5 Other (please specify): \*Many of these responses indicated that it did not matter in a city of this size.

order to get to my dentist, I travel:

- 66.0 Less than 1 mile 46.8 1 - 5 miles
- 5.1 5 - 10 miles 22.1 Over 10 miles

PERSONAL DATA

All information is kept confidential.

The only purpose is developing a composite of survey participants.

Please check appropriate places.

5.4 M      64.4 F

Age:      0.2 Under 18  
             22.5 18 - 35  
             28.2 36 - 50  
             21.3 51 - 65  
             27.7 Over 65

Status:              12.0 Single      71.8 Married      4.9 Divorced      11.0 Widowed

Children:              17.9 0      12.9 1      25.1 2      24.2 3      19.8 4 or more

4 Less than 4 yrs. high school  
0 Less than 4 yrs. college  
6 More than 4 yrs. college

22.8 High school graduate  
27.2 College graduate

Income:

0.8 \$0 - 5,000  
7.9 \$11,000 - 15,000  
0.9 \$26,000 - 35,000  
0.9 \$51,000 +

5.3 \$6,000 - 10,000  
18.3 \$16,000 - 25,000  
21.1 \$36,000 - 50,000

Schedule (hours/days): \_\_\_\_\_

If you would be interested in volunteering to participate in a follow-up telephone interview, please write your name, address, and telephone number below. NOTE: PLEASE DO NOT WRITE IF YOU WANT TO BE CALLED. Otherwise, there is no need to identify yourself, and you should leave this portion of the form blank.

Tel. No. (      ) \_\_\_\_\_

Address \_\_\_\_\_ Zip Code \_\_\_\_\_

## Correlation Among Dependent Variables

Correlation among the selected dependent variables was run on the SAS computer software, with the complete results shown in the Appendix.

Questions 8 ("I wouldn't consider changing dentists"), 26 ("Overall, I am quite satisfied with the care I receive"), 28 ("I have referred others to this dentist"), and 31 ("I would recommend others to choose this dentist") were found to be correlated. There was not high correlation, but enough to be significant.

Questions 29 ("I visit the dentist:" how often) and 30 ("I have been with this dentist:" how long) had insignificant correlation to the others, but are negatively correlated to each other. This may be explained by the fact that if a person has been in the practice for a significant length of time, his oral health has been restored and is being maintained, requiring less frequent visits.

## Regression Results

Several multiple regression models were created and run, utilizing the SAS software. Questions 8, 26, 28, 29, 30, and 31 were used as dependent variables and each was regressed against all other questions in the survey (except the other dependents). The significance level was set at 1.0 for entry into the model.

A matrix of the results is shown on the following pages. Computer results which show the final step and the summary of each regression model are shown in the Appendix.

In the model using question 8 ("I wouldn't consider changing dentists") as the dependent variable, the following factors showed a fairly strong B value and F value: 1) "The dentist and staff have taught me a great deal about the care of my teeth"; 2) "Fees are too high" (negative); 3) "The office is not clean" (negative); 4) "The office is easy to find"; 5) "My time is respected". Also entering the model, but only marginally, is difficulty of getting an appointment on short notice (negative).

This would indicate that loyalty to the practice can be assured by respecting a patient's time, teaching patients how to care for their own teeth, making the office easy to find, keeping fees as reasonable as possible, and maintaining as clean an office as possible.

Using question 26 ("Overall, I am quite satisfied with the care I receive") as the dependent variable produced the following model: 1) "Members of the staff are friendly and courteous"; 2) "My time is respected"; 3) "The dentist does not keep up with the latest in dentistry" (negative); 4) "The dentist is willing to discuss special payments terms"; 5) "I feel very nervous about visiting the dentist" (negative). Also entering the model with marginal impact and significance were 1) "The office hours are convenient"; 2) "The reception area is comfortable"; 3 & 4) age and education (both showing significance at higher age brackets and education levels); and 5) "I usually have to wait too long while I'm in the office".

Overall satisfaction, it appears, is indicated by a friendly, courteous staff, respecting a patient's time, the dentist keeping up on the latest and a willingness to discuss special payment terms. People who are not nervous about visiting the dentist are more likely to express satisfaction, as are older and more highly educated people. Convenient office hours and a comfortable reception room are marginal indicators. There seems to be no plausible explanation for variable #9 ("I usually wait too long") entering the model as a positive indicator.

In the model with question 28 ("I have referred others to this dentist") as the dependent, the independent variables entering were 1) "The dentist seems to remember me from visit to visit"; 2) "My time is respected"; 3) "The staff is concerned that

I return for regular appointments"; 4) "Fees are too high" (negative); 5) "The reception area is comfortable" (negative).

This does show some correlation with previous models but the comfortable reception area as a negative independent may indicate a weakness in the model, perhaps caused by the difference in scaling (1-5 versus 1-2).

When #29 ("I visit the dentist:" how often) served as dependent variable, 1) "...prompt, courteous attention on the phone"; 2) "The staff has taught me a great deal about caring for my teeth"; 3) age and 4) immediate family members using the same dentist entered as positive independent variables. However, the comfortable reception area and a gentle, careful, and competent staff entered as negative independents. This would seem to indicate that the less comfortable the reception area is and the less gentle, careful, and competent the staff is, the more often patients will visit. The entire model is weak, however, with neither B nor F values showing much strength.

The model using #30 ("I've been with this dentist:" how long) likewise very weak, particularly in the B values. A favorable first impression, having one's time respected, and first visit being for an exam, being nervous, having easy parking and the office being easy to find as a negative are the only independent variables with even fair reliability and none of them show much impact.

