Evaluation of Saskatoon as a National Hockey League franchise location using a multiple regression model and community values analysis.

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EVALUATION OF SASKATOON AS A NATIONAL HOCKEY LEAGUE
FRANCHISE LOCATION USING A MULTIPLE REGRESSION
MODEL AND COMMUNITY VALUES ANALYSIS

by

© Darryl Cameron Kristjanson

A Thesis
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Faculty of Graduate Studies and Research
through the Faculty of
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the University of Windsor

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ABSTRACT

EVALUATION OF SASKATOON AS A NATIONAL HOCKEY LEAGUE FRANCHISE LOCATION USING A MULTIPLE REGRESSION MODEL AND COMMUNITY VALUES ANALYSIS

by

Darryl Cameron Kristjanson

In 1983 the city of Saskatoon was proposed as a site for a National Hockey League franchise. Although the franchise bid was rejected, questions as to the suitability of Saskatoon as a National Hockey League franchise location remained. This study was an attempt to answer the question, would a Saskatoon franchise draw sufficient attendance to be a viable National Hockey League location?

The evaluation of the suitability of Saskatoon as a National Hockey League location involved the use of two techniques; a multiple regression model and an analysis of community values. The multiple regression model was based upon league attendance from the 1982-83 season through the 1984-85 season. The analysis of community values involved the examination of factors specific to the community of Saskatchewan.

Factors found to be significant in the prediction of National Hockey League attendance were: 1) average income of the franchise location; 2) number of major
corporations headquartered in the franchise location, 3) team quality, 4) play-off contention, 5) general hockey interest, and 6) an interaction of hockey interest and population of the franchise location.

Considered in the analysis of community values were comparisons between the Saskatchewan Roughriders and the proposed National Hockey League franchise. The comparisons were found to be weak due to differences in both the number of games in a season and the time of the games in question. The agrarian background of the province of Saskatchewan was also examined for its effects on professional sport attendance.

Saskatoon was found to be a viable location for a National Hockey League location. The attendance predicted based upon the multiple regression model and community value analysis would place a Saskatoon franchise amongst the National Hockey League attendance leaders. Despite the probable viability of a Saskatoon franchise, the prospects for a Saskatoon National Hockey League franchise are poor due to factors related to the operation of the National Hockey League.
DEDICATION

To my parents for all their love, support and confidence
and

to my friends in Windsor for always making me proud.
ACKNOWLEDGEMENTS

I would like to express my appreciation to Drs. Moriarty, Meyer and Galasso for their time and the interest they have shown in this study. I am especially grateful for the confidence shown by my committee in allowing me the independence to complete this study.
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CHAPTER I

INTRODUCTION

The city of Saskatoon was proposed as a site for a National Hockey League franchise in 1983. A group of Saskatchewan investors reportedly offered $13 million for the St. Louis Blues franchise with the intention of moving the team to Saskatoon (Mueller, 1983). This venture would have required the construction of a new arena which had already been proposed for the city. Several years and several referendums later no arena has been constructed. Some people have suggested the National Hockey League franchise bid has played a major part in the delay of constructing a new civic arena. A study by Geddert (1984) which concluded that Saskatoon was a viable location for a National Hockey League franchise may have furthered the delay in deciding upon the appropriate capacity of a new arena as city officials have had to consider two possible occupants, a junior hockey franchise and a National Hockey League franchise.

Geddert (1984) studied National Hockey League attendance and attempted to answer the question, is Saskatoon a viable location for a National Hockey League franchise? Geddert's conclusion was that Saskatoon would draw sufficient attendance to support a
National Hockey League franchise. The findings of Geddert (1984) are questionable however, due to a number of errors present in his study. This present study will involve corrections of the errors in Geddert's study and also test the significance of the corporate community to professional sport attendance which is a factor that has not been tested in other studies. This study will also include a type of analysis which has not generally been applied to previous studies of sport attendance, a community value analysis, examining the influence of certain values of the people of Saskatoon.

Major Criticisms of Geddert Study

There were three major problems with the Geddert (1984) study of National Hockey League attendance. These problems were such that they could significantly affect the predictions of attendance based upon his model.

The first major problem was the lack of consistency in the dates of measurement of a number of variables. The dependent variable measured in Geddert (1984) was 1981-1982 and 1982-1983 attendance for the majority of National Hockey League teams. However, some franchises which no longer exist were included in the study using data from the 1974-1975
season. Seven years would seem to be too long a period of time for consistent measurement of attendance and factors influencing attendance.

Inconsistency in dates for Geddert's study was not limited to the dependent variable. Independent variables were measured at a variety of times between 1980 and 1984. Team quality was measured from the 1980-1981 season to the 1982-1983 season. The number of junior and university hockey teams was measured on February 1, 1984. With an independent variable measured in 1984 it is illogical to describe events of 1981, 1982 and 1983, such as attendance, as dependent variables.

A second major problem with Geddert (1984) is the lack of independent variables measuring economic factors. Thompson and Tinsley (1979) found that income elasticities for recreation were positive for all income groups in a study in the southern United States. Positive elasticity means that as income increases there is also an increase in the actual quantity purchased of a given item, in this case recreation. Thompson and Tinsley further found that the income elasticities were greater than 1 for higher income levels, meaning that the quantity of recreation purchased increases at a greater rate than the increase in income. Jozsa (1977) concluded that high personal income communities are prime locations for both
football and basketball franchises. Wise and Cox (1978) found that income level was a significant factor in differentiating between low, medium and high attenders of professional baseball. There is no reason to believe that economic factors should affect hockey differently than other sports. A study of the varying geographic markets for a given service demands the inclusion of variables to account for the differences between communities in terms of purchasing power.

The third major problem involves the use of sales of a publication, *The Hockey News*, to predict National Hockey League attendance. Sales of this publication could take two forms, as a complementary product or as a substitute product. As a complementary product, higher sales would correlate with higher National Hockey League attendance. However, as a substitute product, higher sales would correlate with lower National Hockey League attendance. Cohen and Cohen (1983) warn of the dangers in selecting independent variables which suppress the effect of other variables. The use of this independent variable is especially misleading when the model being developed is to be applied to cases which are significantly different than those used in its development.
Background to Problem

The history of National Hockey League franchise shifts and failures have been well documented (Klein and Reif, 1985; Quirk and El Hodiri, 1974; Ronberg, 1984) but not analyzed as to their causes. Klein and Reif (1985) attribute most of the franchise shifts and failures to financial problems generally but do not identify the causes of the financial difficulties. The most likely cause of financial problems for National Hockey League franchises which fail is poor attendance. Jones (1969) and Demmert (1973) both indicate that gate receipts are the most significant revenue item for National Hockey League franchises. Ross (1974) states there are important variations amongst National Hockey League franchises' revenues resulting from the lack of gate-splitting arrangements. National Hockey League franchises also lack a major American network TV contract which some other sport leagues use to partially equalize revenues amongst franchises.

Knowledge of the factors influencing attendance at National Hockey League games and an accurate model for predicting this attendance would be of value to a number of groups including governments, the general public, and current or prospective National Hockey League franchise owners.
Original investment decisions and market planning would both improve with further knowledge of the factors influencing National Hockey League attendance. The benefits for current and prospective franchise holders of improved planning and decision-making are obvious.

Governments and the general public probably have the greatest stake in franchise location decisions. Most decisions to locate professional sport franchises involve either direct financial investment or tax concessions by various levels of government. The City of Hamilton recently invested $40 million in a new arena with the hope of attracting a National Hockey League franchise (Windsor Star, Nov. 30, 1985). The City of Pittsburgh, in partnership with a number of corporations, agreed to purchase the Pittsburgh Pirates baseball club for $22 million to keep that franchise in Pittsburgh (Globe and Mail, Oct. 3, 1985). The Calgary Stampeders football club has negotiated free-rent and loan guarantee agreements with the City of Calgary and the Province of Alberta (Windsor Star, Feb. 13, 1986). These are just a few examples of public stakes in the professional sport business.

The basic reason for the involvement of governments in the professional sport industry is the belief that these businesses contribute economically to
the community. These economic contributions can be either by the trade generated through the operation of the sport franchise or by the increased status a community gains by having a professional sport team which in turn may attract other businesses. Governments may also become involved in the professional sport industry to increase the prestige of their communities, which is of importance to the citizens.

According to Foschio (1976), governments are pressured to obtain sport franchises indirectly by two groups, the media and private businesses. These two groups attempt to change public opinion regarding professional sport franchises with the hope that the public will encourage the government to work towards obtaining a franchise. Motivating the media and private businesses are the financial benefits of this new business activity.

Johnson (1977) outlines four major criteria which justify professional sports as a legitimate public concern. These criteria are: 1) the monopoly position of professional sport franchises, 2) protection of athlete's legal rights, 3) protection of the public's legal rights, and 4) direct government administration of some sports. Johnson also mentions that sport has a significant impact on the values of a community, especially its youth. Another situation he claims justifies the sport
business as a public policy concern is the perceived economic benefits to a community of having a professional sport team. Johnson points out that these benefits may only be perceived, and that there is very little documentation of benefits having accrued to cities.

Rosentraub and Nunn (1978) studied two Texas suburbs, Arlington and Irving, which both recently attracted professional sport franchises. The researchers looked at the financial investments the cities made in stadiums, parking and roads and tried to determine whether these cities obtained adequate returns on their investments. Their conclusion was that it is very difficult for suburban cities to recover the economic benefits of their investment in the professional sport business.

Given the economic consequences of poor investments in the professional sport business, there is a need to understand the factors which lead to success in this industry.

Statement of Problem

Listed below are the major issues considered in this current study. 1) What are the factors that influence National Hockey League attendance? 2) How
much do each of these factors influence attendance?

