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Alumni Characteristics that Predict Promoting and Donating to Alma Mater: Implications for Alumni Relations

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ALUMNI CHARACTERISTICS THAT PREDICT PROMOTING AND DONATING TO ALMA MATER: IMPLICATIONS FOR ALUMNI RELATIONS

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This dissertation, submitted by Sheila Kay Hanson in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory committee under whom the work has been done and is hereby approved.

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This dissertation meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

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ABSTRACT

Because of declining state funding and rising costs for institutions of higher education, support from alumni is of major interest to university administrators, alumni associations, university advancement officials and other stakeholders. Gifts from alumni are becoming more important in sustaining revenue streams for institutions of higher education. In addition, alumni support their alma maters by recruiting new students and promoting the institution to others. Understanding more about the attitudes which underlie the relationship between alumni and their alma maters provide insights useful to university and alumni relations in building and managing the future of their institutions.

Included in this study were University of North Dakota alumni who were members of graduating classes between 1945 and 1995. The sample, drawn by a proportional stratified sampling method, consisted of 2,500 alumni from the UND Alumni Association database.

The purpose of this study was to determine the relationship of selected student demographics, student academic involvement, student social involvement, alumni demographics, alumni social involvement, and alumni attitudinal measures with alumni supportive behaviors. A conceptual model was developed from previous research to predict alumni support. Canonical

correlation was utilized to analyze a set of 22 independent variables with a set of dependent variables, namely promoting the institution to others and donating financial resources.

Using logistic regression to first predict whether or not alumni would donate, 71.41% were correctly classified as donors or non-donors. Further analysis by stepwise linear regression provided predictive models for individual giving amounts and promoting the institution to others. Predictors of individual giving amounts included individual income, perception of financial need, years since graduation, attendance at alumni activities, and number of children. Predictors of promoting the institution to others included organizational prestige, social identification, years since graduation, and respect for alumni leaders.

Marketing strategies involving targeting and segmentation of alumni can aid an institution of higher education in attracting support in an environment of increasing competition for private and public resources. Key to these marketing strategies is the identification of factors that influence the relationship between an individual and the institution of higher education.

CHAPTER I

INTRODUCTION

Survival is a major concern among institutions of higher education. Because of the dual specters of declining state funding and rising costs, these institutions are increasingly using philosophies and techniques from marketing to generate adequate resources. Given these conditions, support from alumni of institutions of higher education is of major interest to university administrators, alumni associations, university advancement officials and other stakeholders.

Gifts from alumni are becoming more important in sustaining revenue streams for institutions of higher education. In addition, alumni can support their alma maters by recruiting new students and promoting the institution through word-of-mouth testimonials. This alumni support grows out of the relationship between students and their institution of higher education. The unique relationship between students and their alma mater is both deep and enduring, yet it evolves over time. Understanding more about the attitudes that underlie this relationship and supportive behaviors that grow from it provide insights useful to university and alumni relations personnel in building and managing the future of their institutions.

Marketing strategies can be developed based on the characteristics and attitudes of alumni. Marketing plans and campaigns involving targeting and

segmentation of alumni can aid an institution of higher education in attracting support in an environment of increasing competition for private and public resources. Key to these marketing strategies is the identification of factors that influence the relationship between an individual and the institution of higher education.

Background on Alumni Contributions

Colleges and universities rely heavily on the support of alumni. Alumni contributions can take the form of volunteer assistance in recruitment, fund raising, providing internships and career opportunities for students, guest lecturing on campus, committee work, participation in special university and alumni events, and financial donations.

Recent Trends in Financial Donations to Higher Education

During the 1990's, philanthropy to higher education was strong. The total amount of private giving in 1998-1999 was $20.4 billion dollars, which was twice the $10.2 billion total reported in 1990-1991 (Lively, 2000). The decade was characterized by megagifts. Gifts of $100 million or more were reported by 27 instititions of higher education (Lively, 2000).

The value of private gifts to colleges and universities in the United States during 1998-1999 increased at the fastest rate since 1986-1987. Attributed to a strong U.S. economy, rising stock market, and the popularity of planned giving, total donations to higher education increased to an estimated $18.4 billion in academic year 1998, up from $16 billion in 1997 (Pulley, 1999). The 15%

increase (which is 13% when adjusted for inflation) follows three years of double-digit percentage increases. Based on information received from 1,034 colleges and universities, the amount of giving increased at most types of institutions, according to the report, "Voluntary Support of Education," by the Council for Aid to Education.

The increase in gifts to higher education in 1998 represented a broader trend in philanthropy. In 1998, Americans gave a record $174.5 billion to various non-profit organizations, including colleges and universities, according to "Giving USA 1999." The total represents a 10.7% increase over the previous year.

The generosity of contributors resulted in fund-raising records at institutions of many types in 1998. Harvard University led all institutions with $462.7 million, up from $427.6 million in 1997 (Pulley, 1999). Harvard also ranked first in alumni giving and in giving by individuals other than alumni. Other institutions, which reported record years in 1998, included Duke University ($254.8 million), Michigan State University ($72.1 million), the University of Missouri at Columbia ($36.2 million), and the University of North Dakota ($14.4 million) from 12,757 new gifts. In addition, the University of North Dakota announced a record gift of $100 million from Ralph Engelstad (Pulley, 1999).

There has been a steady rise in private giving to institutions of higher education during this decade. Since 1993, private gifts to institutions of higher education have increased by 64.3%, or 44.7% when adjusted for inflation (Pulley, 1999). Many of the individuals who donated to colleges in 1998 had

more personal wealth available to give and more incentives to do so. Federal tax law makes charitable giving attractive to investors who made money in the dramatically positive markets of the 1990s. As fortunes were created in the stock market, gifts to colleges and universities increased accordingly. In 1998, nine colleges and universities reported individual gifts or pledges of $50 million or more, including Vanderbilt University, which received a $300 million gift of stock from the Ingram Charitable Trust (Pulley, 1999).

Although contributions to higher education from all sources increased during the 1990's, the most reliable source of funds to institutions of higher education continued to be alumni of these institutions. The total of $5.93 billion in alumni gifts in 1999 constituted 29% of giving to colleges and universities (Lively, 2000). Giving from alumni was up from the total $3 billion in 1993, which represented 27% of the total giving to institutions.

Corporate gifts, on the other hand, account for a declining proportion of private contributions to higher education. From 1993 to 1999, corporate giving increased from $2.4 billion to $3.61 billion, but the 1999 total accounted for 18% of all gifts, down from 21% six years earlier (Lively, 2000; Pulley, 1999). In recent years, large companies have tended to donate only to large research universities. The increase in funds used in acquisitions and mergers may have slowed the growth of corporate giving to higher education (Pulley, 1999).

Gifts often are received with stipulations attached. In 1998, institutions collected $3.88 in restricted gifts for every $1.00 in restricted gifts. In 1996, the

ratio was closer to three to one (Pulley, 1999). Planned gifts were also an increasingly significant source of funds in 1998. Bequests and deferred contributions totaled more than $1.5 billion, an increase of 30% over 1997 (Pulley, 1999).

Research on Alumni Fundraising

One major shortcoming in alumni fundraising research has been the absence of efforts that identifies the characteristics of potential donors. Knowing the characteristics of potential donors could increase the effectiveness of fund-raising efforts. Research that builds on the existing base of empirical fund-raising research increases the availability of information to understand and improve fund-raising efforts and alumni-university relationships.

Relationship Between Alumni and Alma Mater

Every generation of students, faculty, and administrators forges a unique and special attachment to alma mater. The basis for this attachment might be nostalgia or loyalty, appreciation based on later success, or simply the fact that the university experience played a prominent role in their lives (Rylance, 1983). The unique relationship that exists between alumni and the university was characterized by University of North Dakota President Thomas Kane in 1925:

> We all know but we do not always realize that a university is made up of faculty, students and alumni. . . Alumni are members of the household the same as married children never lose their ties with the old home. The same holds true for all former students, whether graduating or not, that they keep up the old home ties. (Rylance, 1983, p. 117)

Four conditions distinguish relationships (Hinde, 1995). First, relationships involve reciprocal exchange between active and interdependent relationship partners. Second, relationships are purposive, providing meanings to the persons who engage in them. Third, relationships are multidimensional, providing a range of possible benefits for their participants. Finally, relationships represent a process that changes and evolves across a series of interactions and in response to changes in the context in which they take place.

Relationship Marketing

Relationship marketing is an approach to marketing that focuses on relationships as a basis for exchange, practice and academic research (Berry, 1995). In both theory and practice, relationship marketing focuses on the benefits of maintaining a relationship with customers beyond a utilitarian transactional exchange. Morgan and Hunt (1994) proposed that relationship marketing "refers to all the marketing activities directed towards establishing, developing, and maintaining successful relationship exchange" (p. 22). From a consumer-oriented perspective, marketing activities are performed with the intention of developing and managing long-term, trusting relationships with customers through relationships (Kotler, 1994). Long-term relationships can be developed with various stakeholder groups, such as customers, suppliers, and employees. In a university, the stakeholder groups include faculty, staff, students, future students, and alumni.

Relationships occur over time, while transactions are isolated events ɔurnier, 1998). Relationships constitute a series of repeated exchanges tween two parties known to each other; they evolve in response to ongoing mmunications and to changes in the contextual environment. For purposes of ıdy, researchers generally decompose the entire process of relationship velopment into manageable growth segments. Most researchers adopt a ɔdel which includes the phases of initiation, growth, maintenance, terioration, and dissolution (Fournier, 1998). Each stage constitutes one erval in a sequence of changes in both the type of relationship and the level of ensity (e.g., an increase or decrease in emotional involvement). Theories fer in the number of stages, the nature of the critical developmental events at ıch stage, and the mechanisms governing transitions between stages.

Alumni Supportive Behaviors

From the perspective of non-profit organizations, supportive behaviors are ehavior[s] that enhance the welfare of a needy other, by providing aid or enefit, usually with little or no commensurate reward in return" (Bendapudi, ingh, & Bendapudi, 1996, p. 34). By considering the supportive behaviors ıward nonprofit organizations as relational exchange, relationship marketing ıeory may be applied to non-profit organizations, such as universities.

Studies of supportive behaviors tend to focus on characteristics of the ıdividuals and/or the perceptions of the non-profit organizations, while verlooking the relationship between the individual and the organization.

Typically, research regarding supportive behaviors in the non-profit context examines monetary donation as the supportive behavior of interest. Several factors are posited to explain monetary supportive behavior for universities, including student demographics, student academic and social involvement, alumni demographics, alumni social involvement, and alumni attitudinal research.

Promoting an institution to others is a less tangible form of support with more indirect effects, which is also studied by scholars of non-profit organizations. For example, alumni who promote an academic institution to others are aiding in the process of recruiting new students to the university. This type of support is relevant to universities because the maintenance and/or growth of the student population is also vital to institutional survival. The role of alumni in the student recruitment process has not been the major focus of past alumni research; rather the focus has been on donations and financial support.

Past research focused on the long-term relationship between a university and its alumni. This research typically employed student characteristics, alumni characteristics, and alumni attitudinal factors to explain supportive behaviors, and indicated that these factors determine the continuing relationship between the individual and the non-profit organization. This research contends that factors that influence the alumni-university relationship should be isolated and identified.

Statement of the Problem

Because institutions of higher education must rely more and more on alumni for financial and other forms of support necessary for survival, a knowledge of the factors that influence alumni giving and donor motivation and behavior is useful. Also, it may not be effective for institutions of higher education to solicit all of their alumni in the same way. The costs of contacting alumni grow with each graduating class, and only a small percentage of alumni contribute. Thus, the development of specific strategies designed to influence segments of alumni who are most likely to support or contribute is, therefore, an appropriate dimension of successful fund-raising in higher education (Grill, 1988, p. 6).

The objective of this study is to determine the relationship between selected student demographics, the degree of student academic involvement, student social involvement, alumni demographics, alumni social involvement and alumni attitudes towards their institution of higher education and supportive behaviors, either financial donations or promoting the institution to others. The study is based upon student involvement theory that utilizes attitudinal, behavioral, participatory and demographic variables (Pace, 1984).

Awareness of donor characteristics could assist development officials in identifying prospects. Knowledge of donor characteristics could also help fundraisers to more accurately predict which alumni are likely to support their alma mater.

Research Questions

The following research questions are addressed by this study:

Research Question One

To what extent are donating and promoting the institution to others, both forms of supporting alma mater, related to one another?

Research Question Two

To what extent do student demographics (gender and home state); student academic involvement (scholarship and bachelor's degree recipients); student social involvement (number of campus organizations, fraternity or sorority membership, letterwinner); alumni demographics (years since graduation, marital status, number of children, state of residence, and individual income); alumni social involvement (visits back to campus, attend alumni activities); and alumni attitudes (identification, felt reciprocity, satisfaction, perceived financial need, respect for university leaders, respect for alumni leaders, and organizational prestige) predict the degree to which alumni promote a university to others?

Research Question Three

To what extent do the previously-identified variables (student demographics, student academic involvement, student social involvement, alumni demographics, alumni social involvement, and alumni attitudes) predict whether or not an individual is a donor to a university?

Research Question Four

Among those individuals classified as donors, which of the previously-identified variables related to student demographics, student academic involvement, student social involvement, alumni demographics, alumni social involvement, and alumni attitudes best predict the amount of individual giving?

In addition to the four research questions, this study provides the University of North Dakota with descriptive data regarding alumni donors and alumni non-donors so that the institution can maximize its fundraising efforts.

Limitations

This study is limited by the following:

1. The accuracy of self-reported measures.
2. The generalizability of the findings of this research beyond the University of North Dakota to other college and university alumni in the United States.

Delimitations

The study is delimited to the following:

1. All the participants in this study were graduates of one institution, the University of North Dakota.
2. Alumni of the University of North Dakota who graduated between 1945 and 1995.
3. Alumni who have a record in the University of North Dakota Alumni Association database.

Organization of the Chapters

The study is organized in six chapters. The format of the study is as follows: Chapter I includes an introduction to the problem, the purpose of the study, a statement of the problem, a statement of the research questions, delimitations, and organization of the study. Chapter II consists of a review of related literature. Chapter III describes the procedures used to obtain and analyze the data. Chapter IV discusses the reliability of the study. Chapter V reports the results of the study and the statistical techniques used to reach the findings. Chapter VI includes the summary, conclusions, and recommendations based on the results of Chapter V.

CHAPTER II

REVIEW OF THE LITERATURE

This review of literature is a compilation from a broad range of disciplines, including higher education, social psychology, and marketing. A history of alumni support, specifically that of the University of North Dakota, is presented. This chapter will review the extent to which student demographics, student academic involvement, student social involvement, and alumni attitudes affect alumni supportive behaviors.

History of Support for Higher Education in the U.S.

The history of alumni giving in the United States can be traced to the formation of the first American colleges. Harvard, for example, graduated its first alumni in 1642. Two of its graduates gave the first alumni contribution to a college in 1645, with the donation of a garden to Harvard. In 1672, a graduate of Harvard's first class donated the funds for the construction of a new building for the college (Curti & Nash, 1965).

However, it was not until the 19th century that alumni became organized into associations (Curti & Nash, 1965). In the 1860s, colleges started using alumni associations for fund-raising campaigns. In the 1890s, Yale, Brown, Cornell, and Dartmouth were among institutions of higher education to establish annual alumni giving campaigns (Curti & Nash, 1965).

The Greenbrier Conference, which was held in 1958, resulted in a set of guidelines for collegiate development efforts. Recommendations resulting from that conference established a structure for institutional advancement programs, combining public relations, alumni relations, and fund-raising (Brittingham & Pezzullo, 1990). These recommendations followed the standard for many institutions until the middle of the 1970s, when fund-raising in institutions of higher education became a coordinated function (Cook & Lasher, 1996).

Pressure continues on institutions of higher education to raise more money to compensate for declining revenues from state and federal sources. Research on fund raising in higher education is often conducted by professional organizations and/or doctoral students. Much of the research on university alumni donations consists of doctoral dissertations that are case studies of institutions where the researchers have received degrees or are employed.

Studies of Support of Higher Education in the U.S

Brittingham and Pezzullo (1990) point out that the conclusions from previous donor studies show mixed results. In many cases, variables found to be significant in one study are not significant in another. The contradictory results may represent individual differences in the institutions studied.

According to Volkwein, Webster-Saft, and Agrotes (1989), individuals base their decisions to donate or not donate on their motivation and capacity to give. This explanation is intuitive, indicating that alumni are not likely to give unless they want to, and cannot give unless they have the resources to do so.

Unfortunately, obtaining direct measures of capacity and motivation are not always accessible. As a result, a host of variables have been used to approximate both capacity and motivation in alumni research.

Seymour (1966) in Designs for Fundraising identified the basic motivations associated with giving. Seymour indicated that one common motivation is the "pride of association." Seymour (1966) also suggested the following key principles of employing motivators:

1. We follow leaders who have our confidence.
2. We choose to support winning ideas. Support flows to promising programs and great ideas, not to needy causes.
3. People strive for measurable and praiseworthy attainment.
4. Causes need measurable objectives.
5. We relish earned reward and recognition. The pins awarded for long service, the diplomas and other evidence of personal involvement in worthwhile groups all have a message (p. 8).