In the final model, with #31 ("I would recommend others to choose this dentist") as the dependent variable, the independent

variables showing fairly strong reliability are the dentist remembering the patient from visit to visit, being referred by a friend or relative, a convenient office location which is easy to find, and being female. Dependents having significant impact are the dentist remembering the patient, the dentist avoiding too many personal questions, and again, being female. More independents entered this model than the others, but no clearly defined model is formed.

Building an effective overall model for marketing dimensions from these individual ones is not easy, but there are some independent variables which are repeated or are sufficiently reliable to be included. These are:

"My time is respected."

"The staff is friendly and courteous."

"The dentist and staff have taught me a great  
me a great deal about taking care of my teeth."

"Fees are too high." (negative)

"The dentist remembers me from visit to visit."

Being female

Being referred by a friend or relative

REGRESSION RESULTS MATRIX

DEPENDENT  
VARIABLES

DEPENDENT VARIABLES

	8	26	28	29	30	31
				.59 8.9		
		.20 9.15			-.3 5.58	
			.07 2.42			.31 11.13
		.07 3.59				
0					-.01 2.38	-.12 3.53
1						.12 5.40
2					.06 9.92	
3		.08 2.85				
4	.28 6.43				-.05 7.27	.20 4.16
5	-.18 4.88					



REGRESSION RESULTS MATRIX, CONTINUED

DEPENDENT  
VARIABLES

DEPENDENT VARIABLES

	8	26	28	29	30	31
6		.08 4.19	-.06 3.75	-.27 5.22		
7					.03 4.65	-.18 5.02
8						-.10 4.50
9	-.21 8.47		-.04 2.52		-.01 2.16	-.09 3.50
0		.10 6.48				
1				-.29 2.79	.04 3.28	
2	.27 5.82	.36 41.42	.20 29.29		.04 6.01	
3		-.08 5.27				
4	-.10 2.29					
5	.24 8.54			.27 7.94		
6						
7		-.06 6.84			.02 8.48	
8						
9						
0						

REGRESSION RESULTS MATRIX, CONTINUED

DEPENDENT  
VARIABLES

DEPENDENT VARIABLES

	8	26	28	29	30	31
2					.02 8.47	.07 2.39
3					.03 8.22	-.07 2.12
4						-.10 14.18
5			.23 3.01			
6				.28 2.6		
7						
8						
9						.29 7.08
10				.22 5.8		
11						
12		.05 3.78				
13		.04 2.49				
14						

## Target Market

Demographic data from the patient surveys indicates that while the age groups are quite equally represented, the largest segment is over 65 (27.7%). The nationwide demographics indication is that the bulk of the population will be aging in the next 20 years. It is safe to assume that the local population will follow the national trend, particularly given the economic situation which does not offer significant opportunities for young people.

It is not the desire of this dentist to limit the practice to a specialty or a narrow segment of the population. Rather, it is to serve discriminating people who value excellence and are willing and able to pay for it. Those people would also seek and appreciate education on health issues and a lasting relationship with a health professional.

Discriminating people are found across the spectrum of ages, educational levels, and income. It is the intent of this practice to particularly target those of the 36-55 year age group with college backgrounds.

The patient surveys indicate overall satisfaction with the practice by a large majority of the current patients, most of whom are college educated and earning at least \$25,000.

As cited earlier, the Baby Boomers have experienced extensive caries in childhood and will require extensive and complex restorative dental care as they age. At the present time, they are more interested in providing their children with the best care possible. This includes preventive care and some orthodontic and restorative care. As their children grow up and begin to care for themselves, the focus will be once again on their own dental needs.

## CHAPTER V. THE MARKETING/OPERATIONS PLAN

The marketing and operations plan are a natural outgrowth of the information gathered in the process--the staff audit, the patient surveys, corporate mission and objectives, demographic data, and target market identification.

Because the reporting of results has been done according to marketing mix variables, the marketing and operations plan is presented similarly.

The product area is that which is least in need of attention. The staff and patients regard the product as being not only adequate, but very satisfactory. However, in order for patients to be referrers they must be not only satisfied, but enthusiastic.

First, a commitment to excellence demands that the dentist and staff be involved in continuing education courses. This will involve not only technical courses, but those dealing in people skills as well. A seminar at which the entire team can be present is an immediate goal.

A new, in-house computer system was recently installed, with greater service the ultimate goal. Insurance benefits, recall dates, full treatment data, and a number of demographic and psychographic variables are easily tracked and identified. More assistance with insurance will be a natural by-product. Another

is a written treatment plan, complete with expected insurance benefit. This plan would be presented in a conference room setting rather than a clinical one.

The recall system would be handled by the computer with complete tracking. Recall is done by telephone with quite good success in this office.

Another advantage of the computer is the ability to send word-processed letters to selected groups of patients or even a single individual. A bank of letters will be stored for use as opportunity arises.

In addition, a tickler file will be established on the computer. As patients complete treatment, name and phone number and notes on treatment will be entered into a file. Every patient in that file will receive a follow-up phone call from a staff member.

With the prevalence of two-career families in our target market, it is necessary to establish some evening and weekend hours, even if it is only once or twice a month. In addition, hygiene appointments will be scheduled during noon hour for the benefit of those professional people not able to leave their work during regular office hours.

An answering service should be contracted to receive after hours emergency calls. This number need not be published, but made available to patients as they leave the office.

Emphasis will continue to be placed on educating the patients in this practice and seeking out other opportunities for educational presentations (e.g., nursing home staff, senior citizens

groups, health clubs, hospital education series).

