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An analysis of spectator demand for professional soccer in North America.

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AN ANALYSIS OF SPECTATOR DEMAND FOR PROFESSIONAL SOCCER IN NORTH AMERICA

by

Ian Parratt

A Thesis

submitted to the Faculty of Graduate Studies

through the Faculty of

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of Master of Human Kinetics at

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ABSTRACT

AN ANALYSIS OF SPECTATOR DEMAND FOR PROFESSIONAL SOCCER IN NORTH AMERICA

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Ian Parratt

The purpose of this study was to examine the spectator demand for professional soccer in North America by investigating in-person average attendance at North American Soccer League (NASL) games. The study period was from 1978 to 1983 and 119 franchises were examined by means of sixteen independent variables. Further analyses were conducted on levels of attendance and franchise longevity.

The theory of demand allows the consumption of a 'service' (professional soccer) to be analysed in terms of a variety of factors, variables or demand determinants. Therefore, data was collected for each factor corresponding to each franchise and statistically analysed.

Stepwise multiple regression revealed twelve significant variables at the 0.05 level of confidence (R square 67 percent), in determining attendance, and a 'best' model containing five significant factors at the 0.05 level (R square 60 percent). These factors were Number of Star Players, Stadium Age, Team Quality, Income and Ethnic

Population. A stepwise discriminant analysis highlighted the significant differences between franchises attracting 'high', 'medium' and 'low' attendances, and a similar analysis found significant differences between 'permanent', 'non-permanent' and 'temporary' franchises.

In paralleling the findings of Noll (1971) and Demmert (1973), in terms of the types of variables found to be significant, the present study does reveal greater significance for certain factors such as Number of Star Players and Stadium Age, and others unique to professional soccer including Ethnic Population and Number of North Americans.

In conclusion, this analysis constructs a base from which to start with regards to viewing soccer in a more quantitative manner. However, its practical significance will be dependent on a more positive, committed and long-term approach from owners, franchises, the NASL and the various governing bodies.

DEDICATION

To my mother, Nyria and my wife, Tina for their continued support and understanding.

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CHAPTER I

INTRODUCTION

The focus of this study was the spectator demand for professional soccer in North America. Since 1980 the number of franchises in the North American Soccer League (NASL) has fallen from twenty-four to the present figure of nine,[1] whilst total league attendance in the same period dropped from over five million to under two and a half million.[2] A brief outline of the history of soccer in North America, and more particularly the NASL, provides both a background to the current difficulties and an understanding of the problems experienced by those who have attempted to develop the sport on this continent.

The post Civil War years, the 1870s, provided the first indication of the problems that lay ahead for a sport that has since "struggled to interact with the national character of the American people."[3] The Board of Governors at the influential Harvard University decided to adopt the rules of rugby football rather than those of association football under which Yale, Rutgers and Princeton competed.[4] This proved instrumental in the subsequent development of American football whilst "soccer began a slow, circuitous, painful climb to popularity outside the university and professional frame-work,"[5] being viewed as little more than an "immigrant sport".

The development of sport on a professional level owed much to the college/university system which served, and continues to serve, as a "breeding ground" for professional athletes. Consequently, while football, baseball and basketball developed rapidly during the early part of the twentieth century, soccer failed to do so. The "immigrant sport" was kept alive by the many ethnic groups in the cities, and in the 1920s industrial firms attracted many foreign players to provide sports entertainment for their largely European employees. In addition, numerous local leagues were being formed at this time including the longest standing professional leagues in North America. The German-American Soccer League[6] (now known as the Cosmopolitan League) was founded in 1923 and the American Soccer League in 1933.

The standard of play improved considerably after the Second World War, aided by the influx of new immigrants and returning servicemen. This was highlighted by the United States defeat of England in the 1950 World Cup[7] and the increasing number of foreign teams coming to North America to take part in exhibition matches. The popularity of such events was shown in 1958 when a total of eleven exhibition matches at Ebbets Field in New York attracted over 114,000 spectators.[8] This period was characterized by an increased standard of living, greater leisure time, more convenient transportation and significant technological innovations,[9]

all of which contributed to what Johnson termed "the age of the spectator."[10] The increasing interest in watching soccer came at a time when attendance at professional contests in general was growing considerably.[11]

The growing demand for professional sport and the movement of the Giants and the Dodgers from New York to the west coast[12] prompted William Cox[13] to establish the International Soccer League to "fill the gap left by the travelling baseball nomads."[14] The league, based in New York, invited as many as sixteen famous foreign teams each year to take part in league competition from May to August. A television contract with WPIX New York provided valuable exposure for the league and a 3.2 rating in 1961 was similar to that of daytime baseball games, "considered the backbone of the industry's sports programming."[15]

A number of games were played in Chicago in 1962 and the additional interest this created, produced a total season attendance of 190,051.[16] Further expansion took place in 1963 with games in Los Angeles, Boston and Chicopee,Massachusets in addition to New York and Chicago, and record crowds of 210,000 attended the twenty-eight game schedule.[17] The popularity of the league increased again in 1964 and by the following year over one million spectators had attended league games.[18] However, in spite of the success of the International League, the claims of the USSF[19] for a percentage of the gate receipts and a membership fee from

each team so angered Cox that he disbanded the league at the completion of its sixth season.[20]

The demand for soccer as a spectator sport had been shown to exist in North America. This was confirmed by two events in 1966. Firstly, the satellite screening of England's World Cup victory drew large audiences and extensive media coverage, particularly in New York,[21] and secondly, the Labour Day World Club Championship Final at Yankee Stadium attracted 41,598 spectators.[22] These events helped create a situation in which widespread support for soccer could develop. In stressing that it was a process of "spontaneous combustion" Smits stated that "promoters saw soccer as the next big audience sport on the North American horizon."[23] He suggested further that whilst "Cox's International League was the foundation on which big time soccer could be built" soccer was also a viable product to be sold in the many new stadia which had mushroomed throughout North America.[24]

At a meeting of forty prominent figures, with "sports backgrounds and substantial bank accounts",[25] the formation of a national soccer league was discussed. Three rival groups headed in turn by Jack Kent Cooke, Robert Hermann and James Millen,[26] each proposed to organize and finance a league with the approval of the USSF and FIFA.[27] After much deliberation the proposal of Cooke was accepted and his league (which became known as the United Soccer

Association or USA) was given exclusive rights to operate in North America, beginning in the late spring of 1968 with twelve franchises.[28]

The heads of the two rival groups, Hermann and Millen, unhappy at this decision, announced the formation of an "outlaw league"[29] to be known as the National Professional Soccer League (NPSL). Furthermore, in an effort to undermine the USSF, an inaugural season was planned for 1967, a year earlier than the sanctioned USA.[30] The latter organization was thus forced to alter its plans in order to prevent the NPSL from building up a stable following at the expense of the USA.[31] The decision was made to invite twelve foreign teams to North America in 1967 to play one season using the International League formula, before reverting to the original plan of using a mixture of American and overseas players to construct teams in 1968.[32]

By the end of the 1967 season the USA had attracted 568,118 spectators, with the NPSL attracting 818,847 but the financial losses were heavy on both sides.[33] The solution as Smits suggested "was to have only one league competing for fan support rather than two leagues competing with each other."[34] This ultimately lead to a merger and on January 5, 1968 the North American Soccer League was formed, with a membership of seventeen franchises.[35]

The inaugural season of the NASL was not a success. Attendance figures were much lower than anticipated by the

league and the respective owners. For example, New York averaged only 4,000 spectators, Chicago 3,000 and Detroit 1,500.[36] This resulted in financial losses for a number of teams and several folded at the end of the season including Boston, Chicago, Detroit and Houston.[37] Conversely, certain exhibition games had proved very popular (Santos versus Napoli attracting 44,000 spectators to Yankee Stadium) and whilst every means used by the NASL to attract the fans had failed, except for the involvement of foreign teams, an eight team delegation suggested that the league should disband to form one team.[38] It appeared, Yannis claimed, that American teams were not capable of attracting fan support with the public demanding the quality soccer played by foreign teams.[39] The proposal to form a national team, travelling to various cities to play against overseas opposition was rejected by the USSF and the CSA,[40] but the idea helped cause a loss of confidence in the NASL sufficient for twelve of the member clubs to cease operation.