3) Can a mathematical model be developed to predict National Hockey League attendance? 4a) What proportion of attendance is based upon team factors and b) what proportion is based upon franchise location factors? 5a) According to this model, what would be the predicted attendance of a franchise located in Saskatoon, Saskatchewan and b) what other factors would influence attendance of a franchise located in Saskatoon, Saskatchewan?

Definition of Terms

cartel—an organization of producers designed to eliminate competition among its members, usually by restricting output (Lipsey, Purvis and Steiner, 1985)

community—a group of people living in the same place with common interests and standards

complementary products—commodities that tend to be used jointly with each other (Lipsey, Purvis and Steiner, 1985)

firm—the unit that employs factors of production to produce commodities that it sells to other firms, to households and to governments (Lipsey, Purvis and Steiner, 1985)

franchise—a contractual arrangement with a central body
granting the right to market its product or service, in a specific manner, within a defined area.

industry—a group of firms that sells a well-defined product, or closely related set of products (Lipsey, Purvis, and Steiner, 1985).

price-index—the average ticket price of a franchise divided by the average ticket price of the entire league.

price-indexed attendance—the number of actual customers a franchise has multiplied by the franchise's price-index.

R²—coefficient of determination—variation in dependent variable explained by model, divided by total variation in dependent variable.

residual value—the difference between the real attendance and the predicted attendance based upon a multiple regression model.

substitute products—commodities that can satisfy the same needs or desires.
CHAPTER II
REVIEW OF LITERATURE

In order to understand the factors influencing National Hockey League attendance the professional team sport industry must also be understood. Most of the literature focuses on football, basketball and baseball in the United States although there is literature dealing with other sports and other countries (Dabscheck, 1975; Hart, Hutton and Sharot, 1975; Rivett, 1975).

Industry Analysis

The National Hockey League is an unincorporated non-profit association (Barnes, 1983). Professional sport teams and leagues constitute a unique business structure. According to Dworkin (1981), teams in a professional sport league are both an industry and a single business in the eyes of the law.

The reason that teams have chosen to organize into scheduled leagues, rather than operating as independent exhibitors, is the tension created by relationships between teams. Bryant et al (1982) showed that contests between opponents who had past, present and future relationships caused fans to find the matches more
enjoyable, exciting and interesting than matches where no relationship existed between the two opponents.

Markham and Teplitz (1981) found five distinctive features of professional team sports which are not found in other businesses. The game, which is the product, is a joint effort of two firms. Secondly, the quality of the product is not determined solely by individual firms but also by the league as a whole. The closeness of the league standings affects the quality of the product and these standings are a result of all participating firms. The third distinctive characteristic of professional sport leagues is that these leagues have to control entry into the cartel. Fourthly, usually most firms within a league do not compete with each other for customers. The vast distances between most franchise locations means that firms do not engage in price competition for customers with other firms in the league. The price competition that professional sport league firms do face is from other businesses in the leisure and recreation market. The fifth distinctive characteristic is that professional sport league firms do not always operate in a manner consistent with a profit-maximizing model. Examples of this behaviour include continuing to remain in business season after season operating at a loss, as the Pittsburgh Penguins do (Moody, 1985), and failure to
raise ticket prices when in a consistent sell-out position as the Calgary Flames franchise does.

The question, "Are professional sport team owners profit oriented?", has been raised by several researchers. Vamplew (1982) found that owners of Scottish gate-money football teams were primarily utility-maximizers rather than profit-maximizers. A utility-maximizing organization is one which derives its goal satisfaction from something other than profit. Clubs which put priority on winning games and championships over making profits would be considered utility-maximizers. This conclusion was based upon operating decisions made by owners in both the labour market and the product market. The ownership of major Scottish football clubs took the form of shareholders. The upper-classes were over-represented in terms of membership according to Vamplew (1981). The over-representation of wealthier individuals may explain ownership's willingness to accept less than maximum profit levels.

The issue of the motives of North American professional sport team owners is less clear than the European case. Brower (1977) attaches several motives other than profit to North American professional sport team owners including fun, ego and recognition. There is a level of return which is less than the market rate
of return that is acceptable to owners according to Davenport (1969). The difference between the two rates of return is made up for by what he refers to as "psychic income".

Gebhard (1975) concludes that current scheduling practices of professional sport leagues are inconsistent with profit-maximization. This conclusion is based upon equal number of home games scheduled for each league member despite differences in marginal revenues of league members. He believes that a profit-maximizing organization would vary the number of home games to take advantage of higher marginal revenues available. This conclusion ignores a basic tenet of sport which is fairness of competition. There is a perceived benefit to playing at one's home site which, in the interest of fairness, is normally allocated on an equal basis. Attendance may actually decline as a reaction to perceived unfairness resulting from unequal number of home games.

Miller (1965), through empirical studies of professional football and baseball, found that not all owners were profit-maximizers. He also concluded that although the professional spectator sport industry is not perfectly competitive, it does provide higher quality production by all firms than would exist under a more competitive situation. Competition in the
labour market, for example, would lead to the teams in the largest market areas owning the playing rights of most of the top players. This inequality of team talent would lead to less uncertainty in game outcomes which is a major factor in product quality.

Jones (1976) study of the economics of the National Hockey League and World Hockey Association found behaviour consistent with profit-maximization models. The founding of the World Hockey Association and the expansion of the National Hockey League can both be explained by a desire by team owners to maximize profits.

Demmert (1973) found that profit-maximization appears to be the goal of individual firms in the professional sport leagues of North America. He also concluded that profits of individual firms could increase through revenue sharing arrangements or divisions of total league profits. Baseball, in particular, could enter into further collective action since it enjoys exemptions from anti-trust laws.

Ross (1974) concluded, based upon ticket prices for professional sport team games, that behaviour in the National Football League, Major League Baseball, the National Basketball Association and the National Hockey League was consistent with profit-maximizing goals.

El Hadiri and Quirk (1971), in studies of
equalization of player talent concluded that current rules for player movement do not violate the assumption of profit-maximization as the primary goal.

Although these studies show owners of North American professional sport franchises have tended to operate in a profit-maximizing manner, none of them preclude the possibility of an owner participating in a league operation without profit-maximization as a goal. This means that a franchise could be located in a city which did not possess the characteristics necessary for sufficient attendance if the owner had goals other than profit. One possible example of this is an owner who derives "psychic income" from bringing a major professional sport team to a smaller city.

Owners of professional sports teams may be willing to operate their franchises at a loss if other business goals are being met. McCabe (1986) offers the Toronto Blue Jays as an example of a franchise operating at a loss but the owners realizing financial benefits. Part of the ownership of the Toronto Blue Jays participate for the advertising tool the franchise provides while another part of the ownership participate for the tax advantages the franchise provides.

Equalization of playing talent is another major issue in the professional sport team industry.
Closeness of competition plays a significant role in the profitability of teams and leagues.

Dabscheck (1975), in a study of Australian football, concluded that restrictive practices of player movement do not lead to equality of competition. These practices lead to reduced player salaries but top players continue to be transferred to the wealthiest franchises. Dabscheck suggests that the answer to differences in wealth between clubs be solved by pooling of revenue.

Sloane (1976b) notes, regarding Dabscheck (1975), that with complete revenue-sharing arrangements, effect profit-maximizers will try to reduce costs since they have little opportunity to raise revenues. One of the primary ways to reduce costs is to hire less qualified athletes which will reduce the overall quality of performance in a league.

Dabscheck (1976) responded to the criticism by Sloane (1976) by stating that still no reason had been offered as to why players' salaries should be reduced by restrictive practices which do not improve the equality of competition in sport.

Daymont (1975) discovered, through empirical testing of all four major professional sports in North America, that restrictive practices of player movement do not lead to competitive equality. He concluded that
the same factor, value to team owners, determines player distribution in either the restricted or competitive market.

Canes (1970) concluded that current contractual restrictions of player movement are socially efficient. Social efficiency is a way of describing an allocation of resources such that the well-being of one consumer cannot be increased without decreasing the well-being of another consumer (Stigum and Stigum, 1968). Elimination of current contractual restrictions would lead to team owners committing more resources to producing team quality than is socially efficient.

Quirk (1973) focuses on the market size as the primary factor in franchise relocation. He indicates that, in spite of practices restricting player movement, the higher revenue potential franchises will accumulate the top talent. Smaller market franchises tend to move more often than larger market franchises according to his study. He speculates that leagues use the movement of franchises to block the formation of rival leagues. He also suggests that moving a franchise to a small market, which in the long-run will not be able to support the franchise, can be an effective strategy because of the "honeymoon effect". The "honeymoon effect" is a term for the high initial interest in the market which does not remain in the
long term.

Rathmell (1974) considers professional spectator sports to serve higher-level needs and therefore be less price-sensitive than most other services. Another factor making spectator sports less price-sensitive is that they are services which are non-standardized and, therefore, they are very difficult to compare in terms of price.

Pricing decisions in the professional team sport industry are based upon a number of factors according to Heilman and Wendling (1976). In setting prices, to maximize profit, parking and concession agreements, media contracts and ownership or rental of the sport facility must be accounted for. The researchers suggest that, depending on TV contracts, attendance may not be an accurate indicator of franchise success. The United States Congress passed a law in 1973 which has become known as the "72 hour blackout rule". This law made it illegal to blackout the TV coverage of a National Football League game in the city the game is being played if the game is sold-out 72 hours prior to the game. This led to radio broadcasters offering conditional contracts which paid more to teams when TV coverage did not take place. Under the terms of a conditional radio contract it may be to a franchise's advantage to set prices high enough that a sell-out
does not occur.

Neale (1964) discusses several phenomena unique to marketing of sport as compared to marketing of other services. The desirability of a public perception of opposition firms being strong is a feature unique to the marketing of sport. Sport also depends more heavily than almost any other business on free advertising from newspapers.