The appointment book will be structured to assure that each patient's time is respected, not wasted in waiting. In addition, the appointing should be done to provide as even a flow of revenue as possible.

### Price

This is the area perceived by staff and patients alike as needing attention. The fee structure will be examined and then compared to local, state and national figures. While it is not anticipated that fees will be reduced, the way they are handled can be.

First, the staff must be made aware of how and why the fees were set at the present level. When the staff is committed to the value that the fee represents, they can more easily communicate that fact to the patient.

Fees must be discussed and any special payment terms arranged prior to the patient beginning treatment.

A series of newsletter articles concerning the factors which make up the fee would educate the patient and perhaps move him/her to value the service more.

## Place

While the surveys didn't indicate a dissatisfaction with the office setting, there are a number of factors which have caused the doctor to decide to relocate.

The areas of the office which the patient uses are adequate and pleasant. However, the business office and storage space are very cramped and make for fairly unpleasant working conditions. It was decided, therefore, to relocate.

A suite of offices will be available in a new professional building adjacent to a major medical clinic. This location will meet a number of objectives in the marketing plan--more visibility, service businesses (health care) located nearby, and an expectation of increased referrals from other health professionals.

The larger space will provide more pleasant working conditions for all members of the staff.

It will be the goal in decorating the office to create a relaxed and comfortable environment for the patients. Particular attention will be paid to colors, textures and styles to convey that feeling. The decor will also reflect the image of excellence, and the interests and tastes of the doctor and staff.



## Promotion

With the mission and desired image established, a promotional plan can now be laid out.

A newsletter was established several years ago and full advantage will be taken of that medium for educational and promotional purposes. It will be sent to patients of record and to other health professionals in the area. In addition, new residents and other individuals in the target market will receive a copy.

A media company will be contacted for design of a logo to be used on stationery, statements, appointment and recall cards and business cards (which will be printed for all staff members). In addition, brochures outlining practice philosophy and policy will be prepared for distribution to current and new patients and to all health professionals, fitness centers, the YMCA, etc.

Welcome letters will be sent to all new patients, along with one of the brochures. In addition, cards will be sent to patients for special occasions (graduation, special awards, sympathy, promotion, etc.). A series of rewards will be established for active referrers, i.e., a letter for the first, a small gift for the second, flowers for the third, a gift certificate for dinner for the fourth.

At this time, full-blown advertising will not be undertaken. Sponsorship of athletic events, a sports team, or educational

opportunity will be done with only the name being mentioned.

The Yellow Pages offers an opportunity which has not been exploited by this office. Along with the design of stationery, etc. a large ad for the Yellow Pages will be designed.

With the relocation of the office comes another opportunity for advertising. Ads will be placed announcing the move. Also, open houses will be held for current patients and for local professionals.

## CHAPTER VI

### Summary

This paper has explored the cultural, social, and legal characteristics which have created an opportunity for health care marketing, and in particular, marketing a dental practice.

A variety of data gathering methods was used, including literature survey, audit of the current staff, and a survey of current patients. The data gathered was entered into computer software for analysis--frequency count and regression analysis.

From the information, a target market was established and a marketing plan outlined.

It is possible, with enough information, to predict which factors, particularly extra-oral ones, will lead to patient loyalty and satisfaction with the dental practice.

While some of the models were not particularly strong, others had sufficient reliability and impact to be considered significant indicators of the dependent variables.

Based on demographic variables for a given location, information concerning a particular practice (patient profile and mission statement), a marketing plan can be devised for that practice.

It will be the responsibility of the entire dental team to implement this plan since there are implications for all. Success of the plan must be a goal for all individuals and there must be

established methods of monitoring results and for rewarding success. It is suggested that one individual be responsible for guiding the plan to completion.

APPENDIX

CORRELATION AMONG DEPENDENT VARIABLES

BLE	N	MEAN	STD DEV	SUM	MINIMUM	MAXIMUM
	407	4.0073710	1.0609247	1631.0000	1.0000000	5.0000000
	410	4.3975610	0.6600688	1803.0000	1.0000000	5.0000000
	390	1.8230769	0.3820938	711.0000	1.0000000	2.0000000
	396	3.9848485	1.3254176	1578.0000	1.0000000	6.0000000
	407	3.4447174	0.8282365	1402.0000	1.0000000	4.0000000
	374	1.9812834	0.1357037	741.0000	1.0000000	2.0000000

ON CORRELATION COEFFICIENTS

B > |R| UNDER H0:RHO=0 / NUMBER OF OBSERVATIONS

X8						
	X8	X26	X31	X28	X29	X30
1.00000	0.35573	0.26901	0.23360	0.09761	0.05360	0.2849
0.0000	0.0001	0.0001	0.0001	0.0538	0.2849	
407	404	367	385	391	400	
X26						
	X26	X8	X28	X31	X30	X29
1.00000	0.35573	0.31033	0.25856	0.08831	0.06985	0.1664
0.0000	0.0001	0.0001	0.0001	0.0759	0.1664	
410	404	389	372	405	394	
X28						
	X28	X26	X31	X8	X30	X29
1.00000	0.31033	0.30856	0.23360	0.19392	0.03562	0.03562
0.0000	0.0001	0.0001	0.0001	0.0001	0.4905	0.4905
390	389	358	385	386	377	377
X29						
	X29	X8	X26	X31	X28	X30
1.00000	0.09761	0.06985	0.05925	0.03562	-0.02539	-0.02539
0.0000	0.0538	0.1664	0.2622	0.4905	0.6153	0.6153
396	391	394	360	377	394	394
X30						
	X30	X28	X26	X31	X8	X29
1.00000	0.19392	0.08831	0.07827	0.05360	-0.02539	-0.02539
0.0000	0.0001	0.0759	0.1329	0.2849	0.6153	0.6153
407	386	405	370	400	394	394
X31						
	X31	X28	X8	X26	X30	X29
1.00000	0.30856	0.26901	0.25856	0.07827	0.05925	0.05925
0.0000	0.0001	0.0001	0.0001	0.1329	0.2622	0.2622
374	358	367	372	370	360	360