The league virtually collapsed as public interest all but disappeared, the CBS television contract was terminated and the sports media in general reduced their coverage.[41] "The situation was muddled" but certain key individuals such as Phil Woosnam, Clive Toye[42] and Lamar Hunt[43] were "determined to make soccer a success in North America."[44] Consequently, as Glanville suggested, "after two

star-crossed, contentious and extravagant years, professional soccer will start again less ambitiously but more sensibly."[45] There were two ways to start a professional league according to Toye; firstly, to import the best players, attract support and lose money or secondly, to build more slowly on a smaller scale integrating the club and the community.[46]

The next six years were characterized by a yearly increase in franchise numbers and a rise in attendance figures, until league membership reached twelve in 1974.[47] This steady growth had been highlighted by Yannis in 1972 when he pointed out that half of the eight teams that year were close to breaking even financially. This stability was based upon an increased number of American college players in the league and the success of youth development programmes.[48] Woosnam stressed that the involvement of youngsters was essential for the future of the game, and as general interest in soccer grew once again "gaining stability and nationwide respect"[49] the Commissioner revealed plans for a sixteen team league in 1975, so as to attract the attention of television and other commercial concerns.[50]

"The most important day in the history of soccer in the United States and Canada"[51] came in late December 1974 as Woosnam announced the awarding of four franchises to the west coast, which helped make the NASL truly national.[52] The Commissioner's optimism was further reflected by the

movement of the league's head office from Atlanta to New York, the formation of a marketing arm (The NASL Marketing Incorporated) and the announcement that most teams had signed local television contracts.[53]

In 1975 the league expanded to twenty franchises moving to important television markets in Chicago and Washington.[54] Having surpassed the NASL's inaugural season membership of seventeen franchises, Woosnam felt that soccer's appeal as a family sport had contributed much to the increased spectator demand. Other interested parties also expressed hopes that soccer would finally become accepted in North America.[55]

The increased number of NASL franchises was but one example of what Michener described as "a sports explosion of bewildering proportion,"[56] that had characterized professional sports in recent years as the wealthy took advantage of the tax laws to invest in sports franchises.[57] The American Basketball Association (ABA) had been formed in 1967 with eleven franchises, the World Hockey Association (WHA) in 1972 with fourteen and the World Football League (WFL) in 1974 also with fourteen franchises. Each of these competed with established leagues: the National Basketball Association (NBA) the National Hockey League (NHL) and the National Football League (NFL) respectively.[58] In addition previously small scale sports such as volleyball, box lacrosse and team tennis were organized into professional

leagues.[59] The situation became so complex that Michener has remarked:

> In New York for example there were the Mets, the Jets, the Nets, the Yankees, the Giants, the Stars, the Knicks, the Rangers, the Islanders, the Cosmos, the Tomahawks and the Sets, and few could identify what sport each represented.[60]

However, soccer unlike a number of the "new" sports now had a solid base of participation and did not have the problem of saturation as did the traditional sports.[61] "Soccer, if not an American sport, is now a sport played by Americans."[62]

The signing of Pele by the New York Cosmos in June 1975 was as Toye remarked "the final piece in the jigsaw."[63] The most famous player in the world, his arrival meant a shift to a different level of soccer with improved standards, better media coverage and bigger stadia.[64] "Pele was the one superstar we needed to inspire people to see soccer. No other figure could possibly do as much."[65] His affect on attendances was immediate, attracting capacity 22,000 crowds to Downing Stadium in New York for his first two games compared to a 6,500 average for the Cosmos' previous four games.[66]

In November 1975 Woosnam announced the ownership interests of rock star Elton John in the Los Angeles franchise and stated "we now have two of the biggest names in the world associated with the league."[67] The NASL had thus "come of age" and as Woosnam continued to pursue a network television contract which he felt had been responsible "for taking professional football from the unsuccessful New York

Titans to the Super Bowl in five years," the Commissioner predicted enormous success for professional soccer in the next decade.[68]

The demand reflected by attendance figures grew sharply from a league average of 8,000 per game in 1975 to over 13,000 in 1977,[69] as league membership remained constant. The hoped for television contract had still not been signed but more people were playing soccer than ever before.[70] The Cosmos in particular drew large crowds and having moved to Giants Stadium[71] in 1977 attracted 62,394 on June 18, a day referred to by Lamms, the General Secretary of the USSF, as "day one of the history of North American soccer."[72]

In 1978 another six franchises were added and with four existing franchises having changed cities, the twenty-four team league now had ten new markets. Almost immediately it became clear to interested observers that the "league had sought too much too soon."[73] With a number of weak franchises the league could not afford to take the risk of allowing teams in areas with only limited soccer backgrounds such as Memphis and Tulsa.[74] There already existed a wide discrepancy between the average attendances of the most popular franchises and those without solid fan support. For example, whilst New York and Minnesota drew average crowds of 45,248 and 31,340 respectively, San Diego and Chicago attracted only 4,406 and 3,197 in 1977.[75]

The league's calibre of play however, improved

considerably during the 1978 season and a total attendance record of 5.3 million appeared sufficient to offset the losses of the weaker franchises.[76] Further financial support came from prominent businesses such as Gulf/Western and Global Communications.[77] In addition the American Broadcasting Company (ABC), had shown renewed interest in televising NASL games although their demands for fulfilling advertising committments threatened to alienate the soccer purists.[78]

The next two years witnessed a period of continuing stability and consolidation as league membership remained at twenty-four franchises and total league attendance once again reached a record level of 5.8 million in 1979.[79] This trend continued in 1980 as midway through the season fifteen NASL teams announced increased attendance. However, by early August, league statistics revealed the truth of Yannis' earlier predictions.[80] The six franchises added in the 1978 expansion were all experiencing severe financial problems and had failed to develop expected fan support. Of these teams Memphis, in particular, had averaged only 8,300 per game in 1980 and had tripled their expected losses.[81] There followed a succession of announcements that individual franchises had lost large sums of money and at the end of the 1980 season four franchises admitted that they could not withstand further losses (Rochester, Memphis, Houston and Detroit) and subsequently disbanded.[82]

Many felt that this situation could be traced back to the precedent set by the New York Cosmos in the mid-seventies. Terry Hansen, the vice-president of the Atlanta franchise, stressed that franchises should not attempt to compete with the Cosmos in terms of winning the Championship, for this would necessitate their spending considerable sums of money to attract star players. They should, Hansen concluded, "merely seek to create a sound business."[83] As a result, several owners suggested that the league should ideally house twelve franchises and that "weaker" organizations should be encouraged to fold.[84]

The fifteenth NASL season began in April 1981 with twenty-one franchises, three having folded and four relocated in new cities. A number of star players had departed, including Cruyff[85] and Beckenbauer,[86] and were replaced by only moderate players from overseas.[87] The baseball strike did not provide the additional attendance that many had hoped for, and by mid-May the Cosmos' average attendance had dropped by over 7,000 on the previous season and 18,000 on 1979.[88] This trend continued throughout the league and as the season ended the extent of the decline became apparent. The Atlanta franchise folded following losses of nearly seven million dollars in three years, and was soon followed by six others: Calgary, California, Dallas, Los Angeles, Minnesota and Washington.[89] The NASL's joint losses for twenty-one franchises totalled thirty-five

million dollars.[90]