Donor identification is a challenge, because it covertly takes both "art and a science" (to successfully select viable prospects). According to Smith (1981),

> Fund raising is more an art than science and is likely to remain so. It is impossible to subject the basic causal relationships in fund raising to rational analysis. In the case of many large gifts, for example, the gestation period takes several years and the causal chains are intricate. Almost always they include some factors that we cannot know or do not understand and others that, although we may perceive them more or less clearly, we cannot influence. (p. 61)

Donors want to know that somebody wants them, cares about them, needs them, and wants to listen to what they say. Other motivators for donors include benefits from tax advantages, the need to feel important, a sense of gratitude, desire for public recognition, guilt or a sense of obligation, or personal conviction (Haggberg, 1992).

Burnett and Wood's model of the donation decision process (Burnett & Wood, 1988) describes the variables and relationships considered salient in donation behavior. The model suggests that there are several antecedent states before the donation decision. These states consist of the characteristics at the time of donation including both demographic traits and situational factors. Empirical support for the area of demographic traits has been demonstrated in previous research.

Empirical research regarding situational factors has supported the notion that alumni who are involved and informed about their alma mater are inclined to donate. Findings also show that an appeal that is made to an alumnus in a highly personal and direct manner is positively related to donation to an institution.

The last dimension of the model describes the donation exchange dyad. Burnett and Wood (1988) explain that social exchange theory and equity theory predict that the closer the match between the donor and the institution with regard to the characteristics shared and resources exchanged, the more likely the exchange will take place.

Marketing in a University Environment

Principles of marketing may be applied in university settings. University advancement personnel, student recruiters, fund-raisers for the alumni associations, and alumni may all contribute to the effort to market the university. However, the application of marketing principles to university problems is fairly new.

Donating often grows out of a relationship, implying some developed understanding between two parties. According to Levitt (1986),

> The sale merely consummates the courtship. Then the marriage begins. How good the marriage is depends on how well the relationship is managed by the seller. That determines whether there will be continued or expanded business or troubles and divorce, and whether costs or profits increase. In some cases, divorce is impossible, as when a major construction or installation project is underway (p.111).

The relationship between a graduate of an institution of higher education and the institution has sometimes been compared to marriage. One key difference is that an alumni relationship with alma mater lasts a lifetime on some level, while a marriage may end in divorce.

In fund-raising, marketing strategies can be employed to influence supportive behaviors. Officials can identify appropriate donor segments, develop and match attributes of the non-profit organization to the benefits desired by each donor segment, and develop a marketing program with an appropriate marketing mix to reach each segment. Central to strategy development is understanding that supportive behaviors such as donating consist of more than just the act of giving something of value to a non-profit organization.

Characteristics that Predict Support

Previous research has uncovered numerous characteristics that predict alumni support of alma mater. Brittingham and Pezzullo (1990) identified nearly 40 variables that have been utilized in past studies of donor behavior. Those characteristics are reviewed in the following section.

Student Demographics

Gender. Brittingham and Pezzullo (1990) report that gender is a poor predictor of donor behavior among alumni. Martin (1993), Pearson (1996) and Baker (1998) found that gender does not discriminate between donors and non-donors and is not associated with the amount of donation among donors.

Haddad (1986) found that males contributed significantly larger amounts than did females. However, gender did not discriminate between the likelihood to be a donor versus a non-donor. Similarly, McKee (1975) found no significant differences between the genders with respect to donor status.

The results of studies investigating the relationship between gender and donor behavior may be due to measurement effects rather than actual gender difference. Mosser (1993) indicated that many institutions record all giving from married couples under the male's giving history. This occurs even in situations where alumnae were married to male non-alumni, thus biasing the data in favor of males as higher donors.

Scholarship Recipient. Past research indicates there is a connection between alumni giving and the receipt of adequate financial aid (Brittingham &

Pezzullo, 1990). Beeler (1982) found that alumni who had received grants or scholarships as undergraduates were more likely to be donors. House (1987) reported that the receipt of some form of financial aid, such as scholarships, grants, or loans, indicated a significant correlation with level of giving. Martin (1993) did not find receipt of a scholarship to discriminate between donors and non-donors.

Student Academic Involvement

Bachelor's Degree. Spaeth and Greeley (1970) found that persons who had attended only one college were more likely to make a contribution than those who had attended several colleges. Miracle (1977) found that alumni possessing an undergraduate degree from an institution other than the one in which they originally enrolled were less likely to be donors. Miracle concluded that this finding supports the belief that the undergraduate degree is the most important consideration in attempting to predict alumni contributions. Similar findings were reported by Beeler (1982) who found that alumni who sought additional education at another institution subsequent to receiving a bachelor's degree were still more likely to be donors than non-donors. Beeler concluded that the institution from which the undergraduate degree is obtained remains the basis for alumni support in spite of affiliations with subsequent colleges and universities. Brittingham and Pezzullo (1990) reported higher donations among graduates who had earned a baccalaureate versus those who had merely attended a particular institution without graduating.

Student Involvement

Student involvement theory considers curriculum, attachment, faculty relationships, and quality of peer relationships as predictors of the academic and social integration experiences of alumni. Pace (1984) found that there is a basic wholeness of the college experience leading to specific outcomes, such as philanthropy. The Pace model also looks at the relationship between involvement and student learning and determined that what a student gains from the college experience depends not only on what college does for them, but also on the effort that the student puts into college. Pace's conclusion is that the quality of student effort is significantly related not only to student growth and development but also to student persistence.

Baker (1998) found that participation in activities while a student predicted classification as a donor, but it did not predict level of donation. McNally (1975) and Pearson (1996) did not find that the number of extracurricular activities predicted classification as a donor.

Student Social Involvement

Involvement in Campus Organizations. Gardner (1975) conducted a study of 600 alumni of Harding College and found that alumni donors were more likely to be involved in extracurricular activities than non-donors. Shadoian (1989) and Oglesby (1991) both observed that the number of extracurricular activities was significant in predicting donor status. However, neither of these researchers

determined any significant relationship between the number of extracurricular activities and donor levels.

Fraternity/Sorority Membership. Specific types of extracurricular activities have been linked to alumni giving. For example, Haddad (1986) determined that fraternity and sorority members were more likely to be donors. In addition, Martin (1993) found that membership in fraternities and sororities was a variable which significantly discriminated between donors within high versus low levels of donation.

Athletics. It is in question whether intercollegiate athletics increase, or diminish, support for regular university programs. Oglesby (1991) found that those who participated in varsity athletics had a tendency to give in larger amounts than did the general alumni population. Coughlin and Erekson (1985) selected 52 universities from major athletic conferences, plus some large independents, and investigated relationships between both state aid and voluntary support and measures of athletic success: winning football and basketball percentages, National Collegiate Athletic Association tournament playoff appearances, and television appearances. The authors found that the amount of state aid per student was positively associated with athletic variables, particularly basketball success. They showed that athletic success resulted in larger contributions to athletic programs. They also demonstrated spillovers to academic programs, showing that corporate and alumni donations to both current and capital funds positively associated with athletic success.

The recent $100 million pledge to the University of North Dakota by Ralph Engelstad was designated for a new hockey arena. Engelstad, a 1954 graduate and goalie on the university's hockey team, stated in a letter to the governor of North Dakota, "I have a deep appreciation for the education I received at UND. I also cherish my memories of being a member of the UND Fighting Sioux hockey team" (Lively, 1999, p. A53).

Alumni Demographics

Years Since Graduation. Beeler (1982) found that recent graduates were more likely to contribute than were alumni who had graduated many years ago. Brittingham and Pezzullo (1990), Haddad (1986) and Grill (1988) found significant differences based on years since graduation in percentages of donors and amount of donation. In each of these studies, the majority of donors were older alumni and older alumni more often gave the larger gifts.

Marital Status. Marital status has not been found consistently to be related to donations (Beeler, 1982; Haddad, 1986; Oglesby, 1991). The impact of marital status on the amounts that alumni give has been inconclusive in previous research. Grill (1988) found that single individuals are more likely to donate at higher levels than married individuals.

Number of Children. While the number and age of the children of alumni does not appear to affect the decision to donate, Haddad's (1986) research suggests this variable does influence the amounts alumni donate. Collectively, the mixed findings suggest that having children may reduce the disposable

income available for donations, as reflected in decreased giving levels. However, having children does not appear to weaken alumni attachment or commitment to institutions, since alumni with children appear just as likely to donate as alumni who do not have children.

Location. Studies on the relationship between location of residence and donations have been inconclusive. McKee (1975) found alumni who lived either in the same country or state as the institution were more likely to donate and to participate in institution-sponsored events. However, neither Haddad (1986), Korvas (1984), nor Beeler (1982) were able to find a significant relationship between location of residence and donor status.

Household Income. Brittingham and Pezzullo (1990) reported that as income increased, the likelihood of giving also increased. Ogelsby (1991) concluded that as family income rises, so do the percentage of donors in each higher income level. Martin (1993) determined that family income was a discriminating variable for alumni donor status and donor level. Pearson (1996) reported that household income is the most powerful variable in predicting both donor status and donor level. Rosser (1997) also found that household annual income was a primary discriminator for donor status and donor level. Past research has consistently found a significant, positive, and strong relationship between income and the amounts that alumni give.

Research using level of income has been somewhat limited due to the difficulty in obtaining the information. The absence of income measures in

alumni research is frequently the result of a reluctance to ask alumni about income, which grows out of a concern for offending alumni and potential donors by asking questions that are too personal.

Alumni Social Involvement

Returns to Campus. Both Caruthers (1973) and McKee (1975) found differences between donors and non-donors regarding their interest or participation in on-campus events. Caruthers (1973) found that 52% of supporting alumni visit the campus at least yearly, while only 30% of non-supporting alumni visit that frequently. However, Baker (1998) found that visits to campus did not discriminate between donors and non-donors among University of Buffalo alumni.

Participation in Alumni Activities. Rosser (1997) determined that participation in alumni activities was a significant variable in determining whether or not alumni would donate and at what level. Pearson (1996) found that participation in alumni chapter activities discriminated between donors and non-donors.

Those who participate in alumni activities are more likely to donate. Both Rosser (1997) and Baker (1998) found that alumni who were involved in various alumni activities were more likely to be donors and more likely to donate larger amounts.

Alumni Attitudes

Attachment to Alma Mater. Beeler (1982) studied differences between donor and non-donor alumni who graduated between 1960 and 1968 from a private New England university. Beeler found a significant difference between donors and non-donors. According to Beeler, the strongest predictors of alumni support were emotional attachment and current occupation. Emotional attachment was measured by how strongly the individual liked or disliked their school. Beeler found that the more positive the feelings were toward the institution, the more likely the individual was to be a donor.

Spaeth and Greeley (1970) studied 40,000 graduates from 135 colleges and universities. They found that emotional attachment to alma mater was a positive indicator of the likelihood of making a gift. Emotional attachment was also related to a strong desire to send children to the same school.

Additional support for the findings of Beeler and Spaeth and Greeley was shown in Shadoian's (1989) study of graduates of a New England public college. In determining that emotional attachment to the college was a significant predictor of donor status and level of giving, Shadoian found that maintaining contact with faculty and staff, emotional attachment to the college, and enrolling for graduate work were the strongest indicators of whether or not alumni would donate.

Grill (1988) surveyed 2,700 alumni of a public university. Using discriminant analysis, Grill classified 74% of donors and non-donors. The

significant indicators of the differences between the donor and non-donor groups were emotional attachment to the institution, age, time since graduation, and involvement with the institution.

Identification. Identity theory is useful in understanding the individual's relationship with a particular university. Identities are defined as "internalized sets of role expectations, with the person having as many identities as she or he plays roles in distinct sets of social relationships" (Stryker, 1980, p. 46). Understanding the individual's "self" and the identities comprising the "self" is key to understanding the individual's decision process regarding supporting a particular non-profit organization.

Identity theory is based on the assumption that identities, even though they evolve, are relatively stable over time. Identities are thought to be influenced by beliefs, principles, and commitments held by the individual. These influences are psychological aspects of individuals that remain relatively constant throughout their lives (Serpe, 1987). These beliefs, principles, and commitments govern individuals' lives and play a central role in psychological explanations of the intentional behavior of persons.

The commitment one may feel to the pursuit of higher education tends to remain stable over a period of many years or even a lifetime (Greenwood 1994). The feelings that individuals carry with them about their universities tend to reflect their feelings when they leave the university. Alumni may remember

feelings of being "grown up" because they are away from home. They may also remember friendships that are still a part of their lives and influential instructors.

Identity theory is based on the notion that the individual is comprised of multiple selves or identities. Social identity theory extends traditional identity theory by classifying an individual's identities into two groups. One group is comprised of personal identities derived from the individual's abilities and interests (e.g., "I am a scientist" or "I enjoy being a researcher"). The second group is composed of social identities, which include group classifications (e.g., organizational membership, gender, and age cohorts). Individuals classify their social identities according to prototypical characteristics ascribed to the class by its members (Ashforth & Mael, 1989; Mael & Ashforth, 1992). Classifying themselves in this manner enables individuals to "order their social environment and locate themselves and others within it" (Mael & Ashforth 1992, p. 104).

A social identity is "the individual's knowledge that he belongs to certain social groups, together with some emotional and value significance to him of that membership" (Tajfel, 1985). In social identity theory, the "group" is a cognitive entity that is meaningful to the individual. The group does not have to have an immediate physical presence to have a psychological presence for the individual. An individual can establish a social identity as a member of various types of groups, such as sociocultural groups, professional groups, work groups, and volunteer organizations (Tajfel, 1985). Social identity is potentially present for any sort of group in which an individual can claim membership (Tajfel, 1985).

Social identification relies on two sets of psychological processes, namely self-categorization and social comparison. Self-categorization and social comparison help an individual locate him or herself within a social situation, to interpret information in the environment, and to focus his or her attention on the relative status, experience, qualities of his or her group in comparison to other groups.

The degree to which a social identity influences any individual will vary from individual to individual, because social identifications vary in strength. Strength of identification refers to the amount of overlap between a person's social group identity and his or her overall self-concept or the prominence of one identity over other identities in the self-concept (Dutton, Dukerich, & Harquail, 1994). Social identification is strong when it accounts for a larger portion of the way a person defines him or herself. The strength or weakness of the social identification will determine the degree of influence that group membership has on the person's social cognition and behavior. Social identifications also vary in content. Two group members with the same strength of social identification may have different definitions of what it means to be a group member. However, the processes of social identification are independent of the content of any given identity (Tajfel, 1985).

Based on social identity theory, various identities that comprise an individual's "self" strongly influence whether or not an individual enters into a relationship with a group or organization comprised of members sharing a

common identity. Identities associated with a profession, religion, or organization would define the degrees by which the individual would choose to identify with other members of a social network, such as a professional group, religious group, or other organization (Serpe, 1987).

Group membership is an element of social identity theory. Organizational identification is defined as "the perception of belonging to a group with the result that a person identifies with a particular group " (Bhattacharya, Rao, & Glynn, 1995, p. 47). Because of inconsistent definitions of organizational identification, it is sometimes confused with related constructs such as (1) organizational commitment (Allen & Meyer 1990), (2) loyalty, and (3) satisfaction. Identification differs from these constructs in that it is a perceptual/cognitive construct that is not necessarily associated with any specific behaviors or affective states. To identify, the individual need only see him or herself as psychologically intertwined with the group. Behavior and affect are viewed only as potential antecedents and consequences of identity (Mael & Ashforth 1992, p. 104).

Organizational identification is based on social identity theory (Ashforth & Mael, 1989). Organizational identification is the perception of oneness with or belongingness to an organization where an individual defines him or herself in terms of the organization in which he or she is a member.

German (1997) found that identification plays a mediating role in the process of relational exchange. The path from identification to a combined set of

supportive behaviors was significant. German's model accounted for 21% of the variance in donating.

Felt Reciprocity. Felt reciprocity is the sense that the organization not only takes donations of time, money, and other resources, but also gives something in return such as gratitude or recognition for supportive behaviors (Eisenberger, Fasolo, & Davis-LaMastro, 1990).

Bagozzi (1995) discusses the goal of reciprocity as being "at the core of marketing relationships." Bagozzi discusses reciprocity as a form of equity. In a non-profit organization, equity, or reciprocity, may be seen in alumni who donate to their university because of their perception that the university supports them.

Social exchange theory provides a perspective on reciprocity in the sense that individuals "form a general perception concerning the extent to which the organization values their contributions and cares about their well-being" (Eisenberger, Fasolo, & Davis-LaMastro, 1990). The social exchange perspective indicates that employee commitment to an organization reflects their perceptions about the nature of the relationship, which exists between themselves and their employers. Reciprocity from an organization's viewpoint takes the form of material and symbolic rewards given to an employees to recognize their efforts. The stronger the employee's perception of support from the organization, the stronger will be the employee's ties to the organization.

Perceived reciprocity in a university alumni relationship to alma mater may translate into alumni responding more positively to appeals for support by the

degree to which they feel that the organization recognizes or supports them. In alumni giving, reciprocity typically takes the symbolic form of naming of a building in honor of the donor or other recognition.

Satisfaction. Individuals tend to donate resources to organizations that they perceive to have served them well (Bhattacharya et al., 1995; Mael & Ashfoth 1992). Oliver and Swan (1981) observed that "satisfaction in exchange is necessary if ongoing relationships are to be maintained and future relationships are to be facilitated" (p. 21) and indicate that satisfaction is a function of the extent to which a person's expectations of an organization are met or exceeded.