FREQUENCY DISTRIBUTION RESULTS\*  
 "ATTITUDES ABOUT DENTISTS AND DENTISTRY"

. = no response; 1 = strongly disagree; 2 = disagree; 3 = don't know;  
 4 = agree; 5 = strongly agree

	X1	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Receive prompt	2	1	0.2	1	0.2
courteous	3	3	0.7	4	1.0
attention on	4	122	29.4	126	30.4
the phone	5	289	69.6	415	100.0

	X2	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	1	.	.	.
	2	1	0.2	1	0.2
Staff is	3	1	0.2	2	0.5
friendly and	4	121	29.2	123	29.7
courteous	5	291	70.3	414	100.0

	X3	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	5	.	.	.
	1	1	0.2	1	0.2
Dentist	2	8	2.0	9	2.2
really listens	3	26	6.3	35	8.5
to me	4	168	41.0	203	49.5
	5	207	50.5	410	100.0

	X4	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	10	.	.	.
Dentist seldom	1	102	25.2	102	25.2
spends enough	2	230	56.8	332	82.0
time with me	3	13	3.2	345	85.2

4	38	9.4	383	94.6
5	22	5.4	405	100.0

	X5	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	4	.	.	.
Dentist	1	2	0.5	2	0.5
explains in	2	8	1.9	10	2.4
simple language	3	5	1.2	15	3.6
	4	207	50.4	222	54.0
	5	189	46.0	411	100.0

	X6	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	2	.	.	.
Dentist	2	7	1.7	7	1.7
remembers me	3	17	4.1	24	5.8
from visit to	4	128	31.0	152	36.8
visit	5	261	63.2	413	100.0

	X7	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	6	.	.	.
Dentist and	1	228	55.7	228	55.7
staff do not	2	166	40.6	394	96.3
look	3	5	1.2	399	97.6
professional	4	7	1.7	406	99.3
	5	3	0.7	409	100.0

	X8	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	8	.	.	.
Would not	1	11	2.7	11	2.7
consider	2	35	8.6	46	11.3
changing	3	56	13.8	102	25.1
dentists	4	143	35.1	245	60.2
	5	162	39.8	407	100.0



	X9	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	6	.	.	.
1		124	30.3	124	30.3
Usually have to wait too long while in office	2	240	58.7	364	89.0
	3	13	3.2	377	92.2
	4	19	4.6	396	96.8
	5	13	3.2	409	100.0

	X10	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	9	.	.	.
1		5	1.2	5	1.2
Dentist helps calm my fears about treatment	2	28	6.9	33	8.1
	3	40	9.9	73	18.0
	4	219	53.9	292	71.9
	5	114	28.1	406	100.0

	X11	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	5	.	.	.
1		130	31.7	130	31.7
Office location is inconvenient	2	217	52.9	347	84.6
	3	4	1.0	351	85.6
	4	37	9.0	388	94.6
	5	22	5.4	410	100.0

	X12	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	3	.	.	.
1		2	0.5	2	0.5
Easy to find parking near office	2	6	1.5	8	1.9
	3	1	0.2	9	2.2
	4	186	45.1	195	47.3
	5	217	52.7	412	100.0

	X13	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	1	.	.	.
	2	13	3.1	13	3.1
Office hours	3	7	1.7	20	4.8
are	4	203	49.0	223	53.9
convenient	5	191	46.1	414	100.0

	X14	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	5	.	.	.
Office is	1	1	0.2	1	0.2
easy to find	2	7	1.7	8	2.0
	3	3	0.7	11	2.7
	4	196	47.8	207	50.5
	5	203	49.5	410	100.0

	X15	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	6	.	.	.
	1	256	62.6	256	62.6
	2	135	33.0	391	95.6
Office is	3	2	0.5	393	96.1
not clean	4	5	1.2	398	97.3
	5	11	2.7	409	100.0

	X16	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	1	.	.	.
	1	5	1.2	5	1.2
Reception area	2	8	1.9	13	3.1
is comfortable	4	202	48.8	215	51.9
	5	199	48.1	414	100.0

	X17	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	7	.	.	.
	1	192	47.1	192	47.1
Dentist asks	2	202	49.5	394	96.6
too many	3	6	1.5	400	98.0
personal	4	4	1.0	404	99.0
questions	5	4	1.0	408	100.0

	X18	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	8	.	.	.
I am told	1	25	6.1	25	6.1
cost of	2	80	19.7	105	25.8
treatment	3	43	10.6	148	36.4
in advance.	4	175	43.0	323	79.4
	5	84	20.6	407	100.0

	X19	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	9	.	.	.
Dentist's	1	14	3.4	14	3.4
fees are	2	67	16.5	81	20.0
too high	3	137	33.7	218	53.7
	4	124	30.5	342	84.2
	5	64	15.8	406	100.0