Established franchises such as New York and Seattle, supported the reduction in league numbers and fourteen teams began the 1982 season. They had suggested that a smaller league would be stronger with individual team strengths more evenly matched.[91] However, with the league's credibility once more in doubt, a new Commissioner with vast business experience, replaced Woosnam in an effort to revive public interest. His name, Howard Samuels.[92] On accepting the position he said:

> In the history of sports there have been ups and downs. But as a businessman I am committed to finding why attendance is down. That means doing good market research, getting the best market researchers in the business.[93]

This lack of research into the problems of professional soccer was further highlighted by the Chicago franchise owner, Lee Stern who stated, "we've only been guessing on these questions, we really haven't done our homework."[94]

In spite of Samuel's business acumen the 1982 season saw total league attendance reduced by twenty per cent compared to that of the previous year and three franchises folded: Edmonton, Portland and Washington.[95] This trend continued into 1983. The concept of Team America proved unsuccessful[96] and the demise of the Seattle and Montreal franchises has reduced current league membership to nine.[97]

In the last three years the demand for professional

soccer has declined noticeably. However, this pattern seems to have been a common one throughout the game's North American history. Several commentators[98] have indicated that a basic problem has been the lack of a solid foundation both in terms of market research and honest committment on the part of owners. In order that some progress may be made towards redressing the first of these inadequacies there is a need for an analysis of those factors which affect the spectator demand for professional soccer.

FOOTNOTES-CHAPTER I

[1]Soccer Digest, January 1984 p. 31.

[2]Ibid., p. 32.

[3]B. Glanville, Soccer. (New York: Crown Publishers, 1968). p. 235.

[4]T. Smits, The Game of Soccer. (Englewood Cliffs, New Jersey: Prentice-Hall, 1968). p. 49.

[5]H. Frommer, The Great American Soccer Book. (New York: Atheneum, 1980). p. 57.

[6]New York Times, 6 September 1964.

[7]Smits, The Game. p. 53.

[8]New York Times, 29 October 1959.

[9]S. Twombly, 200 Years of Sport in America. (New York: McGraw Hill, 1976). p. 225.

[10]W. O. Johnson, Super Spectator and the Electric Lilliputians. (Toronto: Little, Brown and Company, 1973). p. 3.

[11]Smits, The Game. p. 3.

[12]The New York Giants and the Brooklyn Dodgers abandoned New York in favour of the west coast (San Francisco and Los Angeles respectively) in 1958, in search of improved facilities and superior financial possibilities.

[13]William Cox was a successful banker and timberman having graduated from Yale. He sought to promote professional sports having developed earlier interests particularly in baseball and basketball.

[14]New York Times, 17 January 1960.

[15]New York Times, 16 July 1961.

[16]New York Times, 6 August 1962.

[17]New York Times, 20 December 1963.

[18]Smits, The Game. p. 4.

[19]The United States Soccer Federation, formed in 1914, is the governing body of soccer in the United States.

[20]New York Times, 23 August 1964.

[21]New York Times, 26 July 1966.

[22]Smits, The Game. p. 5.

[23]Ibid.

[24]Ibid.

[25]Ibid.

[26]Jack Kent Cooke, an ex-Canadian promoter and millionnaire establishing himself in Los Angeles. Robert Hermann, a wealthy St. Louis sportsman and president of Stainer Container Corporation. James Millen, a Los Angeles attorney.

[27]The Federation Internationale de Football Association, the ruling body of world soccer.

[28]J. Allen, Soccer for Americans. (New York: Grossat and Dunlap, 1967). p. 28.

[29]A league not sanctioned by either FIFA or the USSF.

[30]Glanville, Soccer. p. 232.

[31]Ibid.

[32]Smits, The Game. p. 11.

[33]Ibid., p. 2.

[34]Ibid., p. 25.

[35]Ibid., p. 28.

[36]New York Times, 2 November 1968.

[37]New York Times, 24 September 1968.

[38]New York Times, 22 December 1968.

[39]Ibid.

[40]The Canadian Soccer Association, which with the USSF forms the two relevant governing bodies of soccer in North America.

[41]New York Times, 21 December 1968.

[42]Phil Woosnam, the first commissioner of the NASL was appointed on 7 January 1971. Formerly a player and coach of the Atlanta Chiefs, he played for the Welsh national team, Aston Villa and West Ham United in England. Clive Toye, a former sports journalist with the London Daily Express in England. He came to North America to take up a position with the Baltimore franchise in 1967, before embarking on very successful associations with the New York Cosmos and the Chicago Sting. He is now the President of the Toronto Blizzard.

[43]Lamar Hunt, an owner of the Kansas City Royals in 1967 when he took on a similar responsibility with the NASL's Dallas Tornado. A successful businessman in the oil industry and a renowned sports promoter..

[44]New York Times, 21 December 1968.

[45]New York Times, 2 March 1969.

[46]Ibid.

[47]New York Times, 27 May 1974.

[48]New York Times, 9 July 1972.

[49]New York Times, 26 August 1973.

[50]Ibid.

[51]New York Times, 12 December 1974.

[52]Ibid.

[53]New York Times, 20 August 1974.

[54]New York Times, 1 November 1974.

[55]New York Times, 4 May 1975.

[56]J. Michener, Sports in America. (New York: Random House, 1976). p. 364.

[57]The unique position held by professional sports in North America allows for the cost of a franchise to be offset against the assets of the team. This includes players as well as physical facilities. If the franchise is sold, depreciation of these same assets may be undertaken in total on each occasion. This situation was partly responsible for the rapid turnover of franchises during the

early seventies in the various professional sports.

[58]Michener, Sports. p. 364.

[59]Ibid.

[60]Ibid.

[61]New York Times, 4 May 1975.

[62]Ibid.

[63]New York Times, 17 June 1975.

[64]Ibid.

[65]New York Times, 27 July 1975.

[66]Ibid.

[67]New York Times, 5 November 1975.

[68]New York Times, 13 November 1975.

[69]New York Times, 10 July 1982.

[70]New York Times, 5 July 1977.

[71]Giants Stadium was opened in the mid-seventies primarily for use by the National Football League's New York Giants. The Cosmos moved in 1977 at the height of their popularity.

[72]New York Times, 20 June 1977.

[73]New York Times, 9 July 1978.

[74]Ibid.

[75]Ibid.

[76]New York Times, 17 December 1978.

[77]New York Times, 1 April 1979.

[78]New York Times, 14 August 1979.

[79]New York Times, 30 March 1980.

[80]New York Times, 15 July 1980.

[81]New York Times, 12 August 1980.

[82]New York Times, 8 November 1980.

[83]New York Times, 1 November 1980.

[84]New York Times, 8 November 1980.

[85]Johann Cruyff, considered by many to be the best player in Europe in the mid-seventies. He came to the NASL from his native Holland in 1979 to replace Pele as the league's premier player.

[86]Franz Beckenbauer, a West German international since 1965. One of the world's top players, he was signed by the Cosmos in 1977 as Pele neared retirement.

[87]New York Times, 29 March 1981.

[88]New York Times, 12 May 1981.

[89]New York Times, 29 August 1981.

[90]New York Times, 17 September 1981.

[91]New York Times, 28 March 1982.

[92]Howard Samuels was appointed NASL Commissioner on 25 June 1982. A sixty-two year old New Yorker, he gained success as a businessman by founding the Kordite Corporation (a leading manufacturer of plastic bags). He had also run for the Democratic primacy in 1974 as a public official. The league felt that someone with his background with no prejudices or preconceived ideas could provide a new approach for the future.