Hockey is unique among the four major professional sport leagues in North America due to one-third of franchises being outside of the United States. Marshall (1982) concludes that cost of living differences, tax differences and the Canadian-American dollar exchange rate result in the National Hockey League operating differently than other sport leagues. The greatest difference in operations occurs in the labour market where the National Hockey League has stronger restrictions on player movement. These restrictions exist, in part, to limit the flow of free-agents to the American franchises since these franchises have financial advantages over the Canadian franchises.

Factors Influencing Attendance

Population has been shown to be an important
variable in predicting a franchise's attendance. Demmert (1973) found population to be a significant predictor in his study of professional baseball. Noll (1974), and Noll and Okner (1973) found population to be a significant factor in football attendance and basketball attendance respectively. Hart, Hutton and Sharot (1975) studied English First Division soccer clubs and found population strongly related to attendance.

Geddert (1984) found that derived market area populations were only marginally superior to standard area populations in the prediction of National Hockey League attendance. He derived the market areas for his study by surveying public relations directors of the National Hockey League teams and asking them to indicate the area which would encompass the homes of ninety-five percent of their season-ticket holders. The area used when the model was applied to the case of Saskatoon was derived by looking at requests for tickets for a proposed National Hockey League team in Saskatoon. The validity of this measurement is questionable since no financial commitment was actually made.

The number of star players on a professional sport team has been shown to increase attendance at games. Noll and Okner (1973) found that the number of stars was
a significant factor in professional basketball attendance. Thomas and Jolson (1979) found that key players were a component of demand for Major League Baseball games. Parratt (1985) and Caddert (1984) found the number of stars on a team to significantly increase attendance at North American Soccer League and National Hockey League games respectively.

Mitchner (1983) studied the effect of several changes, developments and events on the marketing of the National Hockey League. A number of the factors that he found had affected the marketing strategies of various franchises were related to player recognition. These factors included more American college players, younger players and Wayne Gretzky.

The quality of the local franchise affects attendance, as does the quality of the visiting team. Thomas and Jolson (1979) studied Major League Baseball and concluded that team performance was seen as a positive influence on attendance. Granzin and Jensen (1984) studied the National Basketball Association and divided the market into three groups; low, medium and high attenders. They found significant differences between the three groups in terms of importance of having a winning team. Miller (1965) found that changes in won/lost percentage was the greatest single factor in demand for Major League
Baseball games. Numerous other studies such as Noll and Okner (1973), Noll (1974) and Demmert (1973) have found team quality a significant factor in predicting attendance.

Hart, Hutton and Sharot (1975), in their study of professional soccer in England, found team performance to have some effect on attendance but concluded that their model underestimated the importance of team performance.

In a study of National Football League franchise revenues it was found that results on the playing field did not always determine results in revenue for National Football League teams ("Losers in NFL", 1985). The top ten revenue earning franchises included four teams with losing records on the playing field. The league champion San Francisco 49ers, on the other hand, finished 20th out of 28 franchises in terms of revenue earned.

Competition from other sport franchises located within a city has been shown to affect attendance of professional sport franchises. Noll and Okner (1973) found that basketball attendance was significantly reduced by the presence of every additional sport franchise within a given city. Demmert (1973) studied Major League Baseball and divided competition into two categories; direct or baseball competition and indirect.
or non-baseball professional sport. Both of these types of competition proved to be significant in the reduction of attendance. Noll (1974) found hockey attendance reduced by competition from all other major professional sports.

Andreasen and Belk (1980) studied factors influencing attendance at the performing arts. In this study, using Q factor analysis, the researchers divided the population into six groups based upon leisure life-style characteristics. One of these groups they labeled as the Active Sports Enthusiast. This group was found to have negative attitudes to a variety of cultural events including the symphony and the theatre. This study would seem to indicate that professional sport teams face more competition from other professional sport businesses than from certain other entertainment businesses.

Sofranko and Nolan (1972) examined the relationship between childhood sport participation and adult sport values. They found that early life experiences with a particular sport increased the value with which that same sport was held in adult life. Chorbajian (1978) also found adult values of sport related to early athletic experiences. These studies would seem to indicate that areas which produce more professional athletes in a particular sport, due to increased
participation and superior coaching, would have higher levels of adult interest in that same sport.

Rooney (1969) looked at differences in regional player development of football players as more than simply, regional differences in football interest. Rooney offered other possible explanations for differences in player development amongst regions. Differences in ethnic and racial makeup, occupational structure and climate could all affect a community's development of professional athletes.

Parrat (1985) studied North American Soccer League attendance and found that differences in ethnic populations of communities affects soccer attendance. This was an important finding as it showed that communities are composed differently in terms of values of sport.

Geddart (1984) studied National Hockey League attendance and found significant regional differences in hockey interest. Areas that he described as having high hockey interest were; Saskatchewan, Prince Edward Island, Manitoba and Alberta. The areas of the United States which had the highest interest in hockey were; Rhode Island, Minnesota, Massachusetts, New Hampshire and Connecticut.

Economic considerations have to be of prime importance in franchise location decisions. Interest
in the product would not be sufficient grounds for locating a business. There must be a large enough group of people with the necessary resources to purchase the product.

Miller (1965) found that changes in disposable income were significant in determining demand for Major League Baseball games. He also found that income played a larger role in determining minor league baseball attendance than Major League Baseball attendance.

Granzen and Jensen (1984) found that economic variables such as home ownership and educational level to be significant factors in segmenting the professional basketball market into low, medium and high attenders.

Noll and Okner (1973) found per capita income to affect attendance at professional basketball games. Wise and Cox (1978) found per capita income related to Major League Baseball attendance. These studies differ however in that one sport, basketball, gains from increased income levels while the other, baseball, has more interest amongst lower income groups.

Jozsa (1977) concluded that personal income levels were related to probability of franchise relocation with teams in higher income areas less likely to be moved to other locations.
Studies of professional sport league attendance have not examined the influence of the location of corporate headquarters. However, studies of corporate headquarters provide a basis for the belief that there should be a relationship between sport attendance and the location of corporate headquarters (Fred, 1977 and Semple, 1977). There are two ways in which the location of corporate headquarters could influence sport attendance; 1) by affecting the general economic climate of a city and 2) by affecting the distribution of income in the economy. Fred (1977) found that corporate activity significantly affects the economic control of the cities in which corporations are headquartered. According to Semple (1977), the location of corporations can affect regional inequality of income distribution through high incomes paid to executives. The influence of corporate headquarters is more than simply the affect of city size. As Semple and Smith (1981) noted, it is not necessarily the largest cities which exert the most corporate control within Canada.

In his study of attendance at league football matches in England and Wales, Rivett (1975) hypothesized that the following factors influence attendance; 1) population, 2) other sports, 3) nearness and attractiveness of neighbouring teams, 4) facilities,
5) admission prices, 6) past performance and 7) current performance. The model Rivett developed is not applicable to North American professional sport leagues because of its inclusion of visiting team supporters. Most franchises in North American professional sport leagues are too geographically separated to allow significant visiting team support. Rivett also discusses the relationship between attendance and team success, concluding that they influence each other. Current attendance is affected by current team success. This current attendance affects future team quality because the revenue generated by attendance determines the amount of money the franchise has available to spend in the labour market. Rivett explains that this circular effect should not be included in models of attendance since there is often a very weak relationship between the amount of money spent in the labour market and the quality of the players employed.

There have been several major studies which have formulated models for predicting professional sport attendance. Demmert(1973) and Noll(1974) were the first significant models predicting attendance. Demmert(1973) analyzed Major League Baseball attendance. Noll (1974) examined professional football, baseball and basketball attendance extensively and he also looked at professional hockey
distribution although not as thoroughly. Noll's study of hockey attendance was less extensive than his studies of other sports because he was not as familiar with the game of hockey and its league operations. Both of these authors tested a long list of independent variables to arrive at the shorter list of significant factors influencing attendance. Studies done since those of Demmer (1973) and Noll (1974) have used the variables the two authors found significant in predicting attendance as a foundation and attempted to test the significance of another variable. Parratt (1985) examined the effect of a particular market segment using the variable ethnic population. Geddert (1984) examined the effect of regional differences in hockey interest.
CHAPTER III

METHODOLOGY

This evaluation of Saskatoon as a National Hockey League franchise location involves two stages of analysis; one quantitative and the other qualitative. Phase I involves the examination of National Hockey League attendance of existing franchises to derive a mathematical model for predicting attendance. Phase I also includes the application of the model developed to predict attendance for a franchise located in Saskatoon. Phase II involves the adjustment of the prediction from Phase I based upon an analysis of community values related to sport.

Phase I-Multiple Regression Model

The statistical procedure that was used in this analysis of National Hockey League attendance was step-wise multiple regression. Regression analysis was selected as it allows both an understanding of the factors influencing the dependent variable as well as allowing predictions of the dependent variable. The step-wise approach to multiple regression was chosen because it progressively determines the best combinations of variables to predict the dependent
variable. This is important in business analysis because it allows the deletion of the least important independent variables, which in turn allows for possible savings in information collection costs.

The alpha level chosen for this study was .05. This level was selected for three reasons. Firstly, the alpha level selection involves a trade-off between Type I and Type II errors. Selecting a higher alpha level would decrease the probability of a Type II error but would increase the probability of a Type I error. However, selecting a lower alpha level would decrease the probability of a Type I error but would increase the probability of a Type II error. Secondly, the .05 alpha level is the accepted standard level for business research. Thirdly, this alpha level will allow comparisons with the results of Noll(1974) and Geddert(1984) both of whom used the .05 alpha level.

Copeland and Weston(1980) warn that the greatest danger in the use of regression models is failure to select variables based upon a sound theoretical framework. Important explanatory variables which are not included in the formulation of a model can lead to biased estimates of the variables which are included.
Dependent Variables

Equations were generated using two different dependent variables, actual attendance and price-indexed attendance. The measurement of these variables is described below.