	X20	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	16	.	.	.
Dentist is	1	2	0.5	2	0.5
willing to	2	11	2.8	13	3.3
discuss special	3	161	40.4	174	43.6
payment terms	4	154	38.6	328	82.2
	5	71	17.8	399	100.0

	X21	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	4	.	.	.
Dentist and	1	2	0.5	2	0.5
staff are gentle	2	7	1.7	9	2.2
careful and	3	1	0.2	10	2.4
competent	4	212	51.6	222	54.0
	5	189	46.0	411	100.0

	X22	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	8	.	.	.
	2	14	3.4	14	3.4
My time is	3	16	3.9	30	7.4
respected.	4	224	55.0	254	62.4
	5	153	37.6	407	100.0

	X23	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	10	.	.	.
Dentist does	1	168	41.5	168	41.5
not keep up	2	177	43.7	345	85.2
with latest in	3	36	8.9	381	94.1
dentistry	4	15	3.7	396	97.8
	5	9	2.2	405	100.0

	X24	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	14	.	.	.
Difficult to	1	63	15.7	63	15.7
get appointment	2	189	47.1	252	62.8
on short notice	3	78	19.5	330	82.3
	4	63	15.7	393	98.0
	5	8	2.0	401	100.0

	X25	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	24	.	.	.
	1	2	0.5	2	0.5
Dentist and	2	37	9.5	39	10.0
staff have taught	3	39	10.0	78	19.9
me alot about	4	229	58.6	307	78.5
care of my teeth	5	84	21.5	391	100.0

	X26	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	5	.	.	.
	1	3	0.7	3	0.7
Overall, I am	2	6	1.5	9	2.2
satisfied with	3	4	1.0	13	3.2
care I receive.	4	209	51.0	222	54.1
	5	188	45.9	410	100.0

	X27	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	12	.	.	.
	1	69	17.1	69	17.1
I feel very	2	181	44.9	250	62.0
nervous about	3	11	2.7	261	64.8
visiting the	4	103	25.6	364	90.3
dentist.	5	39	9.7	403	100.0

	X28	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	25	.	.	.
I have	1	69	17.7	69	17.7
referred others	2	321	82.3	390	100.0
to this dentist.					

X29	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
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I visit dentist:	.	19	.	.
(1=<2 yrs	1	33	8.3	33
2=every 2 yrs	2	37	9.3	70
3=every 18 mos	3	19	4.8	89
4=every 12 mos	4	143	36.1	232
5=every 6 mos	5	142	35.9	374
6=every 3 mos)	6	22	5.6	396

X30	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
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I have been with	.	8	.	.
this dentist:	1	15	3.7	15
(1=<6 mos	2	44	10.8	59
2=6 mos-2 yrs	3	93	22.9	152
3=2-5 yrs	4	255	62.7	407
4=>5 yrs)				100.0

X31	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
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I would	.	41	.	.
recommend this	1	7	1.9	7
dentist.	2	367	98.1	374
(1 = No				100.0
2 = Yes)				

X32	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
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Reason for first	.	9	.	.
visit:	1	84	20.7	84
(1=Other	2	35	8.6	119
2=Toothache	3	29	7.1	148
3=Cleaning	4	258	63.5	406
4=Exam)				100.0

X33	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
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First impression:	.	59	.	.
(1= Negative	1	18	5.1	18
2= Don't	2	74	20.8	92
remember	3	46	12.9	138
3= Favorable	4	218	61.2	356
				100.0

4= Excellent

	X34	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Reason for	.	13	.	.	.
choosing dentist:	1	75	18.7	75	18.7
(1=Other	2	6	1.5	81	20.1
2=Noticed Office	3	8	2.0	89	22.1
3=Yellow Pages	4	26	6.5	115	28.6
4=Staff Refer	5	50	12.4	165	41.0
5=Dr. Refer	6	237	59.0	402	100.0
6=Friend/Family Refer					

	X35	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Staff is	.	14	.	.	.
concerned that I	1	16	4.0	16	4.0
return regularly	2	384	95.8	400	99.8
(1=No 2=Yes)	3	1	0.2	401	100.0

	X36	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Other family	.	124	.	.	.
members using	1	19	6.5	19	6.5
same dentist:	2	20	6.9	39	13.4
(1=Other	3	252	86.6	291	100.0
2=Parent					
3=Spouse/Children)					

	X37	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
I prefer dentist	.	55	.	.	.
located near:	1	248	68.9	248	68.9
(1=Home	2	19	5.3	267	74.2
2=Shopping	3	45	12.5	312	86.7
3=Other	4	46	12.8	358	99.4
4=Work	5	2	0.6	360	100.0
5=School)					

	X38	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	7	.	.	.
How far to	1	106	26.0	106	26.0
dentist:	2	21	5.1	127	31.1
(1=<1 mile	3	191	46.8	318	77.9
2=5-10 miles	4	90	22.1	408	100.0
3=1-5 miles					
4=>10 miles)					

	X39	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	8	.	.	.
Sex	1	144	35.4	144	35.4
(1=Male	2	262	64.4	406	99.8
2=Female)	4	1	0.2	407	100.0

	X40	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	11	.	.	.
Age	1	1	0.2	1	0.2
(1=<18	2	91	22.5	92	22.8
2=18-35	3	114	28.2	206	51.0
3=36-50	4	86	21.3	292	72.3
4=51-65	5	112	27.7	404	100.0
5=>65 )					

	X41	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
	.	7	.	.	.
Marital Status:	1	45	11.0	45	11.0
(1=Widowed	2	49	12.0	94	23.0
2=Single	3	20	4.9	114	27.9
3=Divorced	4	293	71.8	407	99.8
4=Married)	5	1	0.2	408	100.0