Oglesby (1991) determined that a significant relationship existed between donor status and rating of educational experience in a study of 400 donors and 400 non-donors of Southwest Baptist University. Pearson (1996) also determined that the belief of having received a quality education was a discriminator for donor status, although not donor level. Baker (1998) also found that satisfaction with one's educational experience and alma mater was a discriminator of both donation and the amount of donation. Martin (1993), however, did not find educational experience to be significantly related to donation.

Perceived Need for Financial Support. Alumni are responsive to appeals that specify needs of the institution (Leslie & Ramey, 1988). Alumni are more likely to donate when the perceived need is high (Leslie, Drachman, Ramey &

Conrad, 1983). Martin (1993) determined the perception of the university's need for financial support was a discriminating variable among University of Virginia alumni donors and non-donors as well as low- and high-level donors. Rosser (1997), in a study of Texas A&M alumni who graduated between 1965 and 1989, determined that perceived need by alumni for their support was significant in discriminating between donors and nondonors.

The decision process often begins with alumni awareness of institutional need. A great deal of the literature supports this factor as influential in the donation decision process (Hall, 1996). Successful fund raising depends on "making increasingly informed judgments about causes and effects " in addition to "realizing that donors' decisions can often be significantly influenced based on an understanding of institutional need" (Smith, 1981, p. 62).

Respect for Leaders. An organizational factor studied in previous research as influencing giving is a feeling of respect for the institution's leaders (German, 1997). The influence of this factor may be stronger when the perception is negative than when it is positive. For example, when the leader of the United Way was found to have misused funds, there was a negative reaction in the press and amongst donors (Kotler & Andreasen, 1996).

Organizational Prestige. Prior research has found that people tend to donate resources to organizations that are perceived to be prestigious (Grunig, 1993). Universities such as Harvard and Yale are able to raise large amounts of money from alumni and other individuals since the status of these schools

among institutions of higher education influences people to perceive them favorably. Cameron and Ulrich (1986) found that financial support for organizations has been increased or renewed due to efforts directed toward the transformation of an image from mediocrity to one of excellence or prestige. Mael and Ashforth (1992) found organizational prestige to be significantly correlated with several variables denoting positive outcomes to a non-profit institution, one of which was contributing.

Promoting the Institution to Others. College choice has a profound effect on one's life. Few choices have more far-reaching implications. The college choice involves whether or not to go, where to go, and how to go. Deciding where to go involves a choice of the particular institution whether it is large or small, public or private, religious or nonsectarian (Astin, 1993).

Several studies have found that alumni donors were more likely to recommend the university to others than non-donors. Caruthers (1973, p. 63) found that 50% of donors encouraged their own or others' children to attend Oklahoma State University versus 33% of the alumni non-donors.

Shadoian (1989) found that proportionally more donors than non-donors recommended their alma mater, the University of Connecticut, to prospective students. Conversely, Martin's (1993) study did not determine the variable of recommending the University of Virginia to others as being significant for either donor status or donor level.

History and Characteristics of the University of North Dakota Alumni Association

The UND Alumni Association started with the meeting of the first eight alumni from the institution's first graduating class after graduation ceremonies on June 13, 1889 (Rylance, 1983). After commencement, the group held the first organizational meeting of the UND Alumni Association. Members of this group made plans to stay in contact with each other and to return for visits to the campus.

The Alumni Association remained an informal organization until 1915 when it was incorporated under the laws of the state of North Dakota. The first formal fund-raising appeals to alumni occurred immediately after World War II. Between 1946 and 1954, the Alumni Association launched the first formal fund-raising appeals. Alumni were asked to contribute to the Development Fund with several established goals including a state medical center, a new gymnasium, a student union, better alumni records, and an improved alumni publication (Rylance, 1983). Keeping classmates in contact with each other, as well as giving support to the ongoing growth and development of UND, were the stated goals of the organization in the early years, which are still the goals to the present day.

Alumni Relations

The UND Alumni Association conducts a program of alumni relations, including both on- and off-campus events. Alumni Days, held during the week prior to Memorial Day, is an event for graduates who are celebrating milestone

anniversaries, featuring reunions for the classes of 45, 50, 55, and 60 years prior. Homecoming in October includes 25- and 40-year class reunions from several colleges in the University. Approximately 65% of the alumni of UND live outside of the state of North Dakota, so regular off-campus alumni reunion events are also conducted.

The Alumni Association and Foundation strategy involves contact and cultivation of relationships. Without accurate names and addresses, contact with alumni would be impossible. Without proper records and acknowledgment of gifts, the fund raising programs would soon fail. Without an ever-broadening base of personal contact, the strength and vitality of the Alumni Association and its impact for the benefit of the University of North Dakota would diminish quickly and dramatically. (University of North Dakota Alumni Foundation)

The Alumni Review is the major publication for the Alumni Association. This bi-monthly newspaper includes news notes about classmates, feature articles about alumni, and news from the campus. The UND Alumni Association relies on personal letters and phone contacts for most of its contacts. Major gifts for the benefit of the University of North Dakota have resulted from years of relationship building. For example, many years ago, a staff member traced Chester Fritz and put him on the mailing list. Fritz received the Alumni Review and other news about his alma mater. He then received an invitation and attended the UND alumni reunion in New York. Later, he returned to the UND

campus and served as a member of the Board of Directors of the Alumni Association.

UND Foundation

The UND Foundation is the umbrella organization for alumni and private support for the entire university. The University of North Dakota Foundation, incorporated in 1978, replaced the Alumni Association Development Fund. Between 1978 and 1996, the assets of the Foundation grew from less than $1 million to $55 million.

The relationship between the Alumni Association and the Foundation is unique. They are two separate non-profit corporations. They have the same Boards of Directors and the same executive vice president, but different board presidents and vice presidents. Earl Strinden has been the Executive Vice President since 1974

The Foundation has no employees, because the Alumni Association provides the staff necessary to conduct the Foundation fund-raising programs. The Foundation, in turn, supports the operations of the Alumni Association. The utilization and maintenance of records, the ongoing cultivation through on- and off-campus events, the publication of the Alumni Review, and a massive personal-contact effort are all part of a unified plan for alumni relations and fund raising.

Fund Raising - UND Foundation

The building of long-standing friendships is the main goal of the UND Foundation. In contrast to many alumni associations, the UND Alumni Association is a non-dues-paying organization. The Alumni Association currently maintains over 82,000 active records in its database.

The annual sustaining drive, a broad fund-raising appeal, primarily uses direct mail supplemented by phone contact. The annual campaign relies on volunteer class chairpersons with individual class goals. Specialized contacts are made by representatives of various affinity groups within the total alumni membership, such as the graduates of the medical and law schools.

The fund-raising structure can be conceived of as a pyramid. The bottom represents the total population of the alumni and friends and, thus, the total number of potential donors. The levels of the pyramid represent those who contribute to the annual drive. Next are the members of the various giving clubs, and at the top are the major prospects.

Contributors may restrict their contributions for the benefit and support of a specific college, department, scholarship, or other priority need. Donors may also make their contributions "unrestricted" to be used for any need identified by the UND Foundation Board of Directors. All contributors are listed on the Honor Roll of Contributors, which is printed annually as a major part of the UND Foundation Annual Report.

The UND Foundation Giving Clubs

Giving club members are recognized in the UND Foundation Annual Report. Membership in giving clubs can be attained through pledges and deferred gifts, and also, through a donor's direct or immediate contribution. The UND Foundation Giving Clubs consist of the following levels:

"83" Society - $1,000 over 4 years

Old Main Society - $5,000 over 10 years

Presidents Club - $10,000 over 10 years

Presidents Cabinet - $25,000 over 10 years

Benefactors - $100,000

William Budge Society - $1,000,000

The UND Foundation's planned and deferred giving programs are actively solicited through specialized mailings, the Alumni Review, and by personal visitation. The UND Foundation also utilizes a quarterly publication called Financial Planner, which is mailed to individuals identified as deferred giving prospects or major gift prospects. Each issue of the Financial Planner highlights a special topic and solicits a request for a more detailed booklet. All of those who request booklets receive a follow-up phone call from a member of the staff. This entire effort is important for identifying major deferred gift prospects and for educating the alumni membership about tax-wise charitable giving, which benefits both the university and the donor.

The UND Foundation serves as trustee of charitable trusts and administers nearly 500 named endowments. The minimum level to establish an endowment is $10,000. Annual allocations from the UND Foundation total several million dollars and support scholarships, faculty enhancement, departmental and college development, and other priority needs at UND.

Clubs

The UND National Alumni Leadership Council (NALC), a nationwide network of alumni, was founded in 1990 to offer assistance and creative solutions to the many challenges facing the university. The council numbers over 1,300 individuals who provide support of many kinds including ideas, suggestions, encouragement, assistance in securing grants and contracts, assistance in recruiting prospective students, working with faculty and students on campus and in their own work settings, securing gifts-in-kind of equipment, attracting research funds, and providing support and leadership.

The University of North Dakota Athletic program is of interest to many alumni. In 1996, the Fighting Sioux Club was founded as the fund-raising arm of the University of North Dakota Athletic Department with more than 800 members from the region and across the nation. This group consolidates the support efforts of the Sioux Boosters, the UND Letterwinner's Association, the Athletic Department and the UND Foundation.

A Short History of Major UND Donors

A variety of planned giving arrangements is available through the University of North Dakota Foundation. Planned giving options include named endowments, gift annuities, life estates, charitable remainder unitrusts, charitable lead trusts, and testamentary gifts.

Ralph Engelstad's $100 million gift to UND announced in 1998, is the largest gift in the university's history. Besides Engelstad, UND's best-known benefactor is Buxton, North Dakota native, Chester Fritz, who made his fortune in investment banking and precious metal trading. Fritz spread $8 million in gifts to UND over 30 years. Fritz gave UND $1 million in 1961 to construct the Chester Fritz Library and another $1 million in 1972 toward construction of the Chester Fritz Auditorium.

In 1971, Bismarck, North Dakota, utilities developer Edmond A. Hughes left UND nearly $4 million, $1 million of which was used to construct the Hughes Fine Arts Center. Before Engelstad's announcement, Hughe's endowment was the largest single gift to UND. W. Kenneth Hyslop's $5.2 million gift of Red River Valley farmland to UND in 1980 was the largest gift prior to Engelstad.

Chester Fritz attended the University of North Dakota for just two years between 1908 and 1910 (Fritz & Rylance, 1982). Yet, between 1950 and 1969, Fritz donated more than $2.25 million to the University. At that time, his gift was the largest amount ever given by a single alumnus of the University. He also

donated to the University of Washington, where he had attended subsequent to the University of North Dakota.

Earl Strinden, Executive Vice President of the UND Alumni Association, UND President Emeritus Thomas Clifford, and former UND All-America hockey player Reg Morelli visited with Engelstad during the eight weeks prior to the announcement to work out gift details. Engelstad's estimated wealth was $440 million in 1994.

Ralph Engelstad, a 1954 UND graduate from Thief River Falls, Minnesota, who was a hockey team goalie, announced on Thursday, December 17, 1998, that he would give the University of North Dakota $100 million, one of the largest private gifts to a public or private university in the United States in the last 30 years. Engelstad indicated that $40 million to $50 million would be designated for a new hockey arena. The remaining $50 million to $60 million has not been specifically designated.

In its December 11, 1998, issue, The Chronicle of Higher Education listed major private gifts and grants to higher education since 1967. Engelstad's gift would rank in the top 10 individual gifts given to a U.S. college or university since 1967. The top gift listed from an individual source is a 1998 gift of up to $240 million from the estate of Larry L. Hillblom to the University of California at San Francisco.

Aside from the University of North Dakota, the University of Nebraska, the University of Pennsylvania, and Louisiana State University are the only state

institutions to receive gifts of $100 million or more. New York University received an endowment in 1994 worth an estimated $500 million.

Colleges are soliciting and receiving mega-gifts in unparalleled measure. The large gifts have forced universities to reconsider smaller gifts. Yet, smaller gifts are still the "seed corn" for future gifts as donors can graduate from small gifts to larger ones. There is a danger of relying on mega-gifts, drawing too much attention to them and forgetting about the hard-core group of supporters that need to be nurtured (Pulley, 2000).

CHAPTER III

METHODS

This chapter includes a description of the sample frame and respondent characteristics, an overview of the alumni survey used to measure the constructs identified, a summary of the variables examined, the data collection procedures employed, and a brief description of and justification for the statistical techniques used in the analysis. Distinctions between this study and prior studies are also presented.

Sample Frame Characteristics

Alumni of the University of North Dakota provided the sample frame for this study. Included in this study were alumni who were members of graduating classes between 1945 and 1995, thus spanning 50 years. The total number of graduates in each of those years was obtained from the University of North Dakota Registrar. Proportional stratified sampling by year was used to insure adequate representation from all years. This technique is "a process in which certain subgroups or strata are selected for the sample in the same proportion as they exist in the population" (Fraenkel & Wallen, 1993, p. 83).

The sample consisted of 2,500 alumni selected from the UND Alumni Association database. Within each year of graduation sample size was determined by the proportion of graduates in that year to the total number of

graduates between 1945 and 1995. The sample within each year was then drawn randomly according to the same proportions in which they were found in the population. The advantage of stratified random sampling is that "it increases the likelihood of representativeness and ensures that any key characteristic of individuals in the population are included in the same proportions in the sample" (Fraenkel & Wallen, 1993, p. 84).

Because university and alumni association leaders seek to continue building relationships with alumni, it is useful to understand those alumni based on factors that are related to their supportive behaviors. Increasing the understanding of alumni supportive behaviors provides a basis for enhancing communication and marketing efforts with alumni. Alumni are an important resource for the university both in terms of financial support and testimonial support of the institution via promoting it to others and attending university and alumni functions. Fray (1981) noted that "universities probably know little about their alumni. They presume opinions, beliefs, and preferences, yet they almost never conduct scientific research into the matter" (p. 46).

Although this study utilizes University of North Dakota alumni as the sample frame, results of this research may be generalizable to other university alumni, particularly those institutions whose alumni characteristics closely match those of the University of North Dakota.

Measures of Constructs

This study utilizes both observed measures and unobserved constructs. These were measured in a variety of ways. Demographic information was extracted from the University of North Dakota Alumni Association database. A questionnaire was developed using items that originated from existing scales and prior research on donating behavior.

The survey instrument included self-reported measures of alumni social involvement. These were operationalized by the degree to which alumni indicated that they attend alumni events and/or return to the University of North Dakota. Each of the two items were measured by a scale ranging from 0 to more than 10 times.

Several other constructs used in this research were measured using self-reported measures. Identification, felt reciprocity, satisfaction, perception of financial need, promoting the institution to others, organizational prestige, respect for the university's leaders, and respect for the alumni association's leaders are not directly observable; therefore, individual items on the questionnaire were chosen to reflect the unobservable constructs. These items were measured on a 1 to 7 scale, where 1 represented strongly disagree and 7 represented strongly agree. Factor analysis, a form of latent variable analysis, was utilized to analyze the items from the survey and to produce composite measures of the unobservable feelings, attitudes, and behaviors. The results are presented In Chapter 4.

Measures

The scales used to measure the constructs employed in this study (identification, felt reciprocity, satisfaction, perception of financial need, respect for university leaders, respect for alumni leaders, organizational prestige, and promoting the institution to others) were developed from existing literature. The following section provides a discussion of the measures used in the study.

Identification

As previously discussed in Chapter 2, organizational identification is defined as "the perception of belonging to a group with the result that a person identifies with that group (i.e., I am a member)" (Bhattacharya, Rao, & Glynn 1995, p. 47). Because of inconsistent definitions of organizational identification, scholars have often confused organizational identification with related constructs such as (1) organizational commitment (Allen & Meyer 1990), (2) loyalty, and (3) satisfaction. Identification differs from these constructs in that it is a perceptual or cognitive construct that is not necessarily associated with any specific behaviors or affective states. In order to identify with an organization, the individual need only see himself or herself as "psychologically intertwined" in the fate of the group. Behavior and affect are viewed only as potential antecedents and consequences (Mael & Ashforth, 1992, p. 104).

Organizational identification is defined here based on social identity theory (Ashforth & Mael, 1989). Organizational identification is the perception of oneness with or belonginess to an organization where individuals define themselves in terms of the organization in which they are members. This notion

is extended here to populations of alumni. Since alumni constitute a critical source of support, alumni identification is important. The degree of identification was determined using the following questions:

Being a University of North Dakota graduate. . .

IDN1. is an important part of who I am.

IDN2. is something about which I have no clear feelings.

IDN3. means more to me than just having a degree.

IDN4. is something I rarely think about.

IDN5. For me, if someone praises UND, it is the same as a personal compliment.

IDN6. I am interested in what others think about UND.

IDN7. When I talk about UND, I usually say "we" rather than "they."

IDN8. When someone criticizes UND, it feels like a personal insult.

IDN9. UND's successes are my successes.

Felt Reciprocity

Felt reciprocity was measured with six items adapted from the "Survey of Perceived Organizational Support" (Eisenberger, et al., 1990) and tested by German (1997). These measure the degree to which an individual feels that an institution takes actions to assure his or her well-being and contributions.

The people at the University of North Dakota. . .

FRY1. value my contribution to its well-being.

FRY2. appreciate any extra effort from me.

FRY3. listen to any complaints I might have concerning the university.

FRY4. would notice if I did something that benefited the university.

FRY5. show concern for me.

FRY6. take pride in my accomplishments.