[93]New York Times, 29 June 1982.

[94]Ibid.

[95]New York Times, 28 October 1982.

[96]Team America, a unique idea supported by Howard Samuels was designed to house the best American players on the same team. They would constitute a franchise in the NASL based in Washington D. C. It was felt that the regular competition against foreign influenced teams in the league would greatly enhance the United States' bid to qualify for the 1986 World Cup. However, a number of the nation's premier players including Ricky Davis (New York Cosmos) and Mark Peterson (Seattle Sounders) refused to join the team, citing a desire for the security provided by their club teams. This show of no-confidence helped create an unfavourable reaction towards the Team America concept from

both the media and the fans. As the season progressed, the negative tactics adopted by the team, particularly in a league that rewards goals scored with league points, saw them fall quickly out of the play-off race. They finished in last place overall with attendance down to below 5,000 for their final home games. The principal owner, Robert Lifton, decided to withdraw his financial committment following losses in excess of one million dollars.

[97]The folding of these franchises was announced at the NASL's annual general meeting in Chicago during October.

[98]In addition to Samuels and owners such as Lee Stern (Chicago), Carl Berg (Golden Bay) and Bob Bell (San Diego), sports writers including Clive Gammon and David Reid of Sports Illustrated and Clay Berling of Soccer America have highlighted these points.

CHAPTER II

THE LITERATURE

A Review

Professional soccer has been a neglected area of study within North America and consequently there is no body of scholarly literature on which to draw for the purpose of the proposed study. In contrast to this the field of journalism has produced a steady flow of articles concerned with the sport, particularly within publications such as Soccer America, Soccer Digest and Sports Illustrated. There are also a number of books on soccer aimed primarily at a general audience which discuss the historical and strategic aspects of the sport but which offer little in the way of detailed analysis. A brief review of this literature will be provided before the discussion is directed towards an examination of scholarly works in related areas which are appropriate to this study.

The sports media has suggested a number of reasons for the continuing difficulties experienced by the NASL. These range from the poor quality of the product, as identified by Miller(1977),[1] to the lack of knowledgable owners reflected in continually shifting or folding franchises, highlighted by Lawton(1982).[2] Furthermore, the lack of a network television contract has been seen by MacDonald (1984),[3] to restrict the progress of the sport

through a lack of exposure.

A second body of literature pertaining to soccer in North America consists of a number of books written from a predominantly European perspective. Again the concern is one of setting forward various ideas and opinions as to the problems of professional soccer, whilst highlighting the prospects for the future. For example, John W.Anderson president of the Detroit Cougars said,

> Those of us deeply concerned with the NASL are convinced that in the years ahead this great international game will establish itself as firmly in the United States and Canada as it has in every other nation on the globe.[4]

Glanville concluded that the "salvation...lay in interaction between first class soccer in the stadiums and the growth of the game in the schools."[5]

Whilst providing a general background to the events that have taken place in the NASL and thereby describing many of the problems that have retarded soccer's development, this body of literature fails by its very nature to identify the causes of such problems. The need to undertake scientific research by means of the collection and interpretation of quantifiable data leads to a consideration of scholarly work carried out in the related field of professional sports.

A number of studies have been concerned with the more traditional American sports of baseball, basketball, football and hockey, which together with soccer, operate under a franchise system with a goal of profit maximization.

These works provide several important insights, and those of Noll(1971)[6] and Demmert(1973)[7] are particularly pertinent. Collectively, then, the literature provides the basis for the possible construction of a framework for the examination of individual professional sports franchises, which may be applicable to soccer.

From the earlier studies by Rottenberg(1956)[8], Neale(1964)[9], Davenport(1969)[10] and Jones(1969)[11], the following conclusion may be drawn:- that attendance was the main source of revenue for a professional sport before the advent of television contracts. This in-person attendance was influenced by a number of factors including level of income, price of ticket, quality of substitutes, team record and uncertainty of outcome. "It is a unique attribute of professional sports industries that the attraction of the game or match depends to a large extent on the closeness of competition."[12]

Noll's initial study was carried out in 1971 on basketball (NBA and ABA), in which he identified several positive correlations between factors such as population size and attendance and negative correlations such as black population and attendance.[13] These findings were supported by Demmert who investigated the demand for professional sports directly through in-person attendance and indirectly through the mass media. With the addition of variables not used by Noll, including population composition and franchise

longevity(number of years in operation), Demmert constructed a demand function[14] and applied it to baseball.[15] This identified Past Record, Sports Competition, Team Quality and Population as the most significant variables in determining attendance. Further research by Noll[16] supported earlier findings and revealed the unique dependencies on certain variables for each sport with regards to attendance determination.

During this period studies by Scully(1974)[17] and Bole(1975)[18]focused attention more on the economic aspects of attracting spectators and their basic role as revenue producers. This approach was also adopted by Sloane(1980),[19] who analysed the demand for professional sport for leagues as a whole and for individual franchises. The author identified the unique nature of the product with franchise owners housing a vested interest in the continued existence of competing teams, in order to maximize spectator interest and increase revenues. This notion was also cited by Vamplew (1982) with particular relevance to the NASL. "Is the current objective of the league simply survival, to keep itself viable in order that its members would have a recognized championship to play for?"[20] These later studies also outlined and confirmed factors such as Past Record, Team Quality, Population and Stadium Capacity as significant in determining attendance at professional sports contests.

The implications of these studies for the proposed

investigation lie in their possible application to soccer, and also in their identification of the concept of demand as a means to explaining the attendance of a franchise. It is now appropriate to discuss the development of a theory of demand and to identify those aspects of the theory which may relate to the present study.

Theoretical Background

The historical origins of demand theory lie in the formation of a link between two concepts, utility[21] and demand, which were viewed independently until Dupuit(1844) unwittingly identified utility with demand. Whilst contemporary studies by Cournot(1838), Gossen(1854) and Engel(1857) added to an understanding of demand by stressing the relationship between demand, price and income, it was not until 1871 that Jevons consciously sought to establish a link between demand and utility. However, Walras(1874) was the first to succeed and with this development it became possible to talk of a theory of demand. He suggested that "when maximizing utility demand is a function of all prices and initial endowment"[22] (personal wealth). This idea of a demand function was pursued by Marshall in 1890 who in identifying the key components as the price of the commodity in question and income indicated the generally downward sloping nature of the demand curve with regards to price.[23]

The works of Fisher(1892) and Pareto(1896) sought to

draw conclusions from the earlier studies but it was not until 1915 that Slutsky, in emphasizing an objective ranking of preferences dependent on maximization, as well as the distinction between income and substitution effects, provided a definitive work in the field. However, even after Slutsky's contribution the utility theory of demand, as it became known, remained the subject of investigation, prompting a number of studies in the area. These included works by Wold(1944) who, sought to identify the relationship between preference and utility; Leontief(1947) who, broke the decision-making process of consumer's into two stages and Hicks(1956) who, viewed demand "as a function of characteristics subject to the budget constraint and a technological relation between characteristics and commodities."[24,25]

The development of demand theory, based on the concept of utility and drawing from the contributions of economists throughout the century, has enabled the following definition of demand to emerge:- "the demand for a product is the schedule of quantities of a product consumers are willing and able to buy at different prices at a particular point in time."[26] Therefore, the concern is with consumer behaviour in the market place and in particular "the process by which consumers make choices from a range of goods and services."[27] Consequently, while price is an important factor it is but one aspect of the demand

function.[28] "The whole question of non-price determinants of demand"[29] must be considered.