	X42	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
# of Children:	.	52	.	.	.
(1=0	1	65	17.9	65	17.9
2=1	2	47	12.9	112	30.9
3=2	3	91	25.1	203	55.9
4=3	4	88	24.2	291	80.2
5=4 or more)	5	72	19.8	363	100.0

	X43	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Education:	.	11	.	.	.
(1=<4 yrs h.s.	1	26	6.4	26	6.4
2=h.s. grad	2	92	22.8	118	29.2
3=<4 yrs college	3	113	28.0	231	57.2
4=college grad	4	110	27.2	341	84.4
5=>4 yrs college)	5	63	15.6	404	100.0

	X44	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Income:	.	54	.	.	.
(1=0-5000	1	10	2.8	10	2.8
2=6000-10000	2	19	5.3	29	8.0
3=11000-15000	3	50	13.9	79	21.9
4=16000-25000	4	66	18.3	145	40.2
5=26000-35000	5	90	24.9	235	65.1
6=36000-50000	6	76	21.1	311	86.1
7=51000 +	7	50	13.9	361	100.0

STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE X8

STEP 8 VARIABLE X6 REMOVED R SQUARE = 0.35279663  
C(P) = 5.69624676

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	6	74.08729280	12.34788213	16.26	0.0001
ERROR	179	135.91270720	0.75928887		
TOTAL	185	210.00000000			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	1.86255914				
X14	0.28750811	0.11338393	4.88207280	6.43	0.0121
X15	-0.17731416	0.08027191	3.70481617	4.88	0.0284
X19	-0.20744087	0.06211979	8.46712073	11.15	0.0010
X22	0.27064528	0.11217930	4.41959520	5.82	0.0168
X24	-0.10251808	0.06768985	1.74164960	2.29	0.1317
X25	0.24077370	0.08240135	6.48270878	8.54	0.0039

BOUNDS ON CONDITION NUMBER: 1.534044, 44.82046

NO OTHER VARIABLES MET THE 0.0000 SIGNIFICANCE LEVEL FOR ENTRY INTO THE MODEL.

SUMMARY OF STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE X8

STEP	VARIABLE ENTERED	VARIABLE REMOVED	NUMBER IN	PARTIAL R**2	MODEL R**2	C(P)
1	X22		1	0.1978	0.1978	38.2623
2	X19		2	0.0604	0.2581	23.6852
3	X14		3	0.0364	0.2946	15.6852
4	X25		4	0.0336	0.3282	8.4566
5	X15		5	0.0163	0.3445	5.9733
6	X24		6	0.0083	0.3528	5.6962
7	X6		7	0.0062	0.3590	5.9824
8		X6	6	0.0062	0.3528	5.6962

STEP	VARIABLE ENTERED	VARIABLE REMOVED	F	PROB>F
1	X22		45.3586	0.0001
2	X19		14.8937	0.0002
3	X14		9.3967	0.0025
4	X25		9.0557	0.0030
5	X15		4.4840	0.0356
6	X24		2.2938	0.1317
7	X6		1.7335	0.1897
8		X6	1.7335	0.1897

STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE X26

STEP 14 VARIABLE X40 REMOVED R SQUARE = 0.54030309  
C(P) = -2.88008468

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	10	33.74149457	3.37414946	20.69	0.0001
ERROR	176	28.70770330	0.16311195		
TOTAL	186	62.44919786			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	0.80129801				
X2	0.20193053	0.06676748	1.49196890	9.15	0.0029
X9	0.06601924	0.03484253	0.58560867	3.59	0.0598
X13	0.08074601	0.04781767	0.46510521	2.85	0.0931
X16	0.08280028	0.04045115	0.68341993	4.19	0.0422
X20	0.09765847	0.03836554	1.05687330	6.48	0.0118
X22	0.35522374	0.05519707	6.75550330	41.42	0.0001
X23	-0.07760076	0.03379656	0.85994885	5.27	0.0228
X27	-0.05702740	0.02180662	1.11551739	6.84	0.0097
X42	0.04679970	0.02407354	0.61644131	3.78	0.0535
X43	0.04267622	0.02703400	0.40647816	2.49	0.1162

BOUNDS ON CONDITION NUMBER: 1.738816, 123.2926

NO OTHER VARIABLES MET THE 1.0000 SIGNIFICANCE LEVEL FOR ENTRY INTO THE MODEL.

SUMMARY OF STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE X26

STEP	VARIABLE ENTERED	VARIABLE REMOVED	NUMBER IN	PARTIAL R**2	MODEL R**2	C(P)
1	X22		1	0.3889	0.3889	32.5319
2	X20		2	0.0421	0.4310	19.6850
3	X27		3	0.0306	0.4615	10.9033
4	X2		4	0.0288	0.4903	2.7579
5	X5		5	0.0101	0.5004	1.2079
6	X23		6	0.0073	0.5077	0.6248
7	X16		7	0.0075	0.5152	-0.0285
8		X5	6	0.0043	0.5109	-0.5244
9	X42		7	0.0083	0.5192	-1.4439
10	X43		8	0.0068	0.5260	-1.8468
11	X9		9	0.0068	0.5329	-2.2535
12	X13		10	0.0074	0.5403	-2.8801
13	X40		11	0.0047	0.5450	-2.5434
14		X40	10	0.0047	0.5403	-2.8801