Satisfaction

Satisfaction with the organization was measured with an adaptation of a six-item scale tested by Westbrook and Oliver (1981), who reported reliability estimates ranging from .91 to .95 in two samples. Historically, postpurchase satisfaction has been conceptualized as a function of the extent to which product experience confirms or disconfirms product performance expectations (Tybout & Artz, 1994).

There are dynamic effects of postpurchase satisfaction. Bolton and Drew (1991) observe that satisfaction affects judgments of service quality and value. Satisfaction is a multidimensional process that unfolds over time. More generally, Tybout and Artz (1994) noted that the consumer choices affect consumers' inferences about the importance of attributes experienced both during and following the choice process. All of these notions were embodied in the following stimulus questions:

I am satisfied with. . .

SAT1. the education I received while a student at UND

SAT2. the facilities at UND when I was a student.

SAT3. how I was treated as a student at UND.

SAT4. how UND prepared me for a career.

SAT5. my choice to attend UND.

SAT6. the UND Alumni Association.

SAT7. the University of North Dakota in general.

Perception of the University Being in Financial Need

A three-item scale was adapted from previous research. The following items were drawn from a study by German (1997):

FND1. UND presently needs strong financial support from its alumni.

FND2. UND's need for financial support from its alumni will be even greater in the future.

FND3. State universities need the financial support of their alumni more than private universities.

Respect for Leaders

Six items in the questionnaire addressed leadership. Those items were subdivided into groups of three items each for university leadership, in general and for UND Alumni Association Leadership. The first set of leadership questions referred to respect for UND's leaders as follows:

RUL4. The administration of UND, on the whole, is good.

RUL10. I have positive feelings about UND's administration.

RUL14. Those leading UND are not doing a good job.

The second set of questions specifically referred to respect for UND Alumni Association Leaders. The distinction between the two types of leadership was developed, since alumni have most direct experience with the Alumni Association. Those questions are as follows:

RAL5. I think the people leading the UND Alumni Association are fulfilling their responsibilities well.

RAL16 I think that the leaders of the UND Alumni Association are doing a good job.

RAL17. I have positive feelings about the administration of the UND Alumni Association.

Promoting the Institution to Others

Mael and Ashforth (1992) alluded to the concept of promoting the institution to others by measuring "willingness to advise son to attend" and "willingness to advise others to attend" as two dependent variables in their study of alumni of an all-boys school. German (1997) measured promoting and recruiting of students by alumni. From this prior research the following five-item scale was developed to measure the degree to which alumni promote the institution to others:

PRO6. I would speak favorably about UND if asked.

PRO8. When I have the opportunity, I advise the parents of those making a college choice that they should consider UND.

PRO12. I encourage those who are considering attending college to go to UND.

PRO15. When I meet high school students and the topic arises, I usually advise them to attend UND.

PRO18. In conversations with friends and acquaintances, I bring up UND in a positive way.

Organizational Prestige

Organizational Prestige was measured with five items adapted from a scale developed by Mael and Ashforth (1992). This scale has demonstrated good psychometric properties in previous studies. In the the Bhattacharya (1995) study, the perceived Cronbach's alpha for the perceived organizational prestige construct was .87.

OP9. People I know think highly of UND.

OP11. It is prestigious to be an alumnus of UND.

OP13. People seeking to advance their careers should downplay their association with UND.

OP7. People I know look down on UND.

OP19. Most people are proud when their children attend UND.

Alumni Social Involvement

Alumni social involvement included number of visits back to campus since graduation and number of campus activities as follows:

Since graduation, how many times have you . . .

E1. returned to the University of North Dakota campus for events such as Homecoming, a class reunion, or Alumni Days.

E2. participated in an off-campus alumni activity such as an alumni meeting, recruiting event, or volunteer work.

Items from the UND Alumni Association database can be divided into student and alumni characteristics. Student characteristics include degree earned, year degree earned, hometown in North Dakota or outside the region and scholarship recipient. Participation in student activities included several variables, such as membership in a fraternity or sorority, letter winner, and number of student organizations. Alumni characteristics from the database include individual income, household income, years since graduation, current residence in North Dakota or out of state, and individual giving totals. Gender is both a student and alumni characteristic.

Pilot Test

A convenience sample of 20 University of North Dakota alumni was given a draft of the survey instrument. The pilot test was conducted to ensure that the survey was a reflection of the research questions, to modify the items if necessary, and to increase the degree of reliability. The alumni who were asked to complete the survey were also asked to comment on the wording and understanding of the questions and to note any questions that did not make sense or were not clear. Based on the feedback received from the pretest, the questionnaire was revised. The alumni feedback from the pilot test was incorporated into the final survey instrument.

Method and Results of Data Collection

The questionnaire was mailed to 2,500 University of North Dakota alumni whose names were randomly drawn from the UND Alumni Association database of alumni who graduated between the years 1945 and 1995. After the pilot test,

alumni association officials reviewed (see Appendix A) both the cover letter (see Appendix B) and questionnaire (see Appendix C). The questionnaire was sent to the sample on June 16, 1999.

The questionnaire was sent from this researcher accompanied by a cover letter, assuring the confidentiality of the information provided by the respondent and emphasizing the significance of their contribution to understanding and improving relationships with alumni.

Responses were returned in a postage-paid envelope addressed to a general post-office box at the University of North Dakota. Each questionnaire was coded in the upper right-hand corner of the second page to allow matching of the questionnaire to the database information, though no respondents are identifiable by name.

Respondent Characteristics

Of the 2,500 questionnaires mailed, 1,045 were returned, representing a 41.7% response rate. Of those 1,045 returned questionnaires, 1,043 were usable. Based on prior research, a 15% to 25% return was anticipated or 375 to 500 surveys.

In the original sample of the 2,500, 41.6% were donors, while in the returned sample of 1,045, 50.2% were donors, indicating that donors represent a higher proportion of those who chose to return the questionnaire. A computer code on the top of the questionnaire title matched each alumnus/alumnae to his/her database record, but the names and addresses were not available to this researcher.

Table 1 provides a breakdown of the number of surveys mailed to each graduating class. The overall response rate was 41.7%. Response rates for each graduating class are offered in Table 1.

Table 1.

Number of Surveys Returned by Year of Graduation

Year	Sent	Returned	Percent	Year	Sent	Returned	Percent
1945	3	2	66.7%	1971	88	31	35.2%
1946	6	2	33.3%	1972	79	26	32.9%
1947	11	7	63.6%	1973	50	69	27.5%
1948	13	6	46.2%	1974	64	31	48.4%
1949	10	8	80.0%	1975	63	28	44.4%
1950	18	8	44.4%	1976	70	32	45.7%
1951	26	14	53.8%	1977	73	40	54.8%
1952	20	14	70.0%	1978	56	21	37.5%
1953	9	2	22.2%	1979	78	21	26.9%
1954	7	6	85.7%	1980	81	31	38.3%
1955	13	7	53.8%	1981	93	37	39.8%
1956	24	13	54.2%	1982	64	26	40.6%
1957	19	13	68.4%	1983	72	32	44.4%
1958	28	12	42.9%	1984	84	30	35.7%
1959	26	10	38.5%	1985	76	25	32.9%
1960	32	12	37.5%	1986	71	31	43.7%
1961	30	13	43.3%	1987	69	22	31.9%
1962	38	23	60.5%	1988	86	27	31.4%
1963	32	15	46.9%	1989	61	32	52.5%
1964	39	17	43.6%	1990	57	24	42.1%
1965	36	20	55.6%	1991	60	24	40.0%
1966	56	29	51.8%	1992	51	25	49.0%
1967	48	19	39.6%	1993	81	27	33.3%
1968	45	23	51.1%	1994	79	31	39.2%
1969	48	24	50.0%	1995	64	21	32.8%
1970	74	30	40.5%	Total	2,500	1,043	41.7%

In the initial sample of 2,500, 61.3% were male, while 38.7% were female. In the respondent sample, males represented 57.5%, while females represented 42.5%. Females comprise a greater proportion of the respondent sample than

the mailing sample. A chi-square test comparing individual incomes of respondents versus non-respondents indicated that there were no significant differences in the incomes of these two groups.

The questionnaires were coded with an identification number that was matched to an identification number to correspond with database records. The identification numbers were generated, especially for this research project, so they did not provide any access to the identity of the alumni.

By matching identification numbers the two data sets were concantenated. Selected items from the alumni database were added. They are defined as follows:

Gender. Male or female (the variable used is represented as 0 = male and 1 = female).

Marital status. The original variable marital status included the following categories: married, widowed, single, divorced or separated. This variable was recoded as a binary variable, where 0 = not married and 1 = married.

Number of children. Children of alumni stated as a specific number rather than a category or range.

Individual income. Provided in the following ranges: up to $20,000; $20,000 to $30,000; $30,000 to $50,000; $50,000 to $75,000; $75,000 to $100,000; $100,000 to $150,000; over $150,000.

Homestate. State indicated in the student record associated with their hometown. This variable was recoded to represent North Dakota or residence outside of North Dakota, i.e. 0 = other and 1 = North Dakota.

State. State of current residence. All 50 states and international locations were represented in the sample. This variable was recoded to represent North Dakota or residence outside of North Dakota, i.e. 0 = other and 1 = North Dakota.

Years since graduation. This variable was computed by subtracting the year of graduation from the year 1999.

Fraternity/sorority. The name of the fraternity or sorority that the alumnus was a member of was recoded to a binary variable representing 0 = not a member of fraternity /sorority and 1 = member of fraternity/sorority.

Scholarship recipient. Scholarship recipients were identified as general, presidential, or overseas scholarship recipients. This variable was recoded to a binary variable indicating that the alumnus did not received a scholarship = 0 or did receive a scholarship = 1.

Letterwinner. Represents those alumni who were student athletes receiving letters. This variable was represented as a binary variable indicating absence of a letter = 0 or presence of a letter = 1.

Campus organizations. As a measure of involvement, campus organizations indicates the number of student organization that the alumnus belonged to as a student. Number of campus organizations ranges from 0 to 5.

Analysis of Research Questions

Canonical analysis is the extension of multiple regression to a situation with more than one dependent variable. In situations involving multiple dependent and independent variables, "canonical correlation is the most appropriate and powerful technique" (Hair, Anderson, & Black, 1995). Many

previous studies have only addressed financial support as the dependent variable. This study, in following a more recent research stream (German, 1997; Mael & Ashforth, 1992), addresses the broad concept of institutional support, including both financial support in the form of individual giving to the institution and promoting the institution to others, which supports the recruitment of new students into the university. Predicting these two variables associated with institutional support simultaneously is possible through canonical correlation.

Canonical correlation analysis is a dependence method. Like regression, the objective of canonical correlation is to determine the strength of the relationship between two sets of variables, both independent and dependent. It is also similar to discriminant analysis by determining independent dimensions, like discriminant functions, for each variable set that generates the maximum correlation between the dimensions. As a result, canonical correlation seeks the optimal structure for each variable set that maximizes the relationship between independent and dependent variable sets (Hair et al., 1995).

Canonical correlation measures the strength of the overall relationship between the linear composites of the predictor and criterion sets of variables. An analyst may apply canonical correlation to a set of variables, select those variables that appear to be significantly related, and run subsequent canonical correlations and individual regressions with these remaining variables (Hair et al., 1995).

Canonical correlation generates pairs of linear combinations, one from each set. The first pair of canonical variates maximizes the correlation between

a linear combination of one set and a linear combination of another set. Additional pairs of canonical variables, uncorrelated with the first, may then be extracted (Tabachnick & Fidell, 1983).

Hair et al. (1995) recommends three criteria for interpreting the canonical variables. These criteria are: the level of statistical significance of the function, the magnitude of the canonical correlation, and the redundancy measure for the percentage of variance accounted for by the two data sets.

The .05 level is generally accepted for considering a correlation coefficient statistically significant. Canonical cross-loadings are the preferred approach in analyzing canonical correlations. Cross-loadings involve correlating each of the original observed dependent variables directly with the independent canonical variate. Correlations of 0.3 or higher are usually considered part of a pattern (Tabachnick et al., 1983, p. 159). Redundancy addresses the issue that even though canonical variates have a strong correlation, the variables may not extract significant portions of variance from their respecive sets of variables. A redundancy index computes the multiple correlation coefficient between the total predictor set and averages these squared coefficients.

Multiple regression and discriminant analysis may be treated as special cases of canonical correlation analysis. Canonical correlation is useful in seeking an explanation for a set of dependent variables by a set of independent variable. With a multidimensional idea like institutional support, it is useful to look at the dependent variables, individual giving and promoting the institution to others as a set. Using conventional multiple regression techniques, the usual

approach would be to regress each dependent variable. Canonical analysis helps to investigate the possibility that combinations of dependent variables relate to combinations of independent variables.

Logistic regression and multiple regression analyses were used to create the predictive models. Logistic regression was chosen, because it is a form of statistical modeling appropriate for categorical outcome variables, such as donor status. The explanatory variables logistic regression can be either categorical or continuous. An advantage of logistic regression is that potential model interpretation can be conducted using odds ratios, which are functions of the model parameters (Stokes, Davis & Koch, 1995).

Multiple regression analysis was chosen to study the continuous dependent variables, promoting and individual giving. Transformations of the data were utilized to handle violations of the model assumptions. Also, categorical independent variables were transformed into binary variables.

Analytical Assumptions

Several analytical techniques were utilized in this study including factor analysis, canonical correlation, logistical regression, and linear regression. The following assumptions were considered: independent and random samples, normality of error terms, linear relationships and equal variances or homogeneity of variance/covariance matrices. Both SPSS and SAS provided diganostics for examination of the assumptions.

Independent and random samples are ensured by the design and execution of the research. Multivariate normality of error terms was assessed with SPSS.

Variable Manipulations

The variable, individual giving total, in its original form was highly negatively skewed. First, for the 49.8% of the sample who had never donated money, the individual giving total was zero. Of those who donated, a significant number fell under $1,000. The range of giving was between $5.00 and $3,465,839.00. In the case of alumni donations, the outliers are interesting cases and so they were retained in the study for their potential explanatory value. In order to achieve a normally distributed dependent variable, two transformations of the variable, individual giving total, were performed using a natural logarithmic transformation.

CHAPTER IV

RELIABILITY ANALYSIS

Several constructs have been related to alumni giving in past research. Subscales developed in past studies have predominately been used with a single institution. Factor analysis was performed on the data set in this study to operationalize the constructs related to alumni giving. The reliabilities of the scales were assessed by using Cronbach's coeffiicient alpha.

Factor Analysis

Factor analysis was conducted on the items representing the independent variables in the study to reduce the number of individual items to factors. Based on replicating scales used in previous research, similar results were expected to emerge. The scales used in previous research were: identification, felt reciprocity, satisfaction, perception of financial need, and organizational prestige. Respect for leaders, a scale from previous research, was adapted for this study as two measures of leadership. The first scale was directed towards respect for UND Alumni Leaders, while the second scale was directed toward overall respect for university leaders. Direct oblimin rotation with alpha factoring was used in this analysis. Since it was initially felt that the factors were related based on previous research, an oblique rotation procedure was employed.

In alpha factoring, it is assumed that the items being factored represent a sample. Kim and Mueller (1978) stated that the factor loadings obtained by alpha factoring are determined in such a way that the common factors that are extracted have maximum correlation with corresponding common factors assumed to exist in the universe of items. The number of factors retained is determined by the criterion that the associated eigenvalues should be greater than one. In this study, eight factors met this criterion. Alpha factoring estimates communalities by maximizing the alpha reliability of the factors. The factors were extracted using alpha factoring and rotated using oblique direct oblimin rotation (Delta = 0). This solution extracted eight factors which explain 69.5% of the total variance. The resulting pattern matrix is displayed in Table 2.

Harris and Harris (1971) recommend that factors should be retained only if those factors remain consistent across various procedures, such as different methods of estimating communalities and different rotations. Factor structures that show such consistency are referred to as invariant. The eight-factor, oblimin solution was obtained using both principal axis factoring and alpha factoring. These methods both converged on similar solutions.

Most of the items loaded on the hypothesized constructs from pre-existing research. One item on the satisfaction scale, SAT6, did not load as highly on the factor that included items related to the general university experience, rather it loaded on the factor associated related to respect for UND Alumni Association.