The work of economists such as Drummond[30], Rose[31], Lipsey[32] and Baumol[33] has confirmed the importance of the following factors in influencing demand: 1) price, 2) quality, 3) income, 4) tastes or preferences, 5) substitutes, 6) number of outlets, 7) population and 8) socio-economic variables including family size, age, sex, occupation and location. The demand function is thus very complex and Baumol has highlighted a major problem in its determination. "The omission of any important variable from the demand function can lead to serious distortions in its results." He adds that the "selection of variables must therefore be extremely precise, easily measured with data not impossible to obtain."[34]

Perle has suggested that, "many components are intangible and, in the main, not easily quantifiable."[35] The researcher must be aware of positive qualitative elements because these may be of particular significance when investigating the fluctuations of demand. Earlier studies adopting demand theory as a tool dealt, for the most part, with perishable goods.[36] Schultz (1938),[37] Tobin(1950)[38] and Ferris(1964)[39] in studying different foods all identified demand determinants, including price, level of income, tastes, availability of substitutes and population.

The increased production of durable goods[40] in the

post-war years saw the attention of economists shift accordingly. Farrel(1954)[41], Chow(1957)[42] and Harberger(1960)[43] applied existing demand theory to studies of the demand for televisions, automobiles and general household appliances, and identified similar demand influences to those for perishable goods. However, the significance of each factor was seen to vary considerably depending on the good concerned, particularly "age, marital status and purchase expectations."[44]

During the last twenty years the majority of the studies concerned with demand theory have focused on services or service industries, including professional sports as outlined in the previous section. The studies of Perle(1964)[45], Rosenthal(1964)[46] and Quandt(1970)[47] again exposing the importance of numerous variables in determining demand.

> The world as we see it is not simply a chaotic disorganized set of institutions or behavioural patterns. The sometimes irrational and seemingly unexplainable behaviour is the result of many sometimes conflicting variables... that occur simultaneously. (However), there are some consistent influences which affect human behaviour and can be readily quantified.[48]

The three areas of study explored by demand theory namely perishables, durables and services have highlighted the existence of several demand determinants, the volume and frequency of which are dependent upon the good or service. Consequently, a basic premise of this study is that professional soccer, as a service industry, may be analysed

employing demand theory. An investigation into the demand for professional soccer, in terms of the in-person attendance of spectators at NASL games was therefore undertaken using factors previously identified in earlier studies of demand.

FOOTNOTES-CHAPTER II

[1]New York Times, 28 August 1977.

[2]Vancouver Sun, 8 August 1982.

[3]Vancouver Sun, 5 October 1984.

[4]T. Smits, The Game of Soccer. (Englewood Cliffs, New Jersey: Prentice-Hall, 1968). p. iv.

[5]B. Glanville, Soccer. (New York: Crown Publishers, 1968). p. 241.

[6]R. G. Noll, The Government and the Sports Business. (Washington D. C.: The Brookings Institution, 1974). pp. 115-157.

[7]H. Demmert, The Economics of Professional Sports. (Lexington, Massachussetts: D. C. Heath and Company, 1973). pp. 55-69.

[8]S. Rottenberg, "The Baseball Player's Labour Market," Journal of Political Economy, 53 (1956) 242-59.

[9]W. C. Neale, "The Peculiar Economics of Professional Sports," Quarterly Journal of Economics, 78 (February 1964) 1-14.

[10]D. S. Davenport, "Collusive Competition in Major League Baseball," The American Economist, 13 (Fall 1969) 6-30.

[11]J. C. H. Jones, "The Formal Organization of Sport," in Canadian Sport: Sociological Perspectives, R. S. Gruneau and J. G. Albinson (Don Mills, Ontario: Addison Wesley, 1976). pp. 219-258.

[12]Davenport, Collusive Competition. p. 6.

[13]Noll, Government. p. 125.

[14]The demand function is an expression which explains demand in terms of price, quantities and other variables; influencing the outcome in a variety of ways.

[15]Demmert, The Economics. p. 61.

[16]Noll, Government. pp. 129-47.

[17]G. W. Scully, "Pay and Performance in Major League Baseball," American Economic Review, 64 (December 1964)

915-30.

[18]R. Bole, "Economic Factors Influencing Athletics," in Administrative Theory and Practice in Physical Education and Athletics, E. F. Ziegler and M. J. Spaeth (Englewood Cliffs, New Jersey: Prentice-Hall, 1975). pp. 176-88.

[19]P. J. Sloane, Sport in the Market? (London: The Institute of Economic Affairs, 1980). p. 16.

[20]W. Vamplew, "The Economics of a Sports Industry: Scottish Gate-Money Football 1890-1914," Economic History Review 35 (1982) 563.

[21]Utility is the satisfaction gained from consuming a good or service. This is referred to in two ways:- 1) total utility - the total satisfaction gained from consuming a good or a service and 2) marginal utility - the change in satisfaction from consuming more or less of a good or a service.

[22]D. Katzner, Static Demand Theory. (London: The MacMillan Company, 1970). p. 8.

[23]The demand curve is a pictorial representation of the relationship between price and quantity. The downward nature of the curve refers to the normal slope which shows that the quantity consumed will fall as price rises, and rise as price falls.

[24]Katzner, Static Demand. p. 10.

[25]The authors and their works referred to herein are drawn for the most part from two sources. These are as follows:-

D. Katzner, Static Demand Theory. See footnote 2.
U. J. Kaur, Development of the Theory of Demand: Bernouli to Marshall. (New Delhi: Sterling Publishers, 1979).

[26]R. A. Wykstra, Introductory Economics. (New York: Harper and Row, 1971). p. 317.

[27]E. D. Perle, The Demand for Transportation. (Chicago: University of Chicago Press, 1964). p. 8.

[28]R. Turvey, Demand and Supply. (London: George Allen and Unwin Limited, 1971). p. 13.

[29]Perle, The Demand. p. 125.

[30]I. M. Drummond, Principles and Policies in an Open

Economy. (Georgetown, Ontario: Irwin-Dorsey, 1976). p. 116.

[31]T. Rose, Economics: Principles and Policy from a Christian Perspective. (Milford, Michigan: Mott Media, 1977). p. 232.

[32]R. G. Lipsey, G. R. Sparks and P. O. Steiner, Economics. (New York: Harper and Row, 1979). p. 56.

[33]W. J. Baumol, Economic Theory and Operations Analysis. (Englewood Cliffs, New Jersey: Prentice-Hall, 1965). p. 169.

[34]Ibid., pp. 219-20.

[35]Perle, The Demand. p. 19.

[36]A perishable good is one whose usefulness is consumed or destroyed in single usage.

[37]Schultz, Theory. p. 338.

[38]Katzner, Static Demand. p. 13.

[39]Ibid.

[40]A durable good is one whose usefulness continues over a period of time.

[41]G. C. Chow, Demand for Automobiles in the United States. (Amsterdam: New Holland Publishing Company, 1957). p. 76.

[42]Ibid., pp. 29-46.

[43]A. C. Harberger, The Demand for Durable Goods. (Chicago: University of Chicago Press, 1960). p. 6.

[44]F. G. Pyatt, Priority Patterns and the Demand for Household Durable Goods. (Cambridge,Massachussetts: Harvard University Press, 1974). p. 9.

[45]Perle, The Demand. p. 12.

[46]G. D. Rosenthal, The Demand for General Hospital Facilities (Chicago: American Hospital Association, 1964). p. 7.

[47]R. E. Quandt(ed.), The Demand for Travel - Theory and Measurement. (Lexington, Massachussetts: D. C. Heath and Company, 1970). p. 67.

[48]Rosenthal, General Hospital. p. 9.