STEP	VARIABLE		F	PROB>F
	ENTERED	REMOVED		
1	X22		117.7088	0.0001
2	X20		13.6125	0.0003
3	X27		10.3897	0.0015
4	X2		10.2720	0.0016
5	X5		3.6465	0.0578

STEP	VARIABLE		F	PROB>F
	ENTERED	REMOVED		
6	X23		2.6779	0.1035
7	X16		2.7779	0.0973
8		X5	1.5747	0.2112
9	X42		3.0821	0.0809
10	X43		2.5588	0.1115
11	X9		2.5857	0.1096
12	X13		2.8514	0.0931
13	X40		1.8140	0.1798
14		X40	1.8140	0.1798

STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE X28

STEP 7 VARIABLE X11 REMOVED

R SQUARE = 0.23896162

C(P) = -11.93385400

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	5	5.83767662	1.16753532	11.18	0.0001
ERROR	178	18.59167121	0.10444759		
TOTAL	183	24.42934783			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	0.59878055				
X6	0.06516020	0.04189924	0.25261029	2.42	0.1217
X16	-0.06083781	0.03140280	0.39202054	3.75	0.0543
X19	-0.03619861	0.02280009	0.26327459	2.52	0.1141
X22	0.20458772	0.03780131	3.05945383	29.29	0.0001
X35	0.23157499	0.13351584	0.31420718	3.01	0.0846

BOUNDS ON CONDITION NUMBER: 1.257975, 27.94154

NO OTHER VARIABLES MET THE 1.0000 SIGNIFICANCE LEVEL FOR ENTRY INTO THE MODEL.

1 SAS 21:01 THURSDAY, APRIL 23, 1987 4

SUMMARY OF STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE X28

STEP	VARIABLE ENTERED	VARIABLE REMOVED	NUMBER IN	PARTIAL R**2	MODEL R**2	C(P)
1	X22		1	0.1912	0.1912	-9.8829
2	X35		2	0.0127	0.2039	-10.5557
3	X16		3	0.0129	0.2168	-11.2672
4	X19		4	0.0118	0.2286	-11.7590
5	X6		5	0.0103	0.2390	-11.9339
6	X11		6	0.0085	0.2475	-11.7308
7		X11	5	0.0085	0.2390	-11.9339

STEP	VARIABLE ENTERED	VARIABLE REMOVED	F	PROB>F
1	X22		43.0175	0.0001
2	X35		2.8892	0.0909
3	X16		2.9628	0.0869
4	X19		2.7492	0.0991
5	X6		2.4185	0.1217
6	X11		2.0096	0.1581
7		X11	2.0096	0.1581

## STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE X29

STEP 8 VARIABLE X35 REMOVED R SQUARE = 0.14863712  
C(P) = -3.29150745

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	6	44.68272887	7.44712148	5.18	0.0001
ERROR	178	255.93348735	1.43782858		
TOTAL	184	300.61621622			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	1.23106943				
X1	0.59440094	0.19922649	12.79887908	8.90	0.0032
X16	-0.27424612	0.12005504	7.50286759	5.22	0.0235
X21	-0.29430070	0.17609917	4.01582786	2.79	0.0964
X25	0.26809075	0.11407824	7.94081692	5.52	0.0199
X36	0.28365589	0.17606218	3.73214559	2.60	0.1089
X40	0.22221171	0.09224795	8.34310130	5.80	0.0170

BOUNDS ON CONDITION NUMBER: 1.370318, 43.32101

NO OTHER VARIABLES MET THE 1.0000 SIGNIFICANCE LEVEL FOR ENTRY INTO THE MODEL.

## SUMMARY OF STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE X29

STEP	VARIABLE ENTERED	VARIABLE REMOVED	NUMBER IN	PARTIAL R**2	MODEL R**2	C(P)
1	X1		1	0.0547	0.0547	5.21278
2	X40		2	0.0229	0.0776	2.69244
3	X16		3	0.0272	0.1049	-0.67185
4	X25		4	0.0190	0.1239	-2.42300
5	X21		5	0.0123	0.1362	-2.84590
6	X36		6	0.0124	0.1486	-3.29151
7	X35		7	0.0090	0.1576	-3.06104
8		X35	6	0.0090	0.1486	-3.29151

STEP	VARIABLE ENTERED	VARIABLE REMOVED	F	PROB>F
1	X1		10.5896	0.0014
2	X40		4.5280	0.0347
3	X16		5.5064	0.0200
4	X25		3.9125	0.0495
5	X21		2.5489	0.1121
6	X36		2.5957	0.1089
7	X35		1.8875	0.1712

8

X35

1.8875

Ø.1712

STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE X30

STEP 18 VARIABLE X20 REMOVED

R SQUARE = 0.35688151  
C (P) = 11.49355478

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	16	43.56256914	2.72266057	5.86	0.0001
ERROR	169	78.50194699	0.46450856		
TOTAL	185	122.06451613			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	2.52568154				
X2	-0.30565297	0.12939959	2.59170255	5.58	0.0193
X6	0.30952642	0.09276409	5.17165376	11.13	0.0010
X10	-0.11708760	0.06230389	1.64053387	3.53	0.0619
X11	0.11907320	0.05126228	2.50625836	5.40	0.0214
X14	0.20375366	0.09994586	1.93052307	4.16	0.0430
X17	-0.17849363	0.07967927	2.33103313	5.02	0.0264
X18	-0.10575877	0.04986434	2.08951894	4.50	0.0354
X19	0.09352584	0.04997977	1.62655372	3.50	0.0630
X32	0.07112195	0.04597619	1.11156568	2.39	0.1238
X33	-0.07907948	0.05430307	0.98508260	2.12	0.1472
X34	-0.09941132	0.02640164	6.58572633	14.18	0.0002
X39	0.28845363	0.10843047	3.28732814	7.08	0.0086
X40	0.21239260	0.05679652	6.49574573	13.98	0.0003
X42	-0.09260074	0.04256450	2.19850589	4.73	0.0310
X43	-0.11477881	0.04984654	2.46290167	5.30	0.0225
X44	0.11949540	0.03844891	4.48671043	9.66	0.0022

BOUNDS ON CONDITION NUMBER: 1.638793, 320.2751

NO OTHER VARIABLES MET THE 1.0000 SIGNIFICANCE LEVEL FOR ENTRY INTO THE MODEL.