Table 2

Pattern Matrix

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
FRY2	86726	-.01269	09469	.00724	05926	.04844	-.00435	-.03689
FRY6	.80169	.03659	-.12989	.03156	-.02405	-.06206	-.03819	-.04139
FRY1	80002	-.02162	.05225	-.00551	.06609	.05233	-.00698	-.00966
FRY5	.78554	.02118	-.11778	.02657	-.05706	-.02184	-.05191	.00070
FRY3	75162	-.01799	-.05061	-.01874	.03053	-.06991	.00732	.09942
FRY4	.63716	.06164	.04100	-.02982	.00191	.02676	-.08064	-.00077
SAT1	-.01730	.87172	01947	-.00759	.01491	.00274	.08763	.00858
SAT3	.06825	80435	.02479	-.08176	.06414	-.03601	.03510	.08008
SAT5	-.06763	.79703	.01094	.10549	-.02141	.07096	-.05104	-.10443
SAT4	.06329	.76255	.02630	.00399	.01646	-.00351	.03757	.01830
SAT2	-.05633	.74010	-.03148	.00724	-.01153	-.04589	-.04087	.01109
SAT7	.07711	.66560	-.06335	-.00957	-.02411	.09906	-.10349	.04795
IDN8	.04819	.06363	-.57833	.00352	.01022	.14487	-.01344	.05604
IDN5	.15168	.03670	-.57604	.07061	.03533	.17167	.03632	.09447
IDN9	.20496	.01711	-.56049	.05525	.07390	.19142	.04163	.04135
IDN7	19214	06820	-.42061	11875	-.03687	.23511	.09055	-.06553
IDN6	.13779	.16617	-.35517	11047	.03064	15999	-.08079	-.03045
OPE9	.01320	.04281	-.14063	.66908	.03314	-.02732	-.16114	-.08225
OPE11	-.00877	.04217	-.30591	.49044	.04956	.08439	-.15101	.03422
OPE13	.06547	.05097	.18259	.45750	.03981	.13403	.16509	.28687
OPE19	-.00474	.16392	-.13504	.44054	.12343	.02068	-.19527	-.06615
OPE7	.06324	.06635	.16897	.42010	-.04121	.04413	.07249	.21003
FND2	-.00510	.04222	.06857	.03390	.92000	.02819	.00716	-.04069
FND1	.07294	.02911	.09291	.00596	.81701	.05592	-.04016	-.05470
FND3	-.00369	-.02124	-.19120	-.01463	.26513	-.02858	-.01893	.08625
IDN2	-.02863	-.01559	.04780	-.06093	.01675	.86786	-.04194	.01367
IDN 4	-.03900	-.01333	-.03206	-.01203	.05391	.69491	-.00690	.03334
IDN 1	.02197	.07277	-.11679	.06166	-.03494	.68660	-.06891	-.04080
IDN 3	.08995	.08048	-.14385	.06160	.02083	.56429	.00039	-.03234
RAL16	.08827	-.00771	.09231	.05844	.03447	.09373	-.80930	.08200
RAL17	.11115	-.01119	.02660	.08963	.05455	.05789	-.73629	.09365
RAL5	.09460	.01843	.05200	.00809	.12438	.02697	-.65363	.16306
SAT6	.27663	.19750	.02784	-.01959	.01295	.12863	-.43000	-.01398
RUL4	.03704	.07759	-.18688	-.05684	.08581	-.05103	-.17793	.69009
RUL14	.03430	.06498	.06255	.09824	-.04141	.08431	-.08638	.58253
RUL10	.03177	.11745	-.15144	.07762	.02914	.00251	-.27359	.48573

Based on the wording of this item, "satisfaction with the UND Alumni Association," it is understandable that this item is likely more related to respect for alumni leaders than general satisfaction with the university experience. Hence this item was dropped from the satisfaction scale.

An outcome of the factor analysis that was not anticipated was the loading the items from the identification scale on two distinct factors. The items loading highest on the first factor are the following items:

1. Being a UND graduate is an important part of who I am.
2. Being a UND graduate is something about which I have no clear feelings. (reverse-scored)
3. Being a UND graduate means more to me than just having a degree.
4. Being a UND graduate is something that I rarely think about. (reverse-scored)

Items loading on the second factor included the following.

5. For me, if someone praises UND, it is the same as a personal compliment.
6. I am interested in what others think about UND.
7. When I talk about UND, I usually say "we" rather than "they."
8. When someone criticizes UND, it feels like a personal insult.
9. UND's successes are my successes.

The first four items appear to discuss identification with the university in a personal context, while the second set of items refer to identification in more of a social context. Based on this result, two subscales, self identification and social

identification, were analyzed separately in the study. In addition, the scale identification including all the items was retained for further analysis.

Reliability Analysis

The purpose of reliability analysis is to measure the reliability of hypothesized scales. Cronbach's coefficient alpha was used to determine the reliability of the scales and to provide a measure of internal consistency. Coefficient alpha was computed for each scale as well as for all the items associated with the independent variables. In addition, the mean, standard deviation, and index of discrimination (item correlations) were computed for each item within each subscale.

For estimates of reliability, SPSS produces both an unstandardized Cronbach's alpha and a standardized alpha. Both were considered for this survey. Standardized alphas utilize standard scores ($Y = 0$, $s = 1$); if variances are similar across items, the two alphas will be approximately the same. Unstandardized alphas reflect actual item variances so if variances are widely dissimilar, the two alphas can be quite different. Cronbach's alpha is used as a measure of the internal consistency of the instrument and is based on the average correlation among the items on a scale. Reliability tends to increase with longer scales and heterogeneous groups. A Cronbach's alpha, expressed as a correlation coefficient of .70 or higher is desired for judging a scale reliable. The results are noted in Table 3.

Table 3

Initial Scales

Scale	Number of items	Initial alpha	Standardized alpha
Identification	9	.8908	.8936
Felt reciprocity	5	.9162	.9163
Satisfaction	7	.9035	.9068
Perception of financial need	3	.6996	.7151
Respect for university leaders	3	.8171	.8243
Respect for alumni leaders	3	.9275	.9277
Organizational prestige	5	.7671	.7714
Promoting the institution	5	.8832	.8810

Scale Formation

Based on the results of the factor analysis and reliability analysis, two items were dropped from the survey. First, SAT6 "Satisfaction with the UND Alumni Association" was dropped from the satisfaction scale as it loaded on the factor associated with respect for alumni leadership. Second, FND3 "State universities need the financial support of their alumni more than private universities" was deleted as it allowed the alpha to increase from .6996 to .8885. This item was stated more broadly than the other items, which specifically referred to financial need at UND, rather than state universities in general.

A reliability analysis was conducted for each sub-scale. The reliability estimate is an indicator of the instrument's stability. If it is reliable, the results should be consistent with repeated administrations with the same or similar

groups of people, assuming the conditions that are being assessed have not changed. The final, revised scales are presented in Table 4.

Table 4

Revised Scales

Scale	Number of items	Initial alpha	Standardized alpha	Final alpha
Identification	9	.8908	.8936	.8936
a) Self identification	4	.8500	.8535	.8535
b) Social identification	5	.8584	.8617	.8617
Felt reciprocity	5	.9162	.9163	.9163
Satisfaction	6	.9035	.9068	.9251
Perception of financial need	2	.6996	.7151	.8885
Respect for university leaders	3	.8171	.8243	.8243
Respect for alumni leaders	3	.9275	.9277	.9277
Organizational prestige	5	.7671	.7714	.7714
Promoting the institution	5	.8832	.8810	.8810

CHAPTER V

RESULTS

The purpose of this chapter is to investigate the relationship between student demographics, student academic involvement, student social involvement, alumni demographics, alumni social involvement, and alumni attitudes with indicators of support for alma mater. Utilizing 22 independent variables, the level of giving and promoting were predicted.

Initially, a canonical approach was used to analyze the relationship between the set of independent variables and the dependent variables. SAS was utilized for the canonical analysis. Based on the canonical results, logistic regression analysis and stepwise linear regression, equations were developed from the results of these analyses.

The conceptual model utilized for this study is portrayed in Figure 1, grouping the independent variables into sets in chronological order. One critical milestone is the point of graduation when student status transforms to alumni status. Prior to graduation, measures of student demographics, student academic and social involvement are known. After graduation, measures of alumni demographics and social involvement are gathered by the UND Alumni Association.

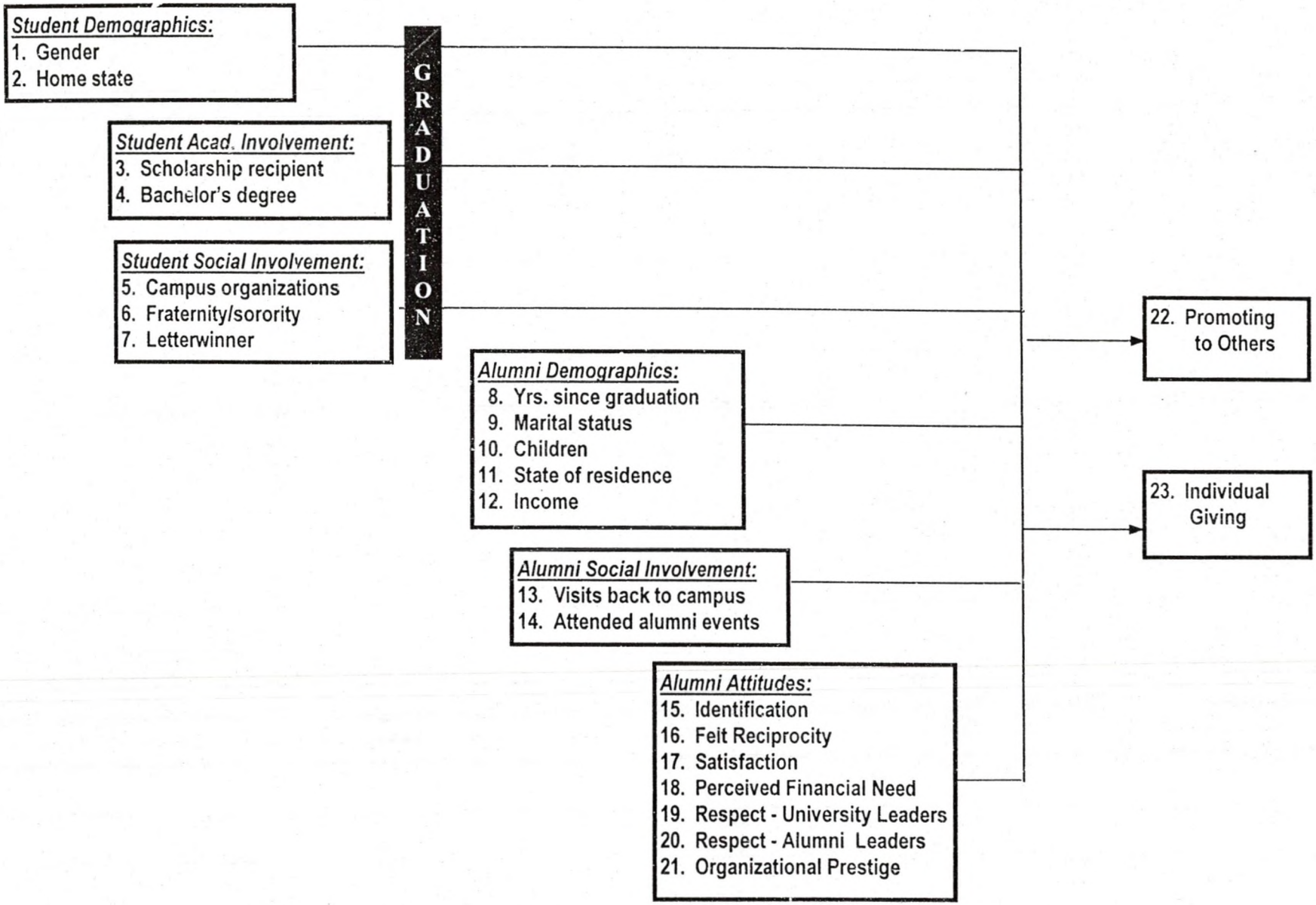

Figure 1: Conceptual Model of Variables Affecting Alumni Support

Finally, attitudinal measures gathered through this research are the most recent information. The measures include self identification, social identification, felt reciprocity, satisfaction, perceived financial need, respect for university leaders, respect for alumni leaders, and organizational prestige. The scaled items from the survey were combined into summated ratings scores to place the alumni along a continuum of agreement on the measure of attitude. A seven-point scale ranging from strongly agree (7) to strongly disagree (1) was used.

The backward stepwise procedure was employed for both the logistic regression and linear regression models to identify the best set of independent variables to predict the dependent variables. The procedure begins by identifying the independent variable with strongest effect on the dependent variable. Next, of the remaining variables, it identifies the one which, when combined with the previously chosen variable(s), has the strongest effect on the dependent variable. This process continues until none of the remaining variables have a significant effect on the remaining variance.

Descriptive statistics for all the variables utilized in the study are presented in Table 5 and Table 6. Variables are grouped according to the categories of student demographics, student academic involvement, student social involvement, alumni demographics, alumni social involvement, alumni attitudes, and measures of support. The variables, their means, and standard deviations are displayed. The remaining results are presented in order of the research questions as presented in Chapter I.

Table 5

Descriptive Statistics - Percentages

Variable	Coding	Percentage
Student Demographics:		
1. Gender	Male = 0	57.4%
	Female = 1	42.6%
2. Home state	Not ND resident = 0	66.9%
	ND resident = 1	33.1%
Student Academic Involvement:		
3. Scholarship recipient	No = 0	67.6%
	Yes = 1	32.4%
4. Bachelor's degree	No = 0	17.8%
	Yes = 1	82.2%
Student Social Involvement:		
5. Campus organizations	0	56.3%
	1	26.5%
	2	9.5%
	3	4.0%
	4	2.1%
	5	1.6%
6. Fraternity/sorority	No = 0	71.7%
	Yes = 1	28.3%
7. Letterwinner	No = 0	95.5%
	Yes = 1	4.5%
Alumni Demographics:		
9. Marital status	No = 0	16.2%
	Yes = 1	82.6%
10. Number of children	0	32.8%
	1	10.6%
	2	28.9%
	3	16.9%
	4	8.1%
	5 or more	2.7%
11. State of residence	Not ND resident = 0	73.2%
	ND resident = 1	26.8%
12. Individual income	Up to $20,000	11.6%
	$20,000 to $29,999	17.2%
	$30,000 to $49,999	33.5%
	$50,000 to $74,999	19.4%
	$75,000 to $99,999	7.0%
	$100,000 and over	11.4%
	$100,000 and over	11.4%

Table 6. Descriptive Statistics - Means

Variable	Mean	Maximum	Std. Deviation
Alumni Demographics			
8. Years since graduation	23.43	54	12.34
Alumni Social Involvement:			
13. Visits back to campus	2.09	11	3.16
14. Attend alum activities	1.31	11	2.43
Alumni Attitudes:			
15. Identification	41.02	51	10.27
15a. Self identification	19.04	24	5.22
15b. Social identification	22.00	30	6.22
16. Felt reciprocity	25.77	36	6.74
17. Satisfaction	34.28	36	5.78
18. Perceived financial need	9.69	12	2.43
19. Respect for university leaders	15.09	18	3.02
20. Respect for alumni leaders	14.65	18	3.21
18. Organizational prestige	26.38	30	4.53
Supportive Behaviors:			
22. Promoting to others	25.58	30	5.48
23. Individual giving	$4,114.41	$3,465,839	$107,564.12

Correlation Analysis

Correlations were generated for each of the variables in the study. The correlations were calculated and analyzed to better understand the relationships between the variables under study. The correlations were used to identify potential multicollinearity between variables, which might distort the regression results. According to Gunst and Mason (1980, p. 118), any pairwise correlation larger in magnitude than .70 or .80 should be investigated further. None of the pairwise correlations in this study exceeds those limits. A correlation matrix appears in Appendix D.

Research Question One

To what extent are donating and promoting the institution to others, both forms of supporting alma mater, related to one another?

Canonical Analysis

A canonical analysis was conducted utilizing the two forms of supportive behavior, donating and promoting the institution to others as the set of dependent variables. The set of independent variables included the measures of student demographics, student academic involvement, student social involvement, alumni demographics, alumni social involvement, and the summated ratings of alumni attitudinal measures.

Canonical correlation relates the two sets of variables described above. The maximum number of canonical correlations between the two sets of variables is the number of variables in the smaller set.

There are two statistically significant pairs of canonical variates. The first pair accounts for 61.9% of the variance (canonical correlation = .7807) while the second accounts for 31.1% of the variance (canonical correlation = .5448).

Levine (1977, pp. 18-19) recommends interpreting the relationship of the original dependent variables to a canonical variable in terms of the correlations of the original variables with the canonical variables, that is, by the structure coefficients. The dependent variable, giving, is highly related to the first canonical variable with a correlation coefficient of .9799, while giving is highly related to the second canonical variable with a correlation coefficient of .9685.

Table 7

Measure of Overall Model fit for Canonical Correlation Analysis

	Canonical Correlation	Adjusted Canonical Correlation	Approx. Standard Error	Squared Canonical Correlation	F	Sig. of F
1	0.786745	0.780727	0.013062	0.618968	37.5753	.0001
2	0.557775	0.544773	0.023615	0.311113	18.7421	.0001

Multivariate Test of Significance	Value	F	Sig of F
Wilks' Lambda	0.26248760	37.5753	.0001

The squared canonical structure coefficients represent the proportion of variance linearly shared by a variable with the variable's canonical composite (Thompson, 1984, p. 21). So, the variable representing promoting the institution to others shares 96.02% of the variance with the first canonical composite, while sharing only 3.98% of the variance with the second canonical composite. The second dependent variable, individual giving, shares 93.79% of the variance with the second canonical composite, while sharing only 6.20% of the variance with the first canonical composite. Therefore, the dependent variables, individual giving and promoting the institution to others, though both considered form of supportive behaviors are quite independent of each other.

The canonical redundancy analysis shows that the 61.90% of the variance in the first canonical composite is explained by the independent variables, while 31.11% of the variance in the second canonical composite is explained by the independent variables. The interpretation of this canonical analysis focused upon the independent contributions of the dependent variables to the variances of the

composites. The relationships of the set of independent variables to each dependent variables is addressed in further regression analyses. The canonical redundancy analysis shows that neither of the first pair of canonical variables is a good overall predictor of the opposite set of variables, the proportions of variance explained being .3164 and .1034.