CHAPTER III

THE PROBLEM

Purpose of Study

The purpose of this study was to investigate the spectator demand for professional soccer by measuring the effect of specified factors on in-person attendance for each North American Soccer League franchise.

Statement of the Problems

Problem P1 - Which factors are significant in determining the demand for professional soccer in the NASL?

Problem P2 - Which factors are significant in determining the attendance group of a franchise in the NASL?

Problem P3 - Which factors are significant in determining the permanence of a franchise in the NASL?

Hypotheses

The following hypotheses were used to test the first research question (P1):

H01 - Population will not have a significant effect on attendance.

H1 - Population will have a significant effect on attendance.

H02 - Income will not have a significant effect on attendance.

H2 - Income will have a significant effect on attendance.

H03 - Ticket Price will not have a significant effect on attendance.

H3 - Ticket Price will have a significant effect on attendance.

H04 - Ethnic Population will not have a significant effect on attendance.

H4 - Ethnic Population will have a significant effect on attendance.

H05 - Climate will not have a significant effect on attendance.

H5 - Climate will have a significant effect on attendance.

H06 - Sports Competition will not have a significant effect on attendance.

H6 - Sports Competition will have a significant effect on attendance.

H07 - Number of Years in City will not have a significant effect on attendance.

H7 - Number of Years in City will have a significant effect on attendance.

H08 - Number of Star Players will not have a significant effect on attendance.

H8 - Number of Star Players will have a significant effect on attendance.

H09 - Stadium Age will not have a significant effect on attendance.

H9 - Stadium Age will have a significant effect on attendance.

H010- Past Record will not have a significant effect on attendance.

H10 - Past Record will have a significant effect on attendance.

H011- Team Quality will not have a significant effect on attendance.

H11 - Team Quality will have a significant effect on attendance.

H012- Number of North American players will not have a significant effect on attendance.

H12 - Number of North American players will have a significant effect on attendance.

H013- Style of Play will not have a significant effect on attendance.

H13 - Style of Play will have a significant effect on attendance.

H014- Playing Surface will not have a significant effect on attendance.

H14 - Playing Surface will have a significant effect on attendance.

H015- Broadcasting will not have a significant effect on attendance.

H15 - Broadcasting will have a significant effect on attendance.

HO16- Stadium Capacity will not have a significant effect on attendance.

H16 - Stadium Capacity will have a significant effect on attendance.

The definitions of the above factors i.e. population to stadium capacity, will be explained in the the methodology section.

The following hypotheses will be used to test the second research question (P2):

HO17- Attendance Group One will not significantly differ from Attendance Group Two in terms of those factors which influence attendance.

H17 - Attendance Group One will significantly differ from Attendance Group Two in terms of those factors which influence attendance.

HO18- Attendance Group One will not significantly differ from Attendance Group Three in terms of those factors which influence attendance.

H18 - Attendance Group One will significantly differ from Attendance Group Three in terms of those factors which influence attendance.

HO19- Attendance Group Two will not significantly

differ from Attendance Group Three in terms of those factors which influence attendance.

H19 - Attendance Group Two will significantly differ from Attendance Group Three in terms of those factors which influence attendance.

The following hypotheses will be used to test the third research question (P3):

HO20- Permanent teams will not significantly differ from Non-Permanent teams in terms of those factors which influence attendance.

H20 - Permanent teams will significantly differ from Non-Permanent teams in terms of those factors which influence attendance.

HO21- Permanent teams will not significantly differ from Temporary teams in terms of those factors which influence attendance.

H21 - Permanent teams will significantly differ from Temporary teams in terms of those factors which influence attendance.

HO22- Non-Permanent teams will not significantly differ from Temporary teams in terms of those factors which influence attendance.

H22 - Non-Permanent teams will significantly differ from Temporary teams in terms of those factors which influence attendance.

Definition of Terms

Factors - an element or circumstance which affects attendance and can be identified and measured quantitatively.[1]

Significant - having or likely to have a statistical effect at the 0.05 or 0.10 level of confidence so that the independent variable rather than chance is responsible for the change in the dependent variable.[2]

Determining - establishing causally.[3]

Demand - the quantity consumed (measured by in-person attendance).[4]

Professional - occupation requiring a high level of training proficiency and organization for which participants receive financial returns.[5]

NASL - the North American Soccer League, which includes teams from the United States and Canada and represents the major professional soccer league in North America.[6]

Attendance Group - of which there are three:

Group One - to include franchises whose average attendance, for a particular season, is below 9,999.

Group Two - to include franchises whose average attendance, for a particular season, is between 10,000 and 14,999.

Group Three- to include franchises whose average attendance, for a particular season, is above 15,000.[7]

Franchise - the right of membership granted by the NASL, which gives permission to an individual or group to operate a team in a specified location, and to sell admissions to professional soccer in a particular territory.[8]

Permanent - a franchise that exists in 1984 and has operated in the same location for a minimum of six years.[9]

Non-Permanent - a franchise that does not exist in 1984 but has operated in the same location for a minimum of five years.[10]

Temporary - a franchise that does not exist in 1984 but has operated in the same location for a maximum of four years.[11]

Influence - to have an effect on and to partially determine.[12]

Assumptions

1) studies concerned with the demand for other professional team sports in North America are applicable to soccer.

2) soccer is a major league sport.

3) the identified factors are the most important quantifiable variables in determining attendance.

Limitations

The nature and availability of data and in particular

the following:- 1) attendance figures supplied by the NASL head office.

2) other soccer related factors obtained from NASL guide books.

3) estimations with regards to censal factors gathered from publications in intercensal years.

Delimitations

1) the North American Soccer League.

2) the years 1978 to 1983 inclusive.

3) the twenty-nine franchises that existed during that time.

4) the selection of one dependent variable, attendance.

5) the selection of sixteen independent variables, as stated.

FOOTNOTES-CHAPTER III

[1]Webster's Third New International Dictionary (Unabridged). (Springfield, Massachusetts: G. C. Merriman Company, 1981), p. 813.

[2]G. Wood, Fundamentals of Psychological Research. (Boston: Little Brown and Company, 1974). p. 66.

[3]Webster's Third New International Dictionary. p. 616.

[4]E. D. Perle, The Demand for Transportation. (Chicago: University of Chicago Press, 1964). p.12.

[5]Webster's Third New International Dictionary. p. 1811.

[6]operational definition

[7]operational definition

[8]J. Michener, Sports in America. (New York: Random House, 1976). p. 57.

[9]operational definition

[10]operational definition

[11]operational definition

[12]Webster's Third New International Dictionary. p. 1811.

CHAPTER IV

METHODOLOGY

The population was the six NASL seasons from 1978 to 1983 inclusive. This period provided the most recent example of both increasing demand (1978-80) and declining demand (1981-83), for professional soccer in North America. The contrasts provided by these two time frames with regards to the expansion and contraction of franchise numbers and attendance figures, allowed the basic elements of demand to be investigated.