Actual Attendance

This variable was measured by total ticket sales per game. This information was collected from The Hockey News publication. The accuracy of these figures was checked with information collected directly from the National Hockey League franchises. The actual attendance for each National Hockey League franchise can be found in Appendix 1.

Price-Indexed Attendance

This variable was included to account for the differences in ticket prices amongst National Hockey League franchises. A price-index was formulated by determining the average ticket price for the league, and then dividing the average ticket price for each franchise by the league average. The price-index factor for each franchise was multiplied by the
franchise's actual attendance. The resulting product is the price-indexed attendance.

Price-indexing attendance was used to partially compensate for the limitation that stadium capacity imposes upon attendance. The few franchises in the National Hockey League that do sell-out on a consistent basis cannot increase their revenue by increased attendance, but they can increase revenue by raising ticket prices. The franchises which have consistently sold-out in recent years are; Edmonton, Calgary, Toronto and the New York Rangers. Edmonton and Calgary lead the league in average ticket price while the New York Rangers are slightly above the league average and Toronto is slightly below the league average. The price-indices for each franchise are shown in Appendix 2. The price-indexed attendance for each franchise can be found in Appendix 3.

Independent Variables

The effects of eight independent variables were examined. The description and measurement of these variables is detailed below.
Population

The independent variable Population was included to measure the effect that the number of people in the market area has upon attendance. According to Hart, Hutton and Sharot (1975) decisions as to the size of market areas are, by their nature, arbitrary. In order to minimize the effects of these arbitrary decisions a standard definition of population areas was used. Populations for the American franchises were measured based upon the Standard Metropolitan Statistical Areas. The Canadian equivalent of these areas, the Census Metropolitan Areas, were used for Canadian franchises. Metropolitan populations for each franchise location are shown in Appendix 4.

The heavily overlapping market areas of the New York Ranger franchise, the New York Islander franchise and the New Jersey Devils franchise were dealt with by dividing the total population for these areas amongst the three franchises. This decision assumes that fan loyalties are equal amongst the three area franchises.

Stars

The independent variable Stars was included to
account for the effects of individual star players on team attendance. Quantifying the special characteristics of individual players which cause fan interest is very difficult. The special characteristics of players include those directly related to performance but also include personality factors unrelated to hockey skills. However, in order to objectively measure the Stars variable, the focus must be limited to hockey skills. In this study a first all-star team selection was valued at two points while a second all-star team selection was worth one point. Winning any one of the following National Hockey League awards; the Hart Trophy, the Art Ross Trophy, the Calder Trophy, the Vezina Trophy, the Norris Trophy, the Lady Byng Trophy and the Selke Trophy, was valued at one point. Since the Stars variable is a franchise measurement each team's players star points were added for a team total. Appendix 5 shows the number of points each franchise attained on the Star Index.

Team Quality

The independent variable Team Quality must be quantified in an objective manner. The choice appears to be between winning percentage and league or
divisional standing. In this study winning percentage was selected to measure the Team Quality variable. The use of a ratio scale, such as winning percentage, provides more information than the use of an ordinal scale, such as league standing. The use of a ratio scale will account for the fact that the difference between the first and second place teams is not necessarily the same as the difference between the second and the third place teams. The use of winning percentage as a measure for the Team Quality variable is superior to the use of divisional standing because of inequality or imbalances between divisions. There can be considerable differences between the first place teams in each division which would not be accounted for by using divisional standing as the measure of the Team Quality variable. The winning percentages for each National Hockey League franchise are shown in Appendix 6.

Play-Off Contention

In addition to the variable Team Quality, another measure of team performance was tested. This measure, Play-Off Contention, was included to determine whether there was a minimum level of performance below which
fans consider unacceptable. This variable was included as a dummy variable, with teams not making the play-offs being assigned the value 1 and teams making the play-offs being assigned the value 0. Teams which did not make the National Hockey League play-offs are shown in Appendix 7.

Sport Competition from Other Leagues

The regular season of the National Hockey League lasts six months. During some of those six months other professional sport leagues are also in operation. The Sport Competition variable was used to measure the effects of these competing businesses. The Sport Competition variable was the sum of the proportions of the National Hockey League schedule that a Major League Baseball, National Football League, Canadian Football League or National Basketball Association team was also playing regular season games in a given city. In this study a National Basketball Association franchise was valued at 1.0, a National Football League franchise was valued at .5, a Canadian Football League franchise was valued at .2 and a Major League Baseball franchise was valued at .1. Sport Competition values for each franchise are shown in Appendix 8.
The two New York franchises and the New Jersey franchise all appear to face business competition from the same sport teams. Since each of these other sport franchises provides an additional alternative for fans of all teams, each National Hockey League franchise located in the New York metropolitan area will be awarded the Sport Competition value of the entire New York metropolitan area.

Interest Index

The Interest Index variable is included to account for regional differences in interest in hockey. There are numerous possible measures of interest in hockey. Geddert (1984) used three factors to measure regional hockey interest; the number of players in the NHL born in a region, the number of junior and college hockey teams in a region, and the number of copies of The Hockey News sold in a region. This study only used the birthplace of National Hockey League players as a measure of hockey interest.

Number of copies of The Hockey News sold in a region was not used as a measure of hockey interest because a newspaper reporting on professional hockey may be a substitute for hockey attendance as well as a complement to hockey attendance. It is not possible to
determine what proportion of The Hockey News sales is as a substitute and what proportion is as a complement. In deriving a multiple regression equation to predict attendance, the inclusion of a variable which is a substitute product and a complementary product would result in an equation which could not be applied beyond the cases used in the equation's derivation. Higher sales of The Hockey News correlated with higher attendance in a study by Geddert(1984). However, in cities without National Hockey League franchises there is a larger proportion of sales of The Hockey News which are as a substitute product. These sales may decrease if a National Hockey League franchise was located in those cities. Therefore this measure of hockey interest cannot be used in deriving a model which is to be applied to cities without a current National Hockey League franchise.

The number of junior and college teams in a region, used by Geddert(1984) as a measure of hockey interest, also measures population distribution. Two regions with equal populations and hockey interest will differ in the number of junior and college teams depending on how the populations are distributed. A region with a large city and no smaller communities will likely have one city junior team and one university which will have a hockey team. Another
region with several smaller cities will have several junior teams and a team for each university in the area.

The Interest Index selected for this study was based upon the number of National Hockey League players who were born in a given area. In order to account for the fact that regions differ in their populations, the number of players born in an area was divided by the population of that area. The per capita contribution of National Hockey League players by area were converted to an indexed value with the top contributor being assigned the value 100.00. The remaining areas had their per capita contribution of players to the National Hockey League divided by the contribution of the top team to derive their values.

The areas that were used were Canadian provinces and American states. The values for each franchise were determined by the province or state in which the franchise is located. Information as to the birthplace of National Hockey League players came from the official guidebook of the National Hockey League. The Interest Index values for each franchise are shown in Appendix 9.
Average Income

The Average Income variable was included to account for the economic or purchasing power differences of individuals in the sites being studied. The Average Income variable was measured by the average family income of the Standard Metropolitan Statistical Areas and the Census Metropolitan Areas.

The effect of inflation on income levels was removed by converting all income measurements to 1983 dollars using national consumer price indices. Canadian incomes were deflated by 5.35% for 1984 incomes and 9.20% for 1985 incomes. American income levels were deflated by 4.31% for 1984 incomes and 8.03% for 1985 incomes. The average incomes for each franchise location are shown in Appendix 10. These values are all reported in 1983 dollars.

Corporate Headquarters

The Corporate Headquarters variable was included to measure the effects of corporations on attendance. Since corporations are major purchasers of high priced season tickets, their existence in a city should help predict attendance at National Hockey League games.
This variable was measured by the number of major corporations located in each franchise site. For American franchises a major corporation was defined as one on the Fortune 500 list. A major Canadian corporation was defined as one on the Financial Post 500 list which had a sales level greater than or equal to the 500th company on the Fortune 500 list. The exchange rate for Canadian and American dollars was not taken into account when determining equivalent sales levels of the major corporations. Since tickets are purchased in the home currency, corporate sales level should also be measured in the home currency. The numbers of major corporate headquarters in each franchise location are shown in Appendix II.

Two equations were developed and a selection of a best model was made based upon correlation coefficients of the respective equations. One of the equations was derived using actual attendance as the dependent variable and one of the equations was derived using price-indexed attendance as the dependent variable.

Delimitations

1. Model was formulated based upon three National Hockey League seasons: 1982-1983, 1983-1984, and

2. Model was formulated based upon National Hockey League franchises which existed during those seasons.

3. Model was based upon the regular season of the National Hockey League and not its play-offs.

Limitations

1. Canadian and American franchises sell tickets in different currencies.

2. Canadian and American income figures are in different currencies.

3. Stadium capacities impose an upper limit upon attendance.

4. Assumptions of accurate reporting of paid attendance by individual franchises.

5. Calgary franchise had not moved into their permanent arena in the 1982-1983 season so this data could not be included in this study.

Hypotheses

H1: Population will have a significant effect on
attendance

Ho-1 Population will have no significant effect on attendance

Ha-2 Number of Stars will have a significant effect on attendance

Ho-2 Number of Stars will have no significant effect on attendance

Ha-3 Team Quality will have a significant effect on attendance

Ho-3 Team Quality will have no significant effect on attendance

Ha-4 Play-Off Contention will have a significant effect on attendance

Ho-4 Play-Off Contention will have no significant effect on attendance

Ha-5 Competing Sport Franchises will have a significant effect on attendance

Ho-5 Competing Sport Franchises will have no significant effect on attendance

Ha-6 Hockey Interest will have a significant effect on attendance
Ho-6 Hockey Interest will have no significant effect on attendance

Ho-7 Average Income will have a significant effect on attendance
Ho-7 Average Income will have no significant effect on attendance

Ha-8 Number of Corporate Head Offices will have a significant effect on attendance
Ho-8 Number of Corporate Head Offices will have no significant effect on attendance

Phase II - Community Value Analysis

The multiple regression model developed explains a certain proportion of the variation in National Hockey League attendance. The remaining proportion of the variation is due to factors not in the model but also important in predicting attendance. Prediction of attendance was therefore a two step process. The first step was to substitute the appropriate information, regarding the location under consideration, into the multiple regression equation. The second step was to additionally consider factors specific to the community being examined. Additional information was drawn
through examining the particular community's values towards sport, attendance and business.