Table 8

Canonical Structure:
Correlations between the Dependent Variables and the Canonical Variables

Dependent Variables	Canonical Variable V1	Canonical Variable V2
Giving	.2490	.9685
Promoting	.9799	-.1994

Research Question Two

To what extent do student demographics (gender and home state), student academic involvement (receiving scholarships and bachelor's degree), student social involvement (number of campus organizations, membership in a fraternity or sorority, letterwinner), alumni demographics (years since graduation, marital status, number of children, state of residence, and individual income), alumni social involvement (visits back to campus, attend alumni activities), and alumni attitudes (identification, felt reciprocity, satisfaction, perceived financial need, respect for university leaders, respect for alumni leaders, and organizational prestige) predict whether or not alumni are donors or non-donors?

In an effort to better understand how donors differ from non-donors on independent variables of interest, a logistical regression was conducted on the

variables specified in the conceptual model. Logistic regression enables one to determine how mutually exclusive groups differ on the basis of other variables of interest (Hair et al., 1995). In addition, logistic regression offers advantages over other methods when analyzing data with nominal or categorical values. Ordinary least squares regression assumes a linear relationship between the variables as well as normality of the error terms. Logistic regression makes neither of these assumptions (Hosmer & Lemeshow, 1989). In order to create mutually exclusive groups, the individual giving variable, which was originally expressed in dollars, was transformed into a binary variable (0, 1) thus creating two groups of alumni based on their total individual contributions, classified as either a donor or nondonor. This variable was named donor for the logistic regression. This partition resulted in a groups of alumni who were donors and not donors.

Through the backward option, several variables were deleted from the analysis. The overall model fit derived from the -2 loglikelihood statistic is 959.588 with 12 DF ($p = 0.0001$). This statistic is similar to the F-statistic in ordinary least squares type regression and indicated that there were significant differences between those who donate and those who do not.

The overall test of the model compares the likelihood, L_β for the model to the likelihood (L_0) for a model of the data containing only a constant. The log of the likelihood ratio is a chi square statistic equal to the umber of variables in the model and is expressed as $-2(\log L_\beta - \log L_0)$. The -2 Log Likelihood is 954.337, which is used to test the significance of the logistic model. This model chi-square statistic associated with this model is 243.416 with 13 degrees of freedom, which

is significant at the .0001 level. Model chi-square is a likelihood ratio test, which reflects the difference between the error in the initial chi-square model, which does not include the independent variables and error when the independent variables are included in the model. Thus, model chi-square functions like the F-test in an ordinary least squares regression model. The test statistic resembles the form of the statistic used with regression parameters. It is the estimated coefficient divided by its standard error, known as Wald's Z statistic.

The correct and incorrect estimates for group classification are shown in Table 9. The overall rate of correct classification is estimated at 71.41% with 74.48% of the non-donors and 68.36% of the donors being correctly classified. Estimation is maximum likelihood estimation, which is an iterative process with four iterations in this case. Where ordinary least squares regression minimizes the distance of the data point to the regression line, maximum likelihood estimation maximizes the log likelihood, which reflects how likely it is that the observed values of the dependent may be predicted from the observed values of the independent variables.

Table 9

Results of Logistic Regression Classification Table for Donor

Observed		Predicted		
		0	1	Correct
Non-donor	0	321	110	74.48%
Donor	1	137	296	68.36%
Overall				71.41%

Table 10

Logistic Regression - Variables in the Equation

Variable	*b*	Standard Error	Wald Statistic	df	Sig	R	Odds Ratio
Home state	.3660	.1795	4.1563	1	.0415	.0424	1.4419
Scholarship recipient	.2899	.1754	2.7320	1	.0984	.0247	1.3363
Campus organizations	.2872	.0850	11.4320	1	.0007	.0887	1.3328
Years since graduation	.0456	.0077	35.1096	1	.0000	.1663	1.0466
Marital status	-.4609	.2118	4.7370	1	.0295	-.0478	.6307
State of residence	-.5318	.1963	7.3398	1	.0067	-.0668	.5875
Individual income	.2336	.0549	18.1105	1	.0000	.1160	1.2632
Visits back to campus	.0569	.0276	4.2394	1	.0395	.0432	1.0586
Self identification	.0324	.0191	2.8613	1	.0907	.0268	1.0329
Felt reciprocity	.0324	.0157	4.2400	1	.0395	.0432	1.0329
Perceived financial need	.1152	.0397	8.4098	1	.0037	.0732	1.1221
Respect for alumni leaders	.1103	.0351	9.8957	1	.0017	.0812	1.1166
Organizational prestige	-.1274	.0348	13.3923	1	.0003	-.0975	.8804
Constant	4.1724	.5705	53.4863	1	.0003		

The parameter estimates of home state, scholarship recipient, number of campus organizations, years since graduation, marital status, state of residence, individual income, visits back to campus, self identification, felt reciprocity, perceived financial need, respect for alumni leaders, and perceived organizational prestige were significant as shown in Table 10.

The positive parameter estimates in the logistical regression model indicates that the "1" group (the donor group) tend to exhibit that characteristic. Donors are associated with the demographic characteristics of being a scholarship recipient in college, identifying with the institution on a personal level, respect for alumni leaders, male, unmarried, lower perception of organizational prestige, involvement in campus organizations, and increasing years since graduation.

The SPSS stepwise backward procedure was used to build the logistical regression model. The variables that dropped out of the equation using the backward-Wald option in logistic regression include: bachelor's degree, number of children, attended alumni events, gender, fraternity/sorority, letterwinner, social identification, respect for university leaders, and satisfaction.

Interpretation of the logistic regression depends on the odds ratios, which indicate the effect of the independent variable on the dependent variable according to increased or decreased probability. While beta coefficients in linear regression are compared to 0.0 for the direction of the effect, the odds ratio is compared to 1.0. Odds ratios below 1.0 indicate a negative effect while odds ratios above 1.0 indicate a positive effect.

Odds ratios are common measures of association for two variables. The odds ratio is one odds divided by another for the second variable, such as the odds of being a donor for the second variable individual income. The interpretation of discrete and continuous variables is somewhat different. Thus,

the 1.2632 ratio for higher income to lower income means that a unit increase (switching from male = 0 to female = 1) is associated with an increase in the odds of donating by a factor of 1.263. Likewise the .5875 odds ratio of out-of-state residents to North Dakota residents means that a unit decrease (switching from North Dakota residence=1 to out-of-state residence = 0) is associated with a decrease in the odds of being a donor by a factor of 1.702 (1/. 5875).

The coefficient *b* measures the change in the odds of a donor outcome associated with a one unit change in the factor on the log-odds scale; e^b measures the multiplicative change in the likelihood of a donor outcome associated with a one-unit change in the independent variable on the odds scale. In the case of a discrete variable, analyzing a one-unit change is sufficient, but when the independent variable is continuous, the application and interpretation is more complex. For example, in the case of a discrete variable such as homestate, the odds ratio could be interpreted as a one-unit change in the independent variable, meaning homestate, and results in an increase of the likelihood of donation by a factor of 1.4419. An example of a continuous variable is the number of years since graduation. In this case, multiple unit changes are possible. If the years since graduation change by one year, the likelihood of donation increases by a factor of 1.0466. If years since graduation changed by 5, the likelihood of donation would increase by 1.2557.

Research Question Three

Of those who donate, to what extent do student demographics (gender and home state), student academic involvement (receiving scholarships and

bachelor's degree), student social involvement (number of campus organizations, membership in a fraternity or sorority, letterwinner), alumni demographics (years since graduation, marital status, number of children, marital status, number of children, state of residence, and individual income), alumni social involvement (visits back to campus, attend alumni activities), and alumni attitudes (identification, felt reciprocity, satisfaction, perceived financial need, respect for university leaders, respect for alumni leaders, and organizational prestige) predict the amount of individual giving?

A linear regression model was developed from the donors in the sample. The total number of donors is 50.2% of the sample, a total of 524 alumni. The stepwise backward regression method to predict promoting the institution to others utilized 22 predictor variables. The final model contains the following variables: organizational prestige, years since graduating, received bachelors degree from UND, respect for alumni leaders, number of visits back to campus, and social identification. Those variables account for 30.9% of the variance in individual giving totals.

With an F value of 39.602, the overall equation is significant at the .0001 level. Successive eliminations occurred until each variable remaining was significant at the .05 level. After 24 iterations, five variables remained in the final equation. The results in order of beta weights are as follows: individual income (.351), perception of financial need (.229), years since graduation (.213), attend alumni activities (.141), and number of children (-.139).

Table 11

Results of Alumni Giving Regression Analysis

Model	B	Std. Error	Beta	t	Sig.
(Constant)	.856	.073		11.656	.000
Years since graduation	.0062	.001	.213	4.164	.000
Number of children	-.0324	.011	-.139	-2.823	.005
Individual income	.0708	.009	.351	8.129	.000
Attend alumni activities	.0177	.005	.141	3.271	.001
Perception of financial need	.0355	.006	.229	5.550	.000

The prediction equation using these variables is:

$Y' = .856 + .0062\ X_8 - .0324\ X_{10} + .0708X_{12} + .0177X_{14} + .0355\ X_{18}$

Where:

Y' = Individual giving total

X_8 = Years since graduation

X_{10} = Number of children

X_{12} = Individual income

X_{14} = Attend alumni activities

X_{18} = Perception of financial need

Research Question Four

To what extent do student demographics (gender and home state), student academic involvement (receiving scholarships and bachelor's degree), student social involvement (number of campus organizations, membership in a fraternity or sorority, letterwinner), alumni demographics (years since graduation,

marital status, number of children, marital status, number of children, state of residence, and individual income), alumni social involvement (visits back to campus, attend alumni activities), and alumni attitudes (identification, felt reciprocity, satisfaction, perceived financial need, respect for university leaders, respect for alumni leaders, and organizational prestige) predict to what degree alumni promote the university to others?

The stepwise backward regression method to predict promoting the institution to others utilized 23 predictor variables. The final model contains the following variables: organizational prestige, years since graduating, received bachelors degree from UND, respect for alumni leaders, number of visits back to campus, and social identification. Those variables account for 59.7% of the variance in promoting the institution to others.

With an F value of 158.348, the overall equation is significant at the .0001 level. Successive eliminations occurred until each variable remaining was significant at the .05 level. After twenty-one iterations, eight variables remained in the final equation. The results in order of beta weights are as follows: organizational prestige (.410), social identification (.262), years since graduation (-.134), respect for alumni leaders (.132). UND Bachelors degree (.101), visits back to campus (.109), satisfaction (.102), and state of current residence (.045).

Table 12

Results of Promoting Behavior Regression Analysis

Model	B	Std. Error	Beta	t	Sig.
(Constant)	.451	.878		.514	.607
UND bachelor's degree	1.50	.327	.101	4.590	.000
Years since graduation	-.059	.010	-.134	-5.916	.000
State of current residence	.547	.273	.045	2.005	.045
Visits back to campus	.180	.039	.109	4.593	.000
Social identification	.229	.024	.262	9.715	.000
Satisfaction	.097	.026	.102	3.738	.000
Respect for alumni leaders	.227	.046	.132	4.955	.000
Organizational prestige	.496	.035	.410	14.213	.000

The prediction equation using these variables is:

$$Y' = .451 + 1.50X_4 - 059X_8 + .547X_{11} + .180X_{13} + .229\ X_{15b} + .097X_{17} + .227\ X_{20} + .496X_{21}$$

Where:

Y' = Promoting the institution to others

X_4 = UND bachelor's degree

X_8 = Years since graduation

X_{11} = State of current residence

X_{13} = Visits back to campus

X_{15b} = Social identification

X_{20} = Respect for alumni leaders

X_{21} = Organizational prestige

Table 13

Regression Statistics

	Donating Logistic Regression (Odds Ratios)	Individual Giving Linear Regression (Std. Beta)	Promoting Linear Regression (Std. Beta)
Student Demographics:			
Gender			
Homestate	1.4419*		
Student Academic Involvement:			
Scholarship Recipient	1.3363		
Bachelors degree			.101***
Student Social Involvement:			
Campus organizations	1.3328***		
Fraternity/sorority			
Letterwinner			
Alumni Demographics:			
Years since graduation	1.0466**	.213***	
Marital status	0.6307*		
Number of children		-.139**	
State of residence	0.5875**		.045*
Individual income	1.2632***	.351***	
Alumni Social Involvement:			
Visits back to campus	1.0586*		.109***
Attend alum activities		.141**	
Alumni Attitudes:			
Identification			
Self identification	1.0329		
Social identification			.262***
Felt reciprocity	1.0329*		
Satisfaction			.102***
Perceived financial need	1.1221*	.229***	
Respect for university leaders			
Respect for alumni leaders			
Organizational prestige			

* = $p \leq .05$
** = $p \leq .01$
*** = $p \leq .001$

Results of the logistic regression, as shown in Table 13, indicate the variables that predict whether or not alumni will donate to alma mater. Though it is valuable to study whether or not alumni will donate or not, the actual amount of individual giving provides additional information as a dependent variable. Linear regression was utilized to predict both alumni individual giving totals and promoting the institution to others. Though giving and promoting are both supportive behaviors, different independent variables predicted each form of support as shown in Table 13. The significant predictors of donating and promoting are also shown in Figure 2 on the following page.

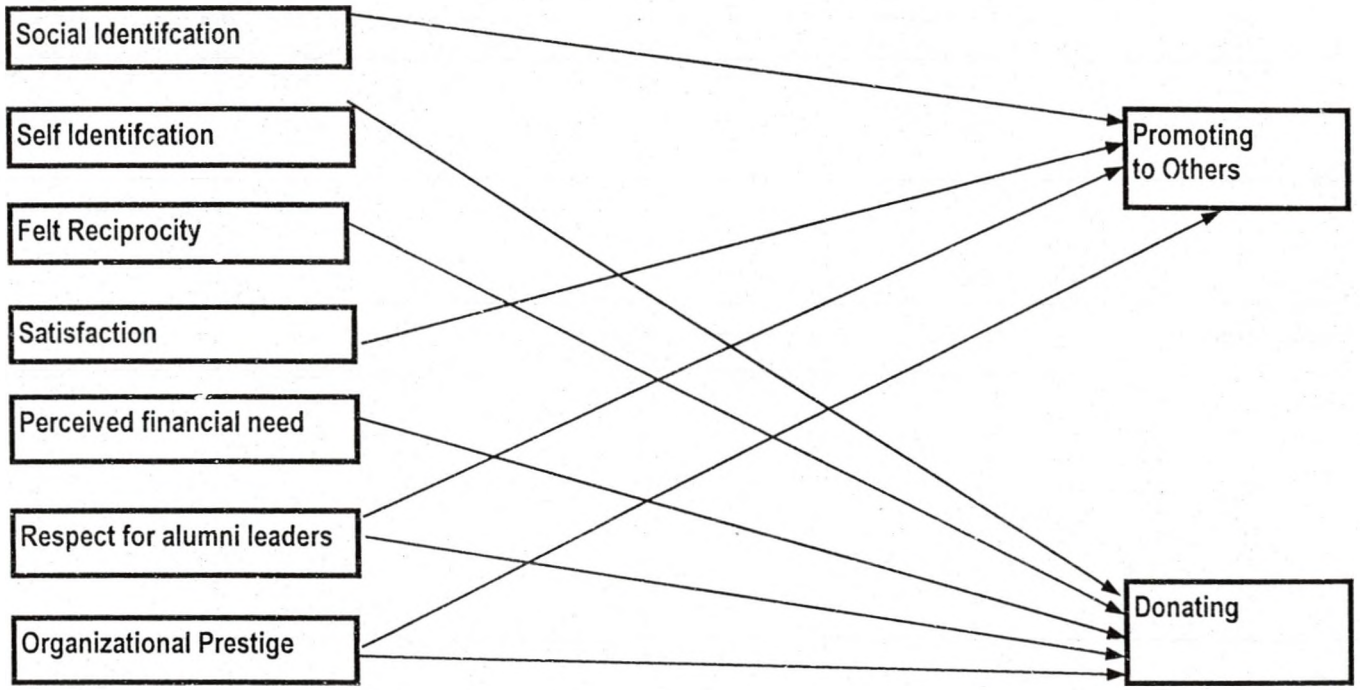

Figure 2: Alumni Attitudes Affecting Alumni Support

CHAPTER VI

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

This chapter reviews the purpose of the study and briefly describes the methods that were utilized in this study. Each of the research questions is summarized, based on the results of the data analysis along with a brief description of the findings. Implications for research and practice are presented. Finally, recommendations for future research are suggested.

Purpose

Understanding that institutions of higher education must rely more and more on alumni for financial and other support necessary to achieve the University's goals, a knowledge of the factors that influence alumni giving and donor motivation and behavior is useful. The purpose of this study was to determine the relationship of selected student demographics, student academic involvement, student social involvement, alumni demographics, alumni social involvement, and alumni attitudinal measures. Awareness of donor characteristics would assist development officials in identifying prospects. Knowledge of donor characteristics provides a basis for university fund raisers to predict more accurately which alumni are likely to support their alma mater.

Review of Research Questions

Four research questions were considered in this study. First, what is the relationship between the two forms of supportive behavior, namely promoting the institution to others and donating resources? Second, which combination of variables best predicts the outcome of whether or not alumni are donors? Third, of the subsample of donors, which combination of variables best predicts the amount that they will donate? Fourth, which combination of variables best predicts whether or not alumni promote the institution to others?

Summary - Research Question One

Canonical correlation was utilized to compare the set of dependent variables. The first set included the the 22 independent variables. The second set of variables included two dependent variables, namely donating and promoting the institution to others.