The nature of demand theory is such that quantifiable factors were identified and subjected to investigation. In accordance with earlier demand studies on goods and services, the following variables were examined to determine their influence on demand as measured by attendance:-

Attendance (DV) - the average per game in-person attendance. This was determined by dividing the total season attendance at home games for each franchise, by the number of games played. These games included regular and post-season matches but excluded exhibitions or tournaments, outside of the league schedule.[1]

e.g. Toronto 1983 Total Season Attendance =197,671

Total Number of Home Games =17

Attendance Variable =11,628

(measured in single units)

Population (IV1) - was the relevant Standard Metropolitan Statistical Area (SMSA) population. This was not an exact measure of the market for a team but as Noll and Demmert have shown, it does correlate highly with the size of a team's market. In intercensal years publications such as the Statistical Abstract provided estimations of the possible changes in population. When these were not available calculations were made from the following census material:-

1970 and 1980 for the United States

1971 and 1981 for Canada.[2]

e.g. Tulsa 1983 SMSA Population =660,523

Population Variable =660

(measured in 1000's)

Income (IV2) - was a measure of the "effective buying income" (EBI) of the average household in each SMSA. This was a classification developed by Sales and Marketing Management which gave a value in U.S. dollars of personal income less personal tax and non-tax payments. Data for Canadian franchises was converted to U.S. dollars using contemporary exchange rates.[3]

e.g. Seattle 1983 Income =25,683

Income Variable =25,683

(measured in dollars)

Ticket Price (IV3) - was calculated by ascertaining the prices of tickets for the different sections in the

stadium, which were then totalled and divided by the number of rates available to adults, students and seniors.[4]

e.g. Chicago 1983 Prices - $ 8 VIP Box Seat
$ 6 General Admission (Adult)
$ 4 General Admission (Youth)
(Senior)
Total $18 at 3 different rates

Average Ticket Price = $ 6
(measured in dollars)

Ethnic Population (IV4) - studies on traditional American sports have included a variable to measure racial composition, particularly the percentage of blacks in a SMSA population. However, as an immigrant sport, soccer has been dependent on the involvement of ethnic groups from traditional soccer playing countries, particularly from Europe and South America, but also more recently from Africa, Asia and Australasia. As a result the ethnic composition of a given SMSA was determined by using information drawn from census material. The factor was represented as a percentage of the total population for each SMSA.[5]

e.g. Vancouver 1983 Total Ethnic Population = 364,441
Total Population =1,125,000
Ethnic Population Variable = 32.4
(measured as a percentage)

Climate (IV5) - this variable was represented by an average temperature in Fahrenheit calculated from the normal monthly temperatures for the five months of the playing season, i.e. May, June, July, August and September, for each SMSA.[6]

e.g. San Diego 1983 Temperatures - M 63, Jn 66, Jy 70, A 71, S 70.

Average = 68.0

Variable = 68.0

(measured as a percentage)

Sports Competition (IV6) - an index of substitutes derived from the number of teams playing major league professional sport (excluding the given NASL franchise) plus the sum of their respective winning percentages. This considered both the existence and the quality of available substitutes.[7]

e.g. Tampa Bay 1983 Bucaneers (NFL) 5-11 =45.5%

Bandits (USFL) 12-6 =66.6%

Sports Competition Variable =1.45+1.67

=3.12

(measured as an index)

Number of Years in City (IV7) - was a simple measure of the extent to which the franchise was part of the community and readily identified with by the relevant SMSA population. The measure represented the number of years, including the specified season, in which the franchise

operated. The NASL has seen considerable relocation throughout its history, allowing few franchises to become established in given SMSA's.[8]

e.g. San Jose 1983 Founded a franchise in 1974

Number of Years in City Variable =10

(measured in years)

Number of Star Players (IV8) - a measure of the number of players a franchise placed on the NASL all-star teams. Those players on the 1st all-star team scored three points, those on the 2nd team two points and 'honourable mention' one point.[9]

e.g. Vancouver 1983	1st Team Players	2	=6 pts
	2nd Team Players	1	=2 pts
	Honourable Mention	3	=3 pts
	Variable		=11

(measured as an index)

Stadium Age (IV9) - this factor related to both the quality of facilities available to spectators and to the accessibility of the stadium. Noll suggested that a newer facility afforded greater comfort, a better view of the game and easier access to the stadium. Age is measured in years from the year in which the stadium was completed.[10]

e.g. New York 1983 Giants Stadium 1975

Variable =8

Past Record (IV10) - referred to the tradition which may have been established by a given franchise, either as a

successful or as an unsuccessful team. The accumulated winning percentage of all previous seasons (including regular and post-season play) were calculated prior to the specified season.[11]

e.g. Tulsa 1983 past seasons 1978 1979 1980 1981 and 1982

winning percentages 48.39 48.57 50.00 50.00 and 48.57

Past Record Variable = 49.11

(measured as a percentage)

Team Quality (IV11) - was the percentage of games won in the given season and was thus a measure of the team's success relative to the other teams in the NASL.[12]

e.g. Fort Lauderdale 1983 14-16 =46.66%

Variable =46.66

(measured as a percentage)

Number of North American Players (IV12) - the Americanization of professional soccer and the creation of an American identity was indicated by this factor. Whilst the NASL has imposed several rules in recent years as to the number of North American citizens on the field at any given time, this factor was concerned with the number of North American players on the club's roster during the season, as a percentage of the total number of players.[13]

e.g. San Diego 1983 had eight North American players on a playing roster of twenty players

Variable =8/20

=40%

Style of Play (IV13) - refers to the emphasis placed by the franchise on either attacking or defensive soccer, as reflected by the number of goals scored per game. There were three 'style' groups each represented by an index number as follows:-

Defensive = 1 (less than 1.5 goals per game)

Neutral = 2 (1.5 to 2.0 goals per game)

Attacking = 3 (more than 2.0 goals per game)[14]

e.g. Team America 1983 Defensive

Style Variable = 1

(measured as an index)

Playing Surface (IV14) - described the type of surface on which the franchise played its home games. This was either natural grass(1) or artificial turf(2).[15]

e.g. Toronto 1983 Astroturf = 2

Playing Surface Variable = 2

(measured as an index)

Broadcasting (IV15) - was a measure of the level of media exposure given to a franchise on a local basis. The "blackout rule" which exists in most professional sports prohibiting the live television screening of a team's home games within a specified radius, does generally allow for the broadcasting of away games. There are usually no such restrictions on radio coverage. The type of coverage was shown as follows:-

No coverage = 0

Radio only = 1

Television only = 2

Radio and Television = 3[16]

e.g. Chicago 1983 had both radio and television coverage

Broadcasting Variable = 3

(measured as an index)

Stadium Capacity (IV16) - was a simple measure of the soccer specific stadium capacity for each franchise. A number of stadia cater for various professional sports often citing a different capacity for each sport. This factor referred to the type of facility available and more specifically to the maximum level of demand that could be accomodated.[17]

e.g. Tampa Bay 1983 soccer capacity = 71,600

Stadium Capacity Variable = 71,600

(measured in single units)

Procedure

In each season from 1978 to 1983 a set number of franchises have operated as follows:-

1978 24 franchises

1979 24

1980 24

1981 21

1982 14

1983 12 franchises

Total 119

Whilst certain franchises including Calgary and Oakland operated for only one season, others such as New York and Toronto fielded a team in each of the six years. An operating franchise in any specified season represents one subject. Therefore, there are 119 subjects for which one measure of each variable, outlined earlier, was collected, see Appendix 1.

Statistical Analysis

The research problems were analysed using the specific statistical tools applicable to each question outlined in this section. Problem (P1) was studied, using the SAS package,[18] by means of multiple regression analysis, in order to determine those factors significantly affecting the demand for professional soccer in North America. This form of statistical analysis is "applicable to situations in which one variable has an expected value assumed to be a function of other variables,"[19] allowing the researcher to study "the effects, and magnitudes of the effects, of more than one independent variable on one dependent variable, using principles of correlation and regression."[20] The dependent variable (attendance) can thus be explained and predicted by means of the independent variables.

The method and calculation of multiple regression is such that it gives the "best" prediction possible, given the

correlations among the variables, for example, if IV1, IV2 and IV3, then DV. The results reveal how "good" the prediction is and how much of the variance is accounted for by the best linear combination of the independent variables. Consequently, in terms of problem P1, the application of stepwise regression analysis constructed a model pertaining to attendance determination.