The examination of community values was done through comparisons and contrasts with other community values. The community values can be compared and contrasted with two sets of values. The first set of these values are the values of the same community regarding the different concepts and issues which may be related to the values being studied. The second set of these values are values of another community regarding the same concepts and issues being examined.

Value comparisons and contrasts were examined through identifying the underlying assumptions upon which the values are based. Assumptions should be evaluated as to their validity, relevance and importance to the appropriate values (Browne and Keeley, 1981).

A systematic approach to evaluating the relative strengths and weaknesses of comparisons and contrasts has been developed by Woodhouse (1980). The criteria involved include:

1. The number of samples used—the more the better, up to a point.
2. The number and variety of characteristics that appear to be similar in the samples.
3. The strength of the conclusion relative to the
4. The relevance of the characteristics cited in premises to the conclusion drawn.

5. The number of differences among the samples cited in the premises—usually, the greater the number, the stronger the conclusion.

6. The number of differences between the samples cited in the premises and the instance cited in the conclusion—usually, the greater the number, the weaker the conclusion (p. 45)

Community Values Analyzed

There are factors which cannot be added to a general model for predicting sport attendance because these factors are specific to a single community. Factors which may be considered specific to the location of a National Hockey League franchise in Saskatoon were analyzed and included: 1) the Saskatchewan Roughriders attendance, 2) the history of co-operative and community enterprise in Saskatchewan, 3) the history of hockey in Saskatchewan, and 4) the concepts of time and distance as valued by Saskatchewan citizens. These factors were examined through several western Canada and Saskatchewan sport histories as well as studies of community values.
CHAPTER IV
RESULTS AND DISCUSSION
Phase I Analysis

The model which was developed to predict actual attendance was able to account for 66% of the variation in actual attendance. The results of Model 1 are shown in Table I. The model which was developed to predict price-indexed attendance was able to explain 74% of the variation in price-indexed attendance. The results of Model 2 are shown in Table II.

Four independent variables were found to be significant in the prediction of actual attendance; 1) Play-off Contention, 2) Corporate Headquarters, 3) Team Quality and 4) Interest Index.

Model 1

\[
\text{Actual Attendance} = 9792.50 - 2551.11 \times \text{Play-off Contention} + 70.25 \times \text{Corporate Headquarters} + 6825.55 \times \text{Team Quality} + 12.96 \times \text{Interest Index}
\]

A franchise which does not make the play-offs will
average 2,551 fewer customers per game that season than if that same team had made the play-offs. This factor explained 37% of the variation in National Hockey League actual attendance for the seasons 1982-1983, 1983-1984 and 1984-1985.

For each major corporation headquarters located in the metropolitan area of a franchise an additional 70 fans can be expected. In Model 1 the location of corporate headquarters explained 19% of the variation in the dependent variable.

Team Quality, as measured by winning percentage, explained 6% of the variation in actual attendance for the period studied. A team with a winning percentage of .500 can expect to have an average attendance which 683 customers more than if that same team had a winning percentage of .400.

The variable Interest Index explained 3% of the variation in actual attendance. A franchise's actual attendance would average 13 customers more for each point on the Interest Index. The values on the Interest Index variable ranged from 0, for Philadelphia, Washington, St. Louis, Los Angeles, Hartford and Pittsburgh, to 100, for Toronto, Calgary and Edmonton.

The limiting factor of arena capacity proved to be significant in the analysis of actual attendance. In
approximately 20% of the cases studied the attendance predicted, on the basis of Model 1, was above the capacity of the franchise’s arena. The introduction of an index of ticket prices, accounting for differences in average ticket prices between franchises, was effective in dealing with the limitations imposed by arena capacities. Predictions of price-indexed attendance based upon Model 2 resulted in only two cases in which arena capacity could explain a franchise not attaining its predicted attendance.

Table I. Model 1 Regression Results for Actual Attendance Attendance of 1982-83, 1983-84 and 1984-85 Seasons

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Partial R2</th>
<th>Prob&gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>9792.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Play-Off Contention</td>
<td>-2551.11</td>
<td>.3725</td>
<td>.0002</td>
</tr>
<tr>
<td>Corporate Headquarters</td>
<td>70.25</td>
<td>.1951</td>
<td>.0001</td>
</tr>
<tr>
<td>Team Quality</td>
<td>6825.55</td>
<td>.0592</td>
<td>.0045</td>
</tr>
<tr>
<td>Interest Index</td>
<td>12.96</td>
<td>.0330</td>
<td>.0223</td>
</tr>
<tr>
<td>Model R2</td>
<td>.6597</td>
<td></td>
<td>.0001</td>
</tr>
</tbody>
</table>
Table II. Model 2 Regression Results for Price-Indexed Attendance of 1982-83, 1983-1984 and 1984-85 Seasons

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Partial R2</th>
<th>Prob&gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-990.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>0.7895</td>
<td>0.3235</td>
<td>0.0016</td>
</tr>
<tr>
<td>Play-Off Contention</td>
<td>-2032.27</td>
<td>0.1913</td>
<td>0.0194</td>
</tr>
<tr>
<td>Corporate Headquarters</td>
<td>122.67</td>
<td>0.0912</td>
<td>0.0001</td>
</tr>
<tr>
<td>Interest Index</td>
<td>61.43</td>
<td>0.0329</td>
<td>0.0001</td>
</tr>
<tr>
<td>Interest Index*Population</td>
<td>-0.0270</td>
<td>0.0646</td>
<td>0.0005</td>
</tr>
<tr>
<td>Team Quality</td>
<td>8075.36</td>
<td>0.0349</td>
<td>0.0090</td>
</tr>
</tbody>
</table>

Model R2 = 0.7384
Model 2 is superior to Model 1 for three reasons: 1) price-indexing removed arena capacity limitations, 2) price-indexing attendance more accurately reflects financial positions of teams and 3) the higher explanatory power of the price-indexed attendance model.

Six independent variables were found to be significant in the prediction of price-indexed attendance; 1) Income, 2) Play-off Contention, 3) Corporate Headquarters, 4) Interest Index, 5) interaction between Interest Index and Population and 6) Team Quality.

Model 2

Price-Indexed Attendance =
- 990.67
+ .7895*Income
- 2032.27*Play-off Contention
+ 122.67*Corporate Headquarters
+ 61.43*Interest Index
- .0270*Interest Index*Population
+ 8075.36*Team Quality

Average income in a franchise location was shown to significantly affect price-indexed attendance.
Income differences amongst communities explained 32% of the total variation in price-indexed attendance. A franchise could expect an increase of 790 people per game if the team was located in a city with an average income which was $1000 higher than the current location.

The finding of income as a significant factor in predicting attendance is consistent with Miller (1965), Noll and Okner (1973) and Joza (1977). Noll (1974) found income insignificant as a factor in hockey attendance while Geddert (1984) did not include income in his analysis of hockey attendance. A possible explanation for the finding of Noll (1974) is that his study included data from the original season of the World Hockey Association which had probably not settled into its long-run level of attendance.

Calgary and Edmonton benefitted greatly by having franchises located in cities with high average incomes. Hartford and Washington were the American cities which benefitted most by being located in cities with high average incomes. The Buffalo, St. Louis and Pittsburgh franchises were all hurt by being located in cities with lower average incomes. These three cities all appear to be declining in economic strength relative to other American cities. Boston had a low average income during the first year of this study but appears to be
rising in economic strength.

Play-off contention was shown to be a significant factor in predicting price-indexed attendance. Teams not making the play-offs received 2,032 fewer customers per game if those same teams had made the play-offs. This factor explained 19% of the variation in price-indexed attendance.

The independent variable Play-off Contention is a measure of team performance. The finding of a measure of team performance as a factor in determining attendance is consistent with the findings of Noll (1974), Demmert (1973) and Geddert (1984). This measure of team performance provides a new perspective on the influence of team performance on attendance. The inclusion of the Play-off Contention variable established that there is a minimum acceptable level of performance in the National Hockey League. Teams which perform below this level will lose significant fan support.

The National Hockey League play-off system is the weakest of the major North American professional sport leagues, in that a higher proportion of teams make the play-offs than in the other leagues. Despite the relative ease in making the play-offs in the National Hockey League, the same teams consistently fail to make the play-offs. New Jersey, Pittsburgh and Hartford all
missed the play-offs in each of the three seasons studied and, as a result, lost significant attendance.

The location of corporate headquarters was shown to be a significant factor in predicting price-indexed attendance. This variable explained 9% of the total variation in price-indexed attendance. Each corporate headquarters located in a franchise site increased that team's price-indexed attendance by 123.

Although other studies of professional sport attendance have not tested the impact of corporate headquarters upon attendance, they have shown the importance of the economy to attendance. The finding of corporate headquarters as a significant variable in predicting attendance is also consistent with the views of Pred (1977) as to the importance of corporation headquarters to other organizations within the city.

There was a large variation in the number of major corporations headquartered in different cities. The franchises of Toronto, Montreal, Chicago, New York and New Jersey all had thirty or more major corporations headquartered in their cities. Two franchise sites, Buffalo and Quebec, had no major corporation's headquarters located in their areas. It might be suggested that income and corporate headquarters, both being economic measures, may be highly correlated, but, in this analysis, that was not the case. Edmonton and
Calgary are cities of similar size and with approximately equal average incomes. However, there were 3 major corporations headquartered in Edmonton while there were 18 major corporations headquartered in Calgary.