The squared canonical structure coefficients represent the proportion of variance linearly shared by a variable with the variable's canonical composite (Thompson, 1984, p. 21). So, the variable representing promoting the institution to others shares 96.02% of the variance with the first canonical composite, while sharing only 3.98% of the variance with the second canonical composite. The second dependent variable, individual giving shares 93.79% of the variance with the second canonical composite, while sharing only 6.20% of the variance with the first canonical composite. Therefore, the dependent variables individual

giving and promoting the institution to others though both considered form of supportive behaviors are quite independent of each other.

Summary - Research Question Two

Of the cases entered into the logistic regression, 71.41% were correctly classified as donors or non-donors. For the alumni sampled, 68.36% of the donors were correctly classified and 74.48% of the non-donors were correctly classified. These results are comparable to previous research. Results of classification rates of donor status in alumni studies show results of 77.3% (Selig, 1999); 80.5% (Pearson, 1996), 65.2% (Martin, 1993); 69.53% (Shadoian, 1989); 80.0 percent (Grill, 1988), and 64.11% (Beeler, 1982).

Summary - Research Question Three

Backward stepwise regression analysis was utilized to find the best combination of predictor variables. Of the 22 independent variables, five of them were statistically significant. With an F value of 39.602, the overall model is significant at the .0001 level. Successive eliminations occurred until each variable remaining was significant at the .05 level. After 24 iterations, five variables remained in the final equation. The results in order of beta weights are as follows: individual income (.351), perception of financial need (.229), years since graduation (.213), attend alumni activities (.141), and number of children (-.139).

Summary - Research Question Four

With an F value of 158.348, the overall model is significant at the .0001 level. Successive eliminations occurred until each variable remaining was significant at the .05 level. After 21 iterations, eight variables remained in the final equation. The results, in order of beta weights are as follows: organizational prestige (.410), social identification (.262), years since graduation (-.134), respect for alumni leaders (.132) UND bachelor's degree (.101), visits back to campus (.109), satisfaction (.102), and state of current residence (.045).

Research Implications

Several of the study findings have theoretical implications for the supportive behaviors of alumni for their alma mater. The study indicates that there is only minimal correlation between the two forms of supportive behavior, individual giving and promoting the institution to others. Past research has combined these two forms of support together for analysis, rather than comparing them (German, 1997). The predictors of individual giving and promoting the institution to others are quite different. Promoters are best predicted by whether or not alumni received a bachelor's degree from the institution, years since graduation, current state of residence, visits back to campus, social identification, satisfaction, respect for alumni leaders, and organizational prestige.

Only a few variables predict both donors and promoters. The only variable that predicts these variables in the same direction is respect for alumni

leaders. The remaining variables that predict both forms of supportive behavior exhibit inverse relationships. Those variables include years since graduation, current state of residence, and organizational prestige.

Alumni who are most recent graduates are more likely to be promoters, while increasing years since graduation predicts donors. Alumni who currently reside in North Dakota are more likely to promote the institution to others than alumni who reside outside the state. Several questionnaires were returned with comments indicating that the alumni would promote UND if they lived in the area. Perceived organizational prestige is a strong predictor of promoting behavior. Somewhat surprisingly, lack of perceived organizational prestige is related to donating. A possible interpretation of this outcome is that alumni perceive greater need associated with a lack of organizational prestige, or put another way, that donating provides the opportunity to help or improve the institution.

Practical Implications

The research findings from this study provide many implications for practitioners in alumni associations, alumni foundations, university advancement, and university relations. The results indicate characteristics of alumni who are more likely to be donors and promoters of the institution. These findings provide marketing implications for university and alumni relations staff.

Demographic data contained in the UND Alumni Association database present several opportunities for target marketing. Many of the predictors are demographic in nature, providing the basis for the alumni association to segment

their database into market segments and market profiles. First, North Dakota natives are more likely to become donors. Perhaps, this is because of the connection those alumni feel with the state of North Dakota, and, in turn, the University of North Dakota. Second, those alumni who live out of state are more likely to donate. Third, scholarship recipients are more likely to donate. Fourth, alumni who are not married are more likely to donate. On a related note, the number of children is a predictor of alumni giving amounts, that is, the fewer the children, the higher the giving total. Fifth, the greater the number of years since graduation, the more likely alumni are to become donors. This is also a strong predictor of the actual amount an individual will donate. Finally, individual income is a strong predictor of whether or not alumni are also donors. It is also the strongest predictor of how much they will donate.

A few of the predictors of donation are factors that the university might influence. First, the more organizations that students were involved in during college, the more likely they are to become donors. This not only presents a target marketing opportunity for the alumni association, but is also relevant information for university advancement as well. Alumni associations may wish to become more involved with student organizations since the existence of such organizations both encourages student retention and increases the likelihood that alumni of student organizations will continue to support the university. Promoting student participation in organizations, not only contributes to the undergraduate experience, but also might increase the potential for future alumni donations.

Second, the number of visits back to campus predicts alumni donors. Inviting alumni back to campus and encouraging more visits is likely to generate positive results and provide relationship marketing opportunities for alumni and university relations staff

Several attitudinal measures predict whether or not alumni are donors. These attitudinal measures provide the basis for relationship marketing ideas and content for messages and alumni appeals. First is the dimension of the identification measure referred to as self identification, Those who identify on a personal level with the university are more likely to donate.

Felt reciprocity and perceived need both predict whether or not alumni will donate. Steps that alumni relations can take to show alumni that they care about them and appreciate their commitment and donations is indicated to provide felt reciprocity. Perceived financial need can be addressed through communications with alumni. This variable is also the only attitudinal measure that was predictive of alumni giving amount. Information that shows alumni what the university needs would be beneficial. Another attitudinal factor that predicts donation is respect for alumni leaders. Because the alumni leadership is the primary contact for alumni, respect for those individuals is important. Finally, the lack of perceived organizational prestige is somewhat predictive of donation. This may also be an indicator that the university is in need.

Given the importance of characteristics of both the alumni and university experience in predicting supportive behaviors, a comprehensive fund-raising

strategy would ideally begin during the college recruiting process. Generous alumni evolve from students at the beginning of their college careers. Predicting those alumni based on what is know when students enter the university is challenging. Gathering and analyzing information regarding college and alumni demographics, experiences, and attitudes improves the ability to identity alumni donors and promoters. In addition, knowledge and understanding of the characteristics and attitudes of donors, creates an opportunity to for university and alumni relations officials to positively influence alumni to donate and promote their alma mater.

Recommendations for Further Research

1. Other researchers may want to replicate this study at other institutions to help determine the generalizability of these results.

2. The findings from this study consider the predictors of alumni support within a single institution. Further research may wish to compare differences in predictors of support across institutions. For example, are there differences between private and public universities? Are there differences between Research I universities and other university classifications?

3. Research on the formation of alumni donors' attitudes, including how those attitudes form, when they form, and the extent to which post-graduation activities can influence those attitudes.

4. Continued research into what types of behavior, such as promoting the institution to others, constitute alumni support beyond donating financial resources.

5. Analysis of differences in alumni attitudes by the era in which they attended. Alumni hold different experiences based on the particular historical era when they were college students, so their identification with their alma mater should be considered in the context of history. Perhaps the identification of alumni with alma mater differ between political eras such post World War II (1945-1954), post GI Bill (1955-1963), Vietnam (1964-1973), end of Vietnam/Nixon era (1974-1980), Reagan/Bush era (1980s), and Clinton era (1990s).

6. Qualitative research conducted with major donors would provide insight into the influential factors in the decision to donate.

APPENDICES

APPENDIX A

LETTER FROM ALUMNI ASSOCIATION

University of North Dakota FOUNDATION

May 6, 1999

Dear Institutional Review Board:

Please consider this letter of support for Sheila Hanson, Ph.D. student in Educational Foundations and Research. She plans to conduct survey research for the UND Alumni Association. A mail survey will be sent to a sample of UND alumni in May 1999.

Sheila will be providing the UND Alumni Association and Foundation the results of her research upon completion of her dissertation.

Sincerely,

Blanche E Abdallah

Blanche E. Abdallah
Director of Giving
UND Foundation

P.O. Box 8157
Grand Forks, North Dakota 58202

Phone: (701)777-2611
1-800-543-8764
FAX: (701)777-4054

APPENDIX B

COVER LETTER

Educational Foundations & Research
University of North Dakota
PO Box 7189
Grand Forks, ND 58202

June 16, 1999

<first name> <last name>
<address>
<city>, <state> <zip>

Dear <first name>,

I'm a graduate student at the University of North Dakota working on my dissertation research to complete my Ph.D. Enclosed is a questionnaire that explores the relationship between UND and UND alumni. This research investigates the factors that influence the closeness of the relationship between alumni and their universities.

Would you please assist me by completing this questionnaire and returning it in the postage-paid return envelope? It should take no more than 15 minutes to complete. Surveys have been sent randomly to alumni of every era. For the results to be meaningful, it is important for each alumnus to participate. The reliability of my research depends on your responses. No individual survey responses will be revealed to anyone at any time.

All of your answers are anonymous and are strictly confidential. You will not be solicited by me or anyone else as a result of your participation in this research. A statistical summary of the overall results of this research will be made available to University of North Dakota officials for planning purposes.

I would appreciate a prompt return of your survey. If you have any questions or comments, please call me directly at (701) 777-5147. Thank you very much!

Sincerely,

Sheila Hanson
Graduate Student, Educational Foundations & Research
University of North Dakota

APPENDIX C

ALUMNI SURVEY

University of North Dakota Alumni Survey

I. Please express your degree of agreement or disagreement with each of the following statements:

A. Being a University of North Dakota graduate...	Strongly Disagree						Strongly Agree
1. ...is an important part of who I am	1	2	3	4	5	6	7
2. ...is something about which I have no clear feelings	1	2	3	4	5	6	7
3. ...means more to me than just having a degree	1	2	3	4	5	6	7
4. ...is something I rarely think about	1	2	3	4	5	6	7
5. If someone praises UND, it is the same as a personal compliment	1	2	3	4	5	6	7
6. I am interested in what others think about UND	1	2	3	4	5	6	7
7. When I talk about UND, I usually say "we" rather than "they"	1	2	3	4	5	6	7
8. When someone criticizes UND, it feels like a personal insult	1	2	3	4	5	6	7
9. UND's successes are my successes	1	2	3	4	5	6	7

B. The people at the University of North Dakota...							
1. ...value my contribution to its well-being	1	2	3	4	5	6	7
2. ...appreciate any extra effort from me	1	2	3	4	5	6	7
3. ...listen to any complaints I might have concerning the university	1	2	3	4	5	6	7
4. ...would notice if I did something that benefited the university	1	2	3	4	5	6	7
5. ...show concern for me	1	2	3	4	5	6	7
6. ...take pride in my accomplishments	1	2	3	4	5	6	7

C. I am satisfied with...							
1. ...the education I received while a student at UND	1	2	3	4	5	6	7
2. ...the facilities at UND when I was a student	1	2	3	4	5	6	7
3. ...how I was treated as a student at UND	1	2	3	4	5	6	7
4. ...how UND prepared me for a career	1	2	3	4	5	6	7
5. ...my choice to attend UND	1	2	3	4	5	6	7
6. ...the UND Alumni Association	1	2	3	4	5	6	7
7. ...the University of North Dakota in general	1	2	3	4	5	6	7

II. Whether or not you already have donated to UND, please rate the influence of the following factors on a decision to donate to UND.

	Not Important						Very Important
1. The tax deductibility of the gift	1	2	3	4	5	6	7
2. Being loyal to UND	1	2	3	4	5	6	7
3. Feeling good about helping UND	1	2	3	4	5	6	7
4. Improving the quality of UND	1	2	3	4	5	6	7
5. A matching gift from my employer	1	2	3	4	5	6	7
6. Supporting higher education	1	2	3	4	5	6	7
7. To "pay back" UND for my accomplishments	1	2	3	4	5	6	7
8. The ability to direct my gift to a specific area	1	2	3	4	5	6	7

III. Since graduation, how many times have you... ***(Please circle number of times.)***

1 ... returned to the University of North Dakota campus for events such as Homecoming, a class reunion, or Alumni Days.

1 2 3 4 5 6 7 8 9 10 More than 10 times

2 ... participated in an off-campus alumni activity such as an alumni meeting, recruiting event, or volunteer work.

1 2 3 4 5 6 7 8 9 10 More than 10 times

IV. Please express your degree of agreement or disagreement with each of the following:

A. Being a University of North Dakota graduate...

	Strongly Disagree						Strongly Agree
1. UND presently needs strong financial support from its alumni	1	2	3	4	5	6	7
2. UND's need for financial support from its alumni will be even greater in the future	1	2	3	4	5	6	7
3. State universities need the financial support of their alumni more than private universities	1	2	3	4	5	6	7
4. The administration of UND, on the whole, is good	1	2	3	4	5	6	7
5. I think the people leading the UND Alumni Association are fulfilling their responsibilities well	1	2	3	4	5	6	7
6. I would speak favorably about UND if asked	1	2	3	4	5	6	7
7. People I know look down on UND	1	2	3	4	5	6	7
8. When I have the opportunity, I advise the parents of those making a college choice that they should consider UND	1	2	3	4	5	6	7
9. People I know think highly of UND	1	2	3	4	5	6	7
10. I have positive feelings about UND's administration	1	2	3	4	5	6	7
11. It is prestigious to be an alumnus of UND	1	2	3	4	5	6	7
12. I encourage those who are considering attending college to go to UND	1	2	3	4	5	6	7
13. People seeking to advance their careers should downplay their association with UND	1	2	3	4	5	6	7
14. Those leading UND are not doing a good job	1	2	3	4	5	6	7
15. When I meet high school students and the topic arises, I usually advise them to attend UND	1	2	3	4	5	6	7
16. I think that the leaders of the UND Alumni Association are doing a good job	1	2	3	4	5	6	7
17. I have positive feelings about the administration of the UND Alumni Association	1	2	3	4	5	6	7
18. In conversations with friends and acquaintances, I bring up UND in a positive way	1	2	3	4	5	6	7
19. Most people are proud when their children attend UND	1	2	3	4	5	6	7

	Not Important						Very Important
1. Receiving the UND *Alumni Review* in the mail	1	2	3	4	5	6	7
2. Phone contacts from the UND Alumni Association	1	2	3	4	5	6	7
3. Letters from the UND Alumni Association	1	2	3	4	5	6	7
4. Attending alumni reunions and parties	1	2	3	4	5	6	7
5. Visiting UND	1	2	3	4	5	6	7
6. Following UND sports	1	2	3	4	5	6	7
7. Attending Homecoming at UND	1	2	3	4	5	6	7
8. Reading about UND on its website (http://www.und.nodak.edu)	1	2	3	4	5	6	

1. My strongest ties to UND are with...

2. What distinguishes UND from other universities?

APPENDIX D

CORRELATION MATRIX

Correlation Matrix

	1 GEN	2 HMS	3 SCH	4 BAC	5 ORG	6 FRA	7 LTR	8 YRS	9 MAR	10 CHD	11 RES	12 INC	13 VIS	14 ACT	15 IDN	15a IDP	15b IDS	16 FRY	17 SAT	18 FND	19 RUL	20 RAL	21 OPE	22 PRO	23 GIV	24 DON
GEN	1.00																									
HMS	-.035	1.00																								
SCH	.097	-.032	1.00																							
BAC	.163	-.208	.082	1.00																						
ORG	-.051	-.130	.188	.116	1.00																					
FRA	-.023	-.107	-.089	.215	.102	1.00																				
LTR	-.065	.056	.017	.077	.005	.089	1.00																			
YRS	-.237	-.166	-.202	-.042	.203	.182	.021	1.00																		
MAR	-.066	-.024	-.033	-.089	.002	.029	-.069	.116	1.00																	
CHD	-.128	-.097	-.140	-.091	.086	.064	-.048	.521	.304	1.00																
RES	-.057	.280	.040	-.005	.019	.068	.059	.006	-.038	-.088	1.00															
INC	-.435	-.008	-.041	-.063	.141	.106	.044	.339	.117	.200	.099	1.00														
VIS	-.070	-.099	-.033	.105	.128	.178	.075	.115	.015	.094	-.211	.092	1.00													
ACT	-.151	-.086	-.046	.069	.153	.202	.083	.229	.053	.124	.000	.227	.434	1.00												
IDN	-.050	-.108	.007	.175	.118	.136	.070	.110	-.008	.024	.017	.044	.311	.313	1.00											
IDP	-.030	-.114	.035	.192	.138	.115	.042	.108	-.009	.015	-.018	.020	.301	.282	.878	1.00										
IDS	-.058	-.089	-.022	.130	.083	.127	.078	.101	-.013	.031	.045	.059	.253	.277	.915	.610	1.00									
FRY	-.086	-.084	-.025	.041	.092	.101	.023	.237	.037	.108	.063	.111	.192	.263	.567	.457	.551	1.00								
SAT	.026	.010	.031	.049	.114	-.008	-.023	.117	.013	.070	.042	.078	.100	.115	.520	.477	.460	.459	1.00							
FND	.009	-.032	.028	-.001	.148	.100	.031	.225	.069	.137	-.028	.102	.217	.183	.338	.289	.309	.373	.278	1.00						
RUL	.016	.011	-.007	-.006	.019	.015	.013	.184	.017	.114	.074	.012	.035	.102	.418	.356	.388	.462	.468	.333	1.00					
RAL	-.019	-.062	-.080	.017	.062	.101	.068	.262	.020	.148	.056	.094	.187	.246	.454	.398	.419	.581	.417	.455	.590	1.00				
OPE	.022	-.065	-.037	.097	.029	.005	.002	.071	.062	.022	-.074	-.027	.204	.129	.555	.514	.481	.412	.559	.277	.540	.483	1.00			
PRO	-.001	-.048	.012	.213	.055	.051	.064	-.028	.011	-.030	-.096	.003	.296	.217	.625	.535	.585	.408	.509	.303	.419	.452	.683	1.00		
GIV	-.031	.042	-.024	.016	-.019	-.013	.142	.064	.008	-.007	.020	.077	.082	.117	.034	.033	.027	.032	-.042	.046	-.019	.019	-.003	.013	1.00	
DON	.176	-.090	.017	.007	.223	.089	.041	.346	-.012	.131	.111	.269	.123	.197	.176	.184	.145	.237	.158	.228	.123	.256	.052	.040	.038	1.00

REFERENCES

Achen, C. H. (1982). Interpreting and using regression. Quantitative Applications in the Social Sciences Series, No. 29. Newbury Park, CA: Sage Publications.