1 SAS 21:07 THURSDAY, APRIL 23, 1987 12

SUMMARY OF STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE X30

STEP	VARIABLE ENTERED	VARIABLE REMOVED	NUMBER IN	PARTIAL R**2	MODEL R**2	C(P)
1	X34		1	0.0752	0.0752	53.0975
2	X6		2	0.0330	0.1082	46.7185
3	X18		3	0.0311	0.1393	40.8180
4	X40		4	0.0263	0.1656	36.1212
5	X39		5	0.0337	0.1993	29.5654
6	X32		6	0.0182	0.2174	26.9442
7	X11		7	0.0197	0.2371	23.9344
8	X44		8	0.0184	0.2556	21.2494



9	X19		9	0.0157	0.2713	19.2519
10	X42		10	0.0157	0.2870	17.2570
11	X43		11	0.0152	0.3022	15.3916
12	X17		12	0.0104	0.3126	14.7422
13	X10		13	0.0101	0.3227	14.1809
14	X2		14	0.0105	0.3332	13.5204
15	X14		15	0.0156	0.3488	11.5452
16	X33		16	0.0081	0.3569	11.4936
17	X20		17	0.0071	0.3640	11.6854
18		X20	16	0.0071	0.3569	11.4936

		VARIABLE			
STEP	ENTERED	REMOVED		F	PROB>F
1	X34			14.9663	0.0002
2	X6			6.7633	0.0101
3	X18			6.5712	0.0112
4	X40			5.7143	0.0179
5	X39			7.5653	0.0066
6	X32			4.1579	0.0429
7	X11			4.5982	0.0334
8	X44			4.3817	0.0378
9	X19			3.7979	0.0529
10	X42			3.8570	0.0511
11	X43			3.7914	0.0531
12	X17			2.6230	0.1071
13	X10			2.5586	0.1115
14	X2			2.6837	0.1032
15	X14			4.0823	0.0449
16	X33			2.1207	0.1472
17	X20			1.8788	0.1723
18		X20		1.8788	0.1723

STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE X31

STEP 12 VARIABLE X15 REMOVED R SQUARE = 0.26926986  
C(P) = -1.52542833

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	10	0.79404011	0.07940401	6.08	0.0001
ERROR	165	2.15482353	0.01305954		
TOTAL	175	2.94886364			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	1.46309007				
X10	-0.01604857	0.01040170	0.03108796	2.38	0.1248
X12	0.05956946	0.01891524	0.12952431	9.92	0.0019
X14	-0.04860361	0.01803058	0.09489545	7.27	0.0078
X17	0.03005653	0.01394430	0.06067534	4.65	0.0326
X19	-0.01286708	0.00875356	0.02821747	2.16	0.1435
X21	0.03514425	0.01939082	0.04289869	3.28	0.0717
X22	0.03903205	0.01592052	0.07849749	6.01	0.0153
X27	0.01927602	0.00661827	0.11078299	8.48	0.0041
X32	0.02187860	0.00751943	0.11055970	8.47	0.0041
X33	0.02586670	0.00902142	0.10736426	8.22	0.0047

BOUNDS ON CONDITION NUMBER: 1.780899, 138.281

NO OTHER VARIABLES MET THE 1.0000 SIGNIFICANCE LEVEL FOR ENTRY INTO THE MODEL.

SUMMARY OF STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE X31

STEP	VARIABLE ENTERED	VARIABLE REMOVED	NUMBER IN	PARTIAL R**2	MODEL R**2	C(P)
1	X22		1	0.0860	0.0860	18.7222
2	X33		2	0.0373	0.1233	12.9299
3	X27		3	0.0289	0.1522	8.9057
4	X32		4	0.0213	0.1735	6.4651
5	X12		5	0.0166	0.1900	5.0086
6	X14		6	0.0267	0.2167	1.4469
7	X17		7	0.0191	0.2358	-0.5383
8	X21		8	0.0129	0.2487	-1.2313
9	X10		9	0.0110	0.2597	-1.5288
10	X19		10	0.0096	0.2693	-1.5254
11	X15		11	0.0083	0.2776	-1.2535
12		X15	10	0.0083	0.2693	-1.5254

STEP	VARIABLE ENTERED	VARIABLE REMOVED	F	PROB>F
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1	X22	16.3656	0.0001
2	X33	7.3694	0.0073
3	X27	5.8571	0.0166
4	X32	4.4029	0.0373
5	X12	3.4767	0.0640
6	X14	5.7507	0.0176
7	X17	4.1986	0.0420

STEP	VARIABLE		F	PROB>F
	ENTERED	REMOVED		
8	X21		2.8687	0.0922
9	X10		2.4689	0.1180
10	X19		2.1607	0.1435
11	X15		1.8800	0.1722
12		X15	1.8800	0.1722

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