The Interest Index variable was found to be significant in predicting price-indexed attendance. The Interest Index explained 3% of the variation in price-indexed attendance. Each additional point on the Interest Index will increase the price-indexed attendance by 61 customers.

One point on the Interest Index represents approximately one National Hockey League player born per 5.3 million people. An increase of one player born in Manitoba would raise the Interest Index score for the Winnipeg franchise by 5 points. Toronto would need an additional eight players in the National Hockey League from Ontario to raise its score by 5 points.

The finding of regional interest in hockey as a significant influence upon attendance is consistent with the findings of Geddert(1984). Although using different measures of hockey interest this study and Geddert(1984) have identified similar regions of high hockey interest and low hockey interest. The franchises which benefitted the most from a regional interest in hockey were Toronto, Edmonton and Calgary.
The American franchises that benefitted the most from high hockey interest were Boston and Minnesota.

There appears to be some changes in hockey interest. However, since this study only covered a period of three seasons, it is difficult to identify trends in hockey interest with much certainty. There appears to be a decrease in hockey interest in the province of Quebec and an increase in hockey interest in western Canada. The Boston franchise is located in a region which appears to be growing rapidly in hockey interest, probably as a result of Bobby Orr and his success with the Boston Bruins. This interest in hockey will probably continue to grow, as players born in Massachusetts influence the next generation of children from that area.

The fifth, and most complex, variable to enter Model 2 was the interaction of the Interest Index and Population variables. The characteristic which makes this variable most difficult to explain is the fact that high scores on the Interest Index variable and the Population variable result in lower predictions of attendance. It was hypothesized that higher scores on these variables would result in higher attendance.

The final variable which was found to be significant in predicting price-indexed attendance was Team Quality. This variable explained 3% of the total
variation in price-indexed attendance. A team's price-indexed attendance would increase by 808 if the team were to increase its winning percentage from .500 percentage from .500 to .600.

The finding of team quality as a significant factor in determining attendance is consistent with the results of Noll and Okner (1973), Noll (1974), Dommert (1973), Parratt (1985) and Geddert (1984). These studies all found a linear relationship between attendance and winning percentage. El Hodiri and Quirk (1971) suggest that the relationship is not linear and that the extremes of winning percentage both tend to cause a decrease in attendance. The inclusion of the variable Play-off Contention provides evidence that at the low extreme of winning percentage such a decrease occurs. The lower extreme of winning percentage in this study is below approximately .350 while the upper extreme of winning percentage is above approximately .700. There were really only two cases at the upper extreme of winning percentage, Philadelphia in the 1984-1985 season and Edmonton in the 1983-1984 season. It is not possible to examine the effects of an extremely high winning percentage on Edmonton's attendance since they were sold-out for all three seasons studied. Philadelphia's attendance did increase in the 1984-1985 season but not to the extent
predicted on the basis of a linear relationship between attendance and winning percentage.

Population, sport competition and number of stars on a team were all hypothesized to affect National Hockey League attendance. None of these variables were found to be significant in the prediction of attendance. All three of these variables were found to be significant in the study by Gedert (1984). Reasonable explanations can be offered for these variables not being found significant in the current analysis.

Population did enter Model 2 but only in combination with the Interest Index. Population was found to be a significant factor in attendance in studies by Demmert (1973), Noll and Okner (1973) and Noll (1974). These studies involved sports leagues which were almost entirely located in the United States. The smaller size of Canadian cities reduces the probability of population being a significant factor in predicting attendance in international leagues. The smallest cities with National Hockey League franchises are Quebec, Winnipeg, Calgary and Edmonton. Winnipeg is the only one of these small cities which drew less than the league's average price-indexed attendance. The largest cities with National Hockey League franchises are New York and Los
Angeles. The Los Angeles Kings drew less than the league's average price-indexed attendance. One of the three franchises within the consolidated metropolitan area of New York drew less than the league's average price-indexed attendance.

Sport competition is a factor which has been found to affect sport attendance. Noll (1974) found that the existence of other professional sport franchises within a city reduced baseball attendance. Noll (1974) also found that hockey attendance was reduced by the presence of other professional sport franchises. Gedert (1984) found National Hockey League franchises suffered reduced attendance as a result of the existence of competing professional sport franchises within the same city. These studies do not provide the only view of the relationship between sport competition and attendance.

Noll (1974) explains that there is a paradox in the relationship between sport competition and attendance. It would seem that the addition of a competing sport franchise in a city would reduce attendance at each of the other franchises' games. However, cities with more sport franchises have higher levels of general sports interest and, consequently, higher levels of attendance. Demmert (1973) found evidence consistent with the latter explanation of the relationship between
sport competition and attendance. Demmert found that baseball attendance was higher in cities which had a greater number of franchises of other professional sports. Another explanation for the correlation between high attendance and sport competition is the influence of large populations. Larger populations have been shown to increase attendance in some sports. Cities with larger populations also tend to have a greater number of sport franchises.

Given the conflicting evidence as to the direction of the effect of sport competition on attendance, it is not surprising that this variable was not found to be significant in this study.

There are two probable explanations for the number of stars not being found as a factor in attendance; difficulties in definition and correlation with measures of team performance.

The determination of the star status of a player is a very subjective decision. Several attempts were made to modify the definition of a star player but none of these resulted in the star variable being found significant in predicting attendance. Included in those definitions of star status which were not found to be significant was the scale used by Geddert (1984).

There was a high degree of correlation between the variables Team Quality and Stars. The existence of
high correlation of independent variables is referred to as multicollinearity (Cohen and Cohen, 1983). When conditions such as this exist, the more peripheral variable tends to be excluded from the model. In this case, the number of stars on a team would have to be considered more peripheral than a team's winning percentage as an indication of team performance.

Analysis of Residuals

Residual values indicate the difference between the predicted price-indexed attendance and the real price-indexed attendance. An analysis of these residuals can provide some insights as to the relative strengths and weaknesses of the model developed. Cases where a small residual occurs are examples of the model being effective in predicting attendance. Large residuals indicate that the model has not been effective in dealing with those specific cases.

Low residual values were observed for the following franchises; Boston, Buffalo, Calgary, Chicago, Minnesota, Montreal, New Jersey, New York Islanders, New York Rangers, Philadelphia, Quebec, St. Louis, Toronto and Vancouver. Larger residuals were observed for franchises in; Detroit, Edmonton, Hartford, Los Angeles, Pittsburgh, Washington and
Winnipeg. Reasonable explanations can be offered for these franchises achieving price-indexed attendances different than their predicted price-indexed attendances.

Detroit drew an average of 2,246 higher than its predicted attendance. This positive residual has more than one possible explanation. One possible factor in Detroit's success is the city's long hockey tradition. Another possible explanation for the positive residual values is that the measurement of the influence of corporate headquarters undervalues Detroit's corporate community. In this study franchise cities were only evaluated as to the number of major corporate headquarters not the size of those corporations. Detroit was the location of the corporate headquarters of two of the five largest North American corporations which is more than all other cities except New York. The positive residual values are probably a result of both the larger size of the Detroit headquartered corporations and the long hockey history.

Edmonton received a price-indexed attendance which was 2,135 higher than their predicted attendance. The most probable explanation for these additional customers for the Edmonton Oiler franchise is Wayne Gretzky. The difficulties in defining star status are certainly not an issue in the case of Wayne Gretzky.
Since joining the National Hockey League in 1979-1980, Wayne Gretzky has won the Hart Trophy as the league's most valuable player seven times. Mitchener (1983) found Wayne Gretzky to be an important factor in National Hockey League marketing plans. Although the star variable was not found to be significant in the current study, there is little doubt that Edmonton's superstar contributed to their positive residual values.

Hartford is the third franchise which received considerably higher attendance than predicted on the basis of Model 2. During the three seasons covered in this study, Hartford averaged 2,370 more customers than predicted. The most probable explanation for these positive residual values is that the corporate community in Hartford is different than those of other cities in the study. The definition of a major corporation in this study was based upon Fortune 500 and Financial Post 500 lists. These are lists of the largest industrial corporations in the United States and Canada. Hartford's corporate community has a higher proportion of financial corporations than other cities in the study. However, financial corporations were not included in the definition of major corporations. An adjustment in the number of major corporations in Hartford, to reflect the difference in
the corporate community, would mean an increase in predicted price-indexed attendance. A higher predicted attendance would mean that the residual values for the Hartford would be smaller, indicating that the model was more effective in predicting attendance.

Winnipeg's negative residual values, averaging 3,805 customers per game, are probably a result of the strong interest in the Winnipeg Blue Bombers football team and the inconsistent play of the Winnipeg Jets. While most Canadian Football League franchises have been experiencing attendance problems, the Winnipeg franchise has been experiencing a very high level of fan support (Globe and Mail, Nov. 8, 1985). The Winnipeg Jets finished sixth, second, fourth, fourth, and second in their division between 1980 and 1985. This inconsistency in performance makes it more difficult for fans to arrive at expectations of team performance. These factors are not significant enough to explain all of the negative residual values observed for the Winnipeg franchise, although they do explain some of the difference between the predicted price-indexed attendance and the real price-indexed attendance.

The explanations for the Los Angeles franchise's negative residual values are probably the lack of a hockey history and the high winter temperatures. There are very few opportunities for Californians to even
acquaint themselves with the skill of ice skating so certain aspects of the game of hockey may not be fully appreciated.