Allen, N., & Meyer, J. (1990). The measurement of antecedents of affective, continuance, and normative commitment. Journal of Occupational Psychology, 63, 1-18.

American Fund-Raising Counsel Trust for Philanthropy. (1999). Giving USA 1999. New York: American Association of Fund-Raising Counsel Trust for Philanthropy.

Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. Academy of Management Review, 14(1), 20-39.

Astin, A. W. (1993). What matters most in college: Four critical years revisited. San Francisco: Jossey Bass Publishers.

Bagozzi, R. P. (1995). Reflections on relationship marketing in consumer markets. Journal of the Academy of Marketing Science, 23(4), 272-77.

Baker, P. C. (1998). The relationship of selected characteristics and attitudes of professional school alumni to financial support within a public research university. Unpublished doctoral dissertation, State University of New York at Buffalo.

Bendapudi, N., Singh, S. N. & Bendapudi, V. (1996). Enhancing helping behavior: An integrative framework for promotion planning. Journal of Marketing, 60, 33-49.

Beeler, K. J. (1982). A study of predictors of alumni philanthropy in private universities. Unpublished doctoral dissertation, University of Connecticut.

Berry, W. D. (1982). Understanding regression assumptions. Quantitative Applications in the Social Sciences Series, No. 92. Newbury Park, CA: Sage Publications.

Berry, L. L. (1995). Relationship marketing of services - - growing interest, emerging perspectives. (Special Issue on Relationship Marketing) Journal of the Academy of Marketing Science, 23(4), 236-246.

Bhattacharya, C. B., Rao, R. H., & Glynn, M. A. (1995). Understanding the bond of identification: An investigation of its correlates among art museum members. Journal of Marketing, 46, 46-57.

Blumenfeld, W. S., & Sartain P. L. (1974). Predicting alumni financial donation. Journal of Applied Psychology, 59(4), 522-523.

Blumenstyk, G., & Cage, M. C. (1991). Dire state economies force tough choices on many universities. The Chronicle of Higher Education, 37(39) 1-16.

Bolton, R.N., Drew, J. H. (1991). A multistage model of customers' assessments of service quality and value. Journal of Consumer Research, 17, 375-384.

Brittingham, B. E., & Pezzullo, T. R. (1990). The campus green: Fund raising in higher education. ASHE-ERIC Higher Education Report No. 1. Washington, DC: George Washington University.

Burke, P. J. & Reitzes, D. C. (1991). An identity theory approach to commitment. Social Psychology Quarterly, 54(3), 239-51.

Burnett, J. J. & Wood, V. (1988). A proposed model of the donation decision process. Research in Consumer Behavior, 3, 1-47.

Callero, P. L. (1985). Role-identity salience. Social Psychology Quarterly, 48(3), 203-215.

Cameron, K. S., & Ulrich, D. O. (1986). Transformational leadership in colleges and universities. In J. C. Smart (Ed.) Higher education: handbook of theory and research: Vol. 2. New York: Agathon Press.

Caruthers, F. A. (1973). A study of certain characteristics of alumni who provide financial support and alumni who provide no support to their alma mater. Unpublished doctoral dissertation, Oklahoma State University.

Conley, A. T. (1999). Student organization membership ad alumni giving at a public, research university. Unpublished doctoral dissertation, Indiana University.

Cook, W. B., & Lasher, W., F. (1996). Toward a theory of fund raising in higher education. The Review of Higher Education, 20(1), 3-51.

Coughlin, C. C., & Erekson, O. H. (1986). Contributions to intercollegiate athletic programs: Further evidence. Social Science Quarterly, 66, 194-202.

Council for Aid to Education. (1999). Voluntary support of education: 1997-1998.

Curti, M., & Nash, R. (1965). Philanthropy in the shaping of American higher education. New Brunswick, NJ: Rutgers University Press.

Dutton, J. M., & Dukerich, J. M. (1991). Keeping an eye on the mirror: The role of image and identity in organizational adaptation. Academy of Management Journal, 34, 517-54.

Duronio, M. A., & Loessin, B. A. (1991). Effective fund raising in higher education: Ten success stories. San Franciso: Jossey-Bass, Inc.

Dutton, J. M., Dukerich, J. M., & Harquail, C. V. (1994). Organizational images and member identification. Administrative Science Quarterly, 39(34), 239-263.

Eisenberger, R., Fasolo, P., & Davis-LaMastro, V. (1990). Perceived organizational support and employee diligence, commitment, and innovations. Journal of Applied Psychology, 75, 57-59.

Fournier, S. (1998). Consumers and their brands: Developing relationship theory in consumer research. Journal of Consumer Research, 24(4), 343-374.

Fox, J. (1991). Regression diagnostics. Quantitative Applications in the Social Sciences Series, No. 79. Newbury Park, CA: Sage Publications.

Fraenkel, J.R., & Wallen, N. E. (1993). How to design and evaluate research in education. New York, NY: McGraw-Hill.

Fray, F.C. (Ed.). (1981). Handbook for educational fund raising. San Francisco: Jossey-Bass, Inc.

Fritz, C., & Rylance, D. F. (1982). Ever westward to the Far East: The story of Chester Fritz. Grand Forks, ND: University of North Dakota.

Gardner, P. M. (1975). A study of the attitudes of Harding College Alumni with an emphasis on donor and non-donor characteristics. Unpublished doctoral dissertation, Ohio University.

German, S. D. (1997). Nonprofit relationship marketing: the role of identification. Unpublished doctoral dissertation, Texas Tech University.

Grace, J. D. (1993). Trends in fund-raising research. In M. J. Worth (Ed.), Educational fundraising: Principles and practice (pp. 380-388). Phoenix, AZ: Oryx Press.

Greenwood, J. D. (1984). Realism, identity, and emotion: Reclaiming social psychology. London: Sage Publications.

Grill, A. J. (1988). An analysis of the relationships of selected variables to financial support provided by alumni of a public university. Unpublished doctoral dissertation, Pennsylvania State University.

Grunig, S. D. (1993). A model of donor behavior for law school alumni. Unpublished doctoral dissertation, University of Arizona.

Gundlach, G. T., Achrol, R. S., & Mentzer, J. T. (1995). The structure of commitment in exchange. Journal of Marketing, 59, 78-92.

Gunst, R.F. and Mason, R. L. (1980). Regression analysis and its application: a data-oriented approach. New York: Marcel Dekker, Inc.

Haddad, F. D., Jr. (1986). An analysis of the characteristics of alumni donors and non-donors at Butler University. Unpublished doctoral dissertation, West Virginia University: Morgantown.

Haggberg, M. (1992). Why donors give. Fund Raising Management, 23(2), 39-41.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). Multivariate data analysis. Englewood Cliffs, NJ: Prentice Hall.

Hall, H. (1996). Planning ahead for survival. Chronicle of Philanthropy, 8(6), 22-24.

Hardy, M. A. (1993). Regression with dummy variables. Quantitative Applications in the Social Sciences Series, No. 93. Newbury Park, CA: Sage Publications.

Harris, M. L., & Harris, C. W. (1971). A factor analytic interpretation strategy. Educational and Psychological Measurement, 31, 589-606.

Harvey, J. W. (1990). Benefit segmentation for fund raisers. Journal of the Academy of Marketing Science, 18(1), 77-86.

Hinde, R. A. (1995). The adaptionist approach has iimits. Psychological Inquiry : An International Journal, 6(1), 50-51.

Hosmer, D.W., & Lemeshow, S. (1989). Applied logistical regression. New York: John Wiley & Sons.

House, M. L. (1987). Annual fund raising in public higher education: The development and validation of a prediction equation. Unpublished doctoral dissertation, University of Florida: Gainesville.

Hunt, S. D., & Morgan, R. M. (1995). The comparative advantage theory of competition. Journal of Marketing, 59, 1-15.

Kim, J. O., & Mueller, C. W. (1978). Factor analysis: statistical methods and practical issues. Quantitative Applications in the Social Sciences Series, No. 14. Beverly Hills, CA: Sage Publications.

Korvas, R. J. (1984). The relationship of selected alumni characteristics and attitudes to alumni financial support at private college. Unpublished doctoral dissertation, University of Missouri: Kansas City.

Kotler, P. (1994), Marketing management, (8th ed.). Englewood Cliffs, NJ: Prentice-Hall.

Kotler, P. ,& Andreasen, A. R. (1996). Strategic marketing for non-profit organizations. (5th ed.). Upper Saddle River, NJ: Prentice Hall, Inc.

Leslie, L. L., Drachman, S., Ramey, G., & Conrad, C. (1983). Factors accounting for variations over time in voluntary support for colleges and universities. Journal of Educational Finance, 9(2), 213-225.

Leslie, L. L., & Ramey, G. (1988). Donor behavior and voluntary support for higher education institutions. Journal of Higher Education, 59(2), 115-132.

Levine, M. S. (1977). Canonical analysis and factor comparison. Quantitative Applications in the Social Sciences Series, No. 6. Thousand Oaks, CA: Sage Publications.

Levitt, T. (1986). The marketing imagination. New York: The Free Press Division of MacMillan, Inc.

Lively, K. (1999, January 8). U. of North Dakota receives $100 million from an alumnus. Chronicle of Higher Education, p. A53.

Lively, K. (2000, May 5). Giving to higher education breaks another record. Chronicle of Higher Education, p. A41.

Lowenstein, R. L. (1997). Pragmatic fund-raising for college administrators and development officers. Gainesville, FL: University Press of Florida.

Mael, F., &. Ashforth, B. E. (1992). Alumni and their alma mater: A partial test of the reformulated model of organizational identification. Journal of Organizational Behavior, 13, 103-123.

Mael, F. (1992). Identifying organizational identification. Educational and Psychological Measurement, 52, 813-825.

Martin, J. C., Jr. (1993). Characteristics of alumni donors and non-donors at a research I, public university. Unpublished doctoral dissertation, University of Virginia.

McKee, D. F. (1975). An analysis of factors which affect alumni participation and support. Unpublished doctoral dissertation, Indiana University.

McNally, (1985). An analysis of alumni philanthropy related to personal, academic, and social characteristics. Unpublished doctoral dissertation, University of San Francisco.

Miller, B. W., & Eddy, J. P. (1983). Recruiting, marketing, and retention in institutions of higher education. Lanham, MD: University Press of America, Inc.

Miracle, W. D. (1977). Differences between givers and non-givers to the University of Georgia annual fund. Unpublished doctoral dissertation, University of Georgia: Athens.

Morgan, R. M., & Hunt, S. O. (1994). The commitment-trust theory of relationship marketing. Journal of Markefing, 58, 20-38.

Mosser, J. W. (1993). Alumni/ae gift giving behavior: A structural equation model approach. Unpublished doctoral dissertation, University of Michigan.

Oglesby, R. A. (1991). Age, student Involvement, and other characteristics of alumni donors and alumni non-donors of Southwest Baptist University. Unpublished doctoral dissertation, University of Missouri: Columbia.

Oliver, R. L., & Swan, J. E. (1989). Consumer perceptions of interpersonal equity and satisfaction in transactions: A field survey approach. Journal of Marketing, 53, 21-35.

Pace, C. R. (1979). Measuring outcomes of college. San Francisco: Jossey-Bass Publishers.

Pace, C. R. (1984). Measuring the quality of college student experience. Los Angeles: University of California, Higher Education Research Institute.

Pearson, W. E. (1996). A study of donor predictability among graduates of a school of education within a public university. Unpublished doctoral dissertation, University of Virginia.

Pollard, J. A. (1958). Fund-raising for higher education. New York: Harper and Brothers.

Pulley, J. L. (1999, June 4). Private gifts to colleges increased 15% in 1998. The Chronicle of Higher Education, 45, pp. A43-A44.

Pulley, J. L. (2000, March 31). Does my million mean anything? In era of megagifts, colleges try to keep nurturing (and soliciting) donors of lesser means. The Chronicle of Higher Education, 46(30), p. A42.

Press, S.J., and Wilson, S. (1978, December). Choosing between logistic regression and discriminant analysis. Journal of the American Statistical Association, 699-705.

Rice, D. R. (1992). The Clifford years: The University of North Dakota, 1971-1992. Grand Forks, ND: University of North Dakota.

Rosser, A. W. (1997). A stratificational analysis of the relationship between and among selected variables related to alumni annual giving to the association of former students of Texas A&M University. Unpublished doctoral dissertation, Texas A&M University.

Rylance, D. F. (1983). Alumni. In R. P. Wilkins (Ed.). (pp. 117-135). A century on the northern plains: The University of North Dakota at 100. Grand Forks, N.D: University of North Dakota Press.

Schroeder, L. D., Sjoquist, D. L., & Stephan, P. E. (1982). Understanding regression analysis: An introductory guide. Quantitative Applications in the Social Sciences Series, No. 57. Beverly Hills, CA: Sage Publications.

Selig, C. W. (1999). A study of donor predictability among alumni athletes of the University of Virginia. Unpublished doctoral dissertation, University of Virginia.

Serpe, R. T. (1987). Stability and change in self: A structural symbolic interactionist explanation. Social Psychology Quarterly, 50, 44-55.

Seymour (1966). Designs for fundraising: Principles, patterns, and techniques. New York: McGraw Hill.

Shadoian, H. L (1989). A study of predictors of alumni philanthropy in public colleges. Unpublished doctoral dissertation, University of Connecticut.

Sheth, J. N., & Parvatiyar, A. (1995). Relationship marketing in consumer markets: Antecedents and consequences. Journal of the Academy of Marketing Science, 23(4), 255-271.

Sims, R. R., & Sims, S. J. (1991). Managing institutions of higher education into the 21st century: Issues and implications. Westport, CT: Greenwood Press.

Smith, J. P. (1981). Rethinking the traditional capital campaign. In F. C. Pray (Ed.), Handbook for educational fund raising: A guide to successful principles and practices for colleges, universities and schools. San Francisco: Jossey-Bass.

Spaeth, J. L., & Greeley, A. M. (1970). Recent alumni and higher education. New York: McGraw-Hill.

Stokes, M. E., Davis, C. S., & Koch, G. G. (1995). Categorical data analysis using the SAS® system. Cary, NC: SAS Institute Inc.

Stryker, S. (1980). Symbolic interactionism: A social structure version. Palo Alto: Benjamin/Cummings.

Tabachnick, B. G., & Fidell, L. S. (1983). Using multivariate statistics. New York: Harper & Row.

Tajfel, H., & Turner, J. C. (1985). The social identity theory of group behavior. In S. Worhel & W. G. Austin (Eds.), Psychology of Intergroup Relations: Vol. 2. (pp. 7-24). Chicago: Nelson-Hall.

Tinto, V. (1993). Leaving college: Rethinking the causes and cures of student attrition. Chicago: The University of Chicago Press.

Thompson, B. (1984). Canonical correlation analysis: Uses and interpretation. Quantitative Applications in the Social Sciences, No. 47. Thousand Oaks, CA: Sage Publications.

Tom, G., & Elmer, L. (1994). Alumni willingness to give and contribution behavior. Journal of Services Marketing, 8(4), 57-62.

Tybout, A. M. & Artz, N. (1994). Consumer psychology. Annual Review of Psychology, 45, 113-170.

UND Alumni Association Information and Mission. (1999). Grand Forks: University of North Dakota Alumni Association. Retrieved November 19, 1999 from the World Wide Web: http://www.undalumni.org/assoc.htm

Volkwein, J. F., Webster-Saft, L., Xu, W., & Agrotes, M. H. (1989). A model of alumni gift-giving behavior. (ERIC Reproduction No. ED 308 761).

Westbrook, R. A. & Oliver, R. L. (1981). Developing better measures of consumer satisfaction: Some preliminary results," in K. B. Monroe (Ed.). Advances in Consumer Research: Vol. 8, 94-101. Ann Arbor, MI: Association for Consumer Research.

Wilkins, R. P. (1961). Edmond A. Hughes: A memoir. Grand Forks: University of North Dakota Press.

Wilkins, R. P. (Ed.). (1983). A century on the northern plains: the University of North Dakota at 100. Grand Forks, ND: The University of North Dakota Press.

Worth, M. J. (1993). Educational fund raising principles and practice. Phoenix, AZ: American Council on Education, The Oryx Press.