The Pittsburgh franchise's attendance problems are probably related to two factors: a long history of poor performance and a poor city economy. Since joining the National Hockey League for the 1967-1968 season, the Pittsburgh franchise has had a winning record only four times. This poor performance must be considered a major factor in the negative residual values which averaged 2,939. The Corporate Headquarters variable may have over-estimated the health of Pittsburgh's corporate community. During the three seasons covered by this study Pittsburgh did not lose a significant number of major corporate headquarters. However, the position of Pittsburgh's corporations on the Fortune 500 lists fell each year of the study. The Pittsburgh franchise should be feeling the effects of a stronger corporate community and improved team performance of recent times.

Washington, over the three seasons, drew a price-indexed attendance which was 2,346 below the attendance predicted based upon Model 2. These negative residual values are probably a result of the nature of the city of Washington. The fact that Washington is the capital city of the United States makes it different from the
other cities examined in this study. Washington, being a political community, may be more subject to population turn-over than an industrial community. People who are only going to be living in a city for a few years may not form a loyalty to that city's sport franchises. Washington's extensive socio-political circuit may also contribute to lower sport attendance by occupying the evenings of a portion of the population. The people unable to attend a sports contest, as a result of these social functions, would also tend to be those with above average incomes. The Washington Capitals have experienced attendance conditions similar to those of other Washington sport franchises, with the exceptions of the Washington Redskins who have traditionally drawn high attendances.

Prediction-Phase I

Predicting Saskatoon's price-indexed attendance, based upon the model developed in Phase I of this study, is more complicated than simply putting values into the Model-2 equation. Selection of appropriate values for variables measuring team performance have to be based upon hypothetical cases since the team does not currently exist. Values for variables related to the city the franchise would be located in are easier
to determine as they are obtained from the same sources as are used in the development of the model.

There was one major corporation headquartered in Saskatoon during the three seasons covered in this study. This corporation was Federated Co-operatives Ltd. and was ranked in the 70 largest corporations in Canada. The average income for the city of Saskatoon during the period studied was $13,462.

The value for Saskatoon on the Interest Index was an average of 150 for the three seasons studied. This value is 50% higher than any other franchise's score on the Interest Index. Saskatoon's population was an average of 163,000 for the period studied. The smallest community to have a National Hockey League franchise is Quebec City with a population of approximately 600,000 people.

Since the level of team performance is unknown a range of values is used for the variable, Team Quality. The range of values which was used was one standard deviation below the mean to one standard deviation above the mean. These winning percentages were .375 and .625. A winning percentage of .375 is usually high enough to make the play-offs, so this factor did not come into play in this prediction.

The final unknown value for a hypothetical franchise is average ticket price. This study used the
average ticket price for all Canadian teams as the
basis for the Saskatoon price-index. The price-index
assigned to a Saskatoon franchise was 1.09.

The predicted price-indexed attendance for a
National Hockey League franchise located in Saskatoon
is between 21,342 and 23,362. Based upon a price-index
of 1.09, this range of values translates to a
prediction of actual attendance between 19,580 and
21,433. This predicted price-indexed attendance puts
Saskatoon at the top of league attendance with Calgary
and Edmonton.

An assumption is being made that Saskatoon's
163,000 population combined with the population within
a three hour drive of the city is sufficiently large to
support a franchise. This combined population is
approximately 650,000. Although population was not
found to be a significant factor in either Model 1 or
Model 2, it would seem that there is a minimum
population level which any franchise location would
require.

Phase II Analysis

The analysis of community values involves
searching for reasons that Saskatoon would draw more or
less customers than predicted based upon the first
phase of this study. These values, which differ from community to community, may not be quantitatively measured. The effects of each of these values should be aggregated in making a final adjustment to the attendance predicted in Phase I.

Different communities may be more or less likely to follow the average consumption patterns of a nation. Armour (1981) contends that an almost universal consumption pattern develops as a result of mass communication. Regionalism is a way of responding to this singular culture in a creative manner. Those most likely to display behaviour different than the standard consumption patterns are those which are most creative and those furthest removed from the communications process. There is evidence to suggest that Saskatchewan meets both of the preceding conditions. Saskatchewan has a history of inventive solutions to community problems (Globe and Mail, May 29, 1986). Saskatchewan is further removed from the communications process than any of the communities with National Hockey League franchises. This distance from the communications process is a product of both a small population and geographic isolation from the large media centers. Saskatchewan could be considered a community more likely to vary from standard consumption patterns.
Saskatchewan's agrarian economy may also cause different consumption patterns. Russell (1975) comments that work is a positive factor in a person's life because it increases one's enjoyment of leisure time. The more satisfying one's work is the more likely that person is to indulge in constructive leisure pursuits. Russell describes two conditions which increase occupational satisfaction. Work should involve a skill which is varied or able to be improved indefinitely. Agricultural work involves both variety and unlimited skill improvement. As a result of high job satisfaction, Saskatchewan farmers may be more interested in constructive leisure activities involving participating rather than spectating.

The seasonal nature of the Saskatchewan agricultural industry may leave farmers more free time, in the winter months, which would allow these people to attend more sport events than other people. Attendance at hockey games would be negatively affected during October, April and May as a result of lack of free time by farmers.

Saskatchewan has expressed different values towards private and public business than other communities in North America. Saskatchewan has expressed these differing values by forming and supporting different forms of business organizations
(Globe and Mail, July 7, 1986). Saskatchewan has been identified as having both a pioneering and co-operative spirit. Co-operatives were formed in Saskatchewan to give the community and its individuals a voice in the operation of these organizations. Goals of community development and service are often given precedence to financial goals. Saskatchewan's values of community business suggest that additional support might be available to a Saskatoon National Hockey League franchise if that franchise was not capable of drawing sufficient attendance.

The impression that there is a major shift of corporate headquarters to western Canada is a relevant issue for examination because of the finding, in the first phase of this study, that corporate headquarters location is a significant factor in hockey attendance. Semple and Green (1983) conclude that corporate power has shifted towards the west to some degree but that Toronto is still where real corporate power is located. There does not seem to be any reason to expect that Saskatoon is going to benefit from any large shift of corporate power in the near future.

The Saskatchewan Roughriders have a long history of excellent fan support despite being located in the relatively small city of Regina. This fan support includes many people travelling three or four hours to
each home game. Comparisons between the Saskatchewan Roughriders and a proposed Saskatoon National Hockey League franchise, if valid, would suggest that the hockey team would surpass the attendance predicted based upon a model of current National Hockey League attendance.

The most significant factor common to the Saskatchewan Roughriders and a Saskatoon hockey franchise is that they would both be professional sport franchises. The franchises would also be comparable in their rankings of city size amongst other teams in their leagues, with both being the smallest city in the league. Support of a Canadian Football League franchise in a small Saskatchewan city may suggest that a National Hockey League franchise may also be viable in a small Saskatchewan city.

Calder and Andrews (1984) document strong support for the Saskatchewan Roughriders throughout both winning and losing seasons. Extreme loyalty and a powerful marketing campaign have given the Roughriders an almost spiritual presence, "Rider Pride". This faith has carried the Roughriders through potential financial problems on a number of occasions and only recently has shown signs of declining (Globe and Mail, Oct. 17, 1985). Given the Roughriders history, this weakening of fan support is probably only temporary.
The Saskatchewan Roughriders rely on a great deal of fan support from those outside the city of Regina. There are a number of factors which suggest that a Saskatoon National Hockey League franchise would not receive comparable support from those outside the immediate area of the city of Saskatoon.

The fact that the Roughriders compete during the summer and the National Hockey League operates during the winter is a significant factor in attendance. Saskatchewan's thinly distributed population makes people more willing to travel long distances than people in densely populated communities. However, Saskatchewan's winters would have to be considered harsh enough to cause a reduction in the willingness to travel long distances.

The time of day and day of the week on which games are scheduled are other factors which make the Saskatchewan Roughriders and a Saskatoon hockey franchise not comparable. Many National Hockey League games are played on weekdays and therefore must be played at night, after normal working hours. The fact that there are many night games in the National Hockey League is significant in determining the travel time which fans will consider acceptable. Although people are willing to travel three or four hours on a Sunday afternoon to see a Saskatchewan Roughriders game, they
are probably not willing to drive three or four hours to their homes after a hockey game which ends at ten o'clock. Depending on one's concept of early and late, 1 a.m. of 2 a.m. may be an acceptable time to arrive home. The farm population would probably consider 2 a.m. late, given the time of day that they normally start working. An indication that people of Saskatchewan value time differently than other Canadians is that Saskatchewan remains on daylight savings time all year.

The number of games on the Canadian Football League schedule and the number of games on the National Hockey League schedule is another factor which would make the Saskatchewan Roughriders and a Saskatoon hockey franchise different. The Canadian Football League regular season schedule is less than 10 home games while the National Hockey League regular season schedule has 40 home games. This means that attendance at the home games of a National Hockey League franchise would be both more time-consuming and more expensive.

The assumption that the Saskatchewan Roughriders and a Saskatoon National Hockey League franchise are parallel situations seems on the surface to have some merit but upon closer examination appears not to be a valid assumption.

Saskatchewan has a long history of success in
hockey. That success includes winning championships, producing top players and drawing spectators. This strong hockey tradition provides reason to believe that professional hockey franchises located in Saskatchewan would draw high attendances.

Saskatchewan hockey teams have managed to capture titles in almost every level of national championships. The Stanley Cup is about the only major hockey championship which has not been won by a Saskatchewan team.

Many of the top National Hockey League players were born and grew up in Saskatchewan. All-time greats such as; Gordie Howe, Eddie Shore, the Bentley brothers, Glenn Hall and Bobby Baun developed their hockey skills in Saskatchewan. There have also been numerous top hockey executives and coaches from Saskatchewan, such as; Emile Francis, Clarence Campbell, Gordon Luckes, Charlie Hay and Dave King.

Saskatchewan's hockey history includes not only success in placing people in professional and international hockey but a strong grass-roots popularity. Participation in hockey is popular amongst a wide variety of age groups and there is also a long history of women's hockey.

According to Zeman (1983), professional hockey came to Saskatchewan in the early 1920's and lasted until
1959. Professional hockey teams located in Saskatchewan have been a stepping stone to the National Hockey League for a number of players. Among players who played professional hockey in Saskatchewan and also in the National Hockey League are; Dick Irvin, Newsy Lalonde, Max Bentley, Doug Bentley and George Hainsworth. Attendance was strong for these professional teams in Saskatchewan with average attendances between 3,000 and 5,500 in the 1923-1924 season.

The community of Saskatchewan would be expected to have values towards professional hockey most like those of communities with which it shares other values. The community most resembling Saskatchewan would be Manitoba. Geographic factors such as population and population distribution are similar with the exception of a larger concentration of Manitoba's population in the capital city. Manitoba's economy has a similar agricultural base and parallels can also be drawn between Saskatchewan and Manitoba in political and social history. Mott (1985) concluded that hockey games in Winnipeg in previous decades were more ceremonial events than sporting events. These games had an almost religious value to the community, providing an opportunity to show one's faith and pride in the community. Manitoba and Saskatchewan both seem to
place a high value on the sport of hockey.

A concept used in financial theory, risk-return trade-off, may be applied to the analysis of community values. In order to compensate an investor for increased risk, a higher rate of return must be available. The degree to which individuals require compensation for risk determines whether they are risk averse or risk seeking (Copeland and Weston, 1979). Those who demand the lowest level of risk for a given rate of return are considered risk averse while those who accept the higher level of risk for a given rate of return are risk seekers. Workers in a unionized, industrial community would best be described as risk averse as their financial status is fairly stable. Farmers would best be described as risk seekers as their financial status is less stable. This risk seeking tendency of the Saskatchewan community may make a difference in their response to professional sports teams winning and losing. Viewing professional sport, risk is the chance the fan's team will not win and return is the satisfaction derived by watching the fan's team win. If there is a relationship between risk-return characteristics of a community regarding finances and sport, then the Saskatchewan community would have a tendency to accept lower winning percentages by their sport teams before deciding not
to attend their team's games.

Concession revenues can be a significant factor in determining the viability of a professional sport franchise. Saskatoon's temperance history and the decision of the citizens of Regina not to allow the sale of beer at Taylor Field (Saskatoon Star-Phoenix, Oct. 24, 1985) both suggest that revenue from the sale of alcohol would not be available to a National Hockey League franchise located in Saskatoon.

The National Hockey League considers more than attendance when evaluating franchise bids and transfers. Geddart and Semple (1985) note that the National Hockey League have indicated that other considerations include: 1) the quality of the facility available, 2) the financial structure of the proposal, 3) the effect of the proposed franchise on league image and 4) the expected drawing capability of the proposed franchise when on the road. American franchise owners do not believe that there are any Canadian cities without National Hockey League franchises which would be good draws in United States cities.

Control of the National Hockey League board of governors is also an important factor in franchise bid and transfer decisions. Many board decisions require a two-thirds majority and there is a desire by the American franchises to keep two-thirds of National
Hockey League franchises in the United States (The Hockey News, Sept. 6, 1985). Control of the board of governors can affect a variety of facets of the professional sport business. Television contracts are a constant topic of discussion for the board of governors even though a league policy, the Trans Border Agreement, already exists (Windsor Star, Sept. 26, 1984). The attendance capabilities of a franchise are outweighed as a consideration by the effects of that franchise on all other league members.

Management is a factor which would have to be examined in a final investment decision. A franchise bid is more likely to be successful if the proposed franchise includes participation by recognized hockey management people (The Hockey News, March 15, 1985). It is not possible to make any adjustment to the prediction of attendance for a Saskatoon franchise because there is no basis for determining who the management would be. However, a final decision to locate a franchise in a community should not be made without a thorough evaluation of the management involved.

Prediction-Phase II

Saskatchewan's hockey tradition, risk seeking
nature, and co-operative spirit all suggest that a National Hockey League franchise located in Saskatoon would draw high attendances. Comparisons between the Saskatchewan Roughriders and a proposed Saskatoon National Hockey League franchise appear not to be valid and adjustments should not be made to the Phase I prediction on the basis of these comparisons. The community which seems most similar to Saskatchewan is Manitoba. The Winnipeg Jets had the largest negative residual values in the analysis of Phase I. This would suggest that Saskatoon would draw fewer fans than predicted on the basis of Model 2.

It is almost impossible to attach a numerical value to the qualitative analysis of Phase II but the general impression is that a small downward adjustment should be made to the Phase I prediction. On the basis of Phase I analysis and Phase II analysis, the predicted price-indexed attendance of a National Hockey League franchise located in Saskatoon is between 18,000 and 20,000.
CHAPTER V
CONCLUSION

The factors that were found to affect National Hockey League attendance were: 1) income, 2) corporate headquarters, 3) team quality, 4) play-off contention, 5) hockey interest and 6) an interaction between hockey interest and population. A basis was also found for the consideration of community values in predicting professional sport attendance. Different National Hockey League franchises can attribute different proportions of their attendance to each of these factors.

Two of these factors, community values and hockey interest, are of special interest from a marketing perspective. These two factors present some opportunity for management influence. Marketing campaigns can be aimed at increasing hockey interest or at changing the degree to which the community values its professional hockey franchise. An example of an attempt to increase hockey interest would be a program designed to familiarize the public with the rules of the game or current stars. An example of a program aimed at changing community values would be “Rider Pride”, a Saskatchewan Roughrider marketing campaign to “show the rest of Canada who has spirit”.

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The location of corporate headquarters is a factor which a professional sport franchise cannot affect. However, knowing that corporate headquarters location is an influencing factor allows a franchise to evaluate its success in marketing of season tickets to corporations. Comparisons of season ticket sales to corporations can be made to franchises with a similar number of major corporations headquartered in their cities. The finding that income and corporate headquarter location are significant influences on professional hockey attendance is an important reminder that professional sport franchises are businesses and therefore subject to many economic influences.

Play-off contention and team quality were both found to influence attendance. The fact that teams not making the play-offs can expect to draw about 2,030 fewer fans per game probably explains the very liberal play-off qualification system in the National Hockey League.

The results of this study indicate that Saskatoon would be a viable location for a National Hockey League franchise. The predicted attendance would put Saskatoon near the top of the league in attendance with the Calgary and Edmonton franchises. Saskatoon's greatest strength is its high interest in hockey. Producing 50% more National Hockey League players per
capita than the next highest area indicates that the community of Saskatchewan values hockey in a very special way. A high level of personal income is also a major strength for a proposed Saskatoon National Hockey League franchise. Saskatoon's strength in these other areas makes up for the lack of a large corporate community. Saskatoon could be expected to support a National Hockey League franchise with either a winning or losing record. This is important for long-term viability, as teams are rarely able to stay at the top of the league continuously.

The fact that Saskatoon could support a National Hockey League franchise does not mean that the chances of securing a franchise are good. The cartel of National Hockey League franchise owners looks at their own profitability in examining franchise bid and transfer decisions. Current franchise owners are looking for evidence that a new franchise would be an attractive draw to their own fans and it is questionable whether hockey fans in Hartford, Boston or Washington even know where Saskatoon is located. This unfamiliarity would make a Saskatoon franchise a poor draw in these and other American cities.

Given the conclusion that Saskatoon could support a National Hockey League franchise but is unlikely to get one, leads to the question, why do the people of
Saskatoon place such a high value on getting a National Hockey League franchise? Further research questions include; 1a) do people believe that their community's image will benefit from a professional sport franchise and b) would the effect be the same if the team were unsuccessful? 2a) What are the effects of a city's professional hockey franchise on children's minor hockey programs and b) what are the effects of a city's professional hockey franchise on parents of minor hockey players?
BIBLIOGRAPHY

A. Books and Journal Articles


B. Newspaper and Magazine Articles


Losers in the NFL win at the bank. (1985, October 1). *Windsor Star.*


Pirates are sold, will stay in city. (1985, October 3). *Globe and Mail.*


Taylor Field left high and dry. (1985, October 24). *Saskatoon Star-Phoenix.*

This method tells you where the NHL will expand. (1985, March 15). *The Hockey News.*


Wild free-agent spending sure to result in revision.
Winnipeg fans are real diehard CFL supporters. (1985, November 8). Globe and Mail.
APPENDICES
Appendix 1. Actual National Hockey League average per game attendance by franchise

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Source: The Hockey News
### Appendix 2. Index of average ticket price by franchise

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Source: Globe and Mail
Appendix 3. Price-indexed National Hockey League average per game attendance by franchise

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Source: Canadian and American census documents
### Appendix 5. Points on Star Index by franchise

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Source: National Hockey League official guidebook
Appendix 6. Winning percentage of National Hockey League franchises

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Source: National Hockey League official guidebook
Appendix 7. Franchises not making the National Hockey League Play-offs

1982-1983

Detroit
New Jersey
Los Angeles
Hartford
Pittsburgh

1983-1984

Toronto
New Jersey
Los Angeles
Hartford
Pittsburgh

1984-1985

Toronto
New Jersey
Hartford
Vancouver
Pittsburgh

Source: National Hockey League official guidebook
Appendix 8. Sport competition faced by National Hockey League franchises

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* = 2 franchises in 1984-1985
Appendix 9. Interest Index values for franchise locations

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Appendix 10: Average income for National Hockey League franchise locations (in 1983 dollars)

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Source: Canadian and American census documents
Appendix 11. Number of major corporate headquarters in each franchise location

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<td>122</td>
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Source: Fortune 500 and Financial Post 500 lists
VITA AUCTORIS

Birthdate: 17 April 1961
Birthplace: Saskatoon, Saskatchewan
Education: Bachelor of Commerce
            University of Saskatchewan
            1983

          Master of Human Kinetics
          University of Windsor
          1986