In an effort to simplify the resultant model still further, a factor analysis was carried out "to see if an underlying pattern of relationships existed",[21] thus allowing the data to be "rearranged" or "reduced" to a smaller set of factors. This categorizes certain factors into groups dependent on their very nature, so that population, ethnic population and others may comprise one group, whilst playing success, past record and other different factors may form another group. A powerful and widely accepted statistical tool, factor analysis can "reproduce exactly the correlation as the larger set of variables."[22]

Research problems (P2) and (P3) were analysed by means of seperate discriminant analyses. This statistical protocol enabled the researcher to distinguish between the three groups specified earlier (high, medium and low attendance in P2, and permanent, non-permanent and temporary in P3). The SPSS package[23] permitted the selection of a linear combination of variables that best

discriminated between the groups by using a stepwise method which maximized this discriminating power. This ultimately allowed predictions to be carried out in terms of the attendance group into which a franchise falls, based upon the values of the specified variables.

The following assumptions, with regards to the statistical tools outlined above, were made as a result of careful examination of the type and nature of the data:-

1) a population was examined offsetting the need for a random, independent and representative sample,

2) the dependent variable (attendance) was measured on an interval scale,

3) the data was normally distributed for all variables,

4) a linear relationship was present for all variables.

The "power of the test" refers to the setting of an alpha or significance level. This decision determined the probability of either rejecting a hypothesis when it was true (Type 1 error), or failing to reject a hypothesis when it was false (Type 2 error). Consequently, the significance level was set in accordance with the consequences of making a Type 1 error (seeing too much in the data) or a Type 2 error (not seeing enough in the data). The author suggests that the exploratory nature of this study renders a less

conservative significance level of 0.05 applicable, accepting that anything upto 0.10 may be used so as not to overlook any indicators of direction or a trend that may be present in the data pointing to possible future research.[24]

FOOTNOTES-CHAPTER IV

[1]Official North American Soccer League Guides 1978 to 1984 with additional information supplied by the NASL head office.

[2]Calculations were made by subtracting the 1970 (1971 Canadian) figure from that of 1980 (1981 Canadian), and dividing this by ten to arrive at a yearly change. While there is obviously error contained in this method, an approxiamate value for this factor will suffice for the purpose of this study.

[3]From the Sales and Marketing Management's "Survey of Buying Power" July/October 1978, Sections A,C and D. The following Canadian/ U.S. dollar exchange rates were used:- 1978 - .8816, 1979 - .8558, 1980 - .8542, 1981 - .8367, 1982 - .8106 and 1983 - .8122. These rates represent the value of the Canadian dollar in U.S. funds for each year, as an average calculated from the exchange rates on four dates within the year:- January 1, April 1, July 1 and October 1.

[4]Data obtained from individual franchises and respective stadia. Where such information was not available, calculations were made from known ticket prices in certain years. For example, if the average ticket price of the Chicago Sting was $5.33 in 1980 and $6.33 in 1983, the values for 1981 and 1982 would be calculated at $5.66 an $6.00 respectively. While inaccuracies exist, the general trend in prices for each franchise were accounted for.

[5]Table 144 of the 1970 U.S. Census and Table 195 of the 1980 U.S. Census, both concerned with the number of citizens and foreign born persons by country of birth for each SMSA. Canadian values are from Table 27 of the 1971 Census Volume 1 Part 4 and Table 8 of the 1981 Census, detailing population by birthplace for Metropolitan areas.

[6]The World Almanac Book of Facts 1984, pp. 746-50.

[7]Information for this factor was compiled by reference to the Globe and Mail (Toronto) and the New York Times at the conclusion of each relevant season, with regards to the four traditional North American sports:- baseball - October, basketball - May, football - January(NFL), July(USFL) and hockey - April.

[8]Official North American Soccer League Guide 1984.

[9]Ibid.

[illegible] was gathered both from individual [illegible] respective stadia. Reference was also made [illegible] other professional sports teams using the [illegible] California Angels at Anaheim Stadium, home [illegible]

[illegible] American Soccer League Guide 1984.

[illegible] American Soccer League Guides

[illegible] Analysis System — a computer package [illegible] terminal.

[illegible] Linear Hypotheses and Regression. [illegible] 1966). pp. 310-24.

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[illegible] Statistical Analysis in Psychology [illegible] p. 469.

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[illegible] Experiment. [illegible]

CHAPTER V

RESULTS

The results reported in this chapter have been organized in terms of the following three problems or research questions:-

P1 - Which factors are significant in determining the demand for professional soccer in the NASL?

P2 - Which factors are significant in determining the attendance group of a franchise in the NASL?

P3 - Which factors are significant in determining the permanence of a franchise in the NASL?

Problem One

The purpose of multiple regression with regards to this problem was to evaluate the relationship between the dependent variable (attendance) and the remaining set of independent variables (sixteen factors). The regression analysis brings together all the variables to examine how the independent variables linearly relate to each other as well as to the dependent variable, and in doing this multiple regression provides two kinds of information:- 1) the best predictive model constructed from the full set of independent or predictor variables, and 2) the amount of

variance which could be accounted for by each of the predictive models, as well as for the full set of independent or predictor variables. The relationship between the variables is shown in Table 1.

Simple Correlations

The moderate correlation (plus 0.55) between two variables, V9 (Number of Star Players) and V12 (Team Quality), and attendance is shown in Table 1.

A table of simple correlations therefore provides an initial examination of possible important influences on attendance in terms of independent factors. However, this study is concerned with constructing a set of factors (model) which can be seen as a predictor of attendance. This gives rise to what may be termed a macroscopic view of regression analysis.

Multiple Regression Analysis

A significant reduction in the sum of squares for the dependent variable (attendance) for all sixteen variables can be seen in Table 2. The F value for the reduction in the total sum of squares is equal to 12.84, significant at the 0.0001 level. In terms of the percent reduction in the total sum of squares of the dependent variable (attendance), which can be explained via a regression equation, the equation accounted for sixty-seven

	Variables	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17
V1	Attendance	X	.33	-.17	.35	.24	-.08	.35	.17	.69	-.21	.26	.58	.07	.43	.25	.21	.28
V2	Population	.33	X	.13	.40	.26	.06	.85	.36	.59	.30	.16	.31	.11	.30	.17	.02	.42
V3	Income	-.17	.13	X	.30	.31	-.35	.15	.37	-.00	.19	-.11	-.10	.35	-.04	.22	.01	.03
V4	Ticket Price	.35	.40	.30	X	.38	-.06	.41	.37	.47	.13	.19	.38	.15	.33	.31	.21	.19
V5	Ethnic Population	.24	.26	-.30	.38	X	-.44	.24	.39	.29	.23	.10	.24	.20	.11	.15	.10	.34
V6	Climate	-.08	.06	-.35	-.06	-.44	X	-.07	-.03	-.01	-.01	.15	-.03	-.11	.01	-.19	.18	-.10
V7	Sports Competition	.35	.87	.15	.41	.24	-.07	X	.27	.60	.04	.15	.31	.18	.33	.31	.08	.44
V8	Years in City	.17	.36	.36	.37	.39	-.03	.27	X	.34	.09	.47	.17	.16	.16	.19	.24	.21
V9	Number of Stars	.69	.59	-.00	.47	.29	-.01	.60	.34	X	.03	.26	.65	.07	.58	.21	.16	.32
V10	Stadium Age	-.21	.30	.19	.13	.23	-.01	.04	.09	.03	X	.06	.01	-.01	.05	-.37	.04	.03
V11	Past Record	.26	.17	-.11	.19	.10	.15	.15	.47	.26	.06	X	.27	-.17	.33	.03	.30	.08
V12	Team Quality	.58	.31	-.10	.38	.24	-.03	.31	.17	.65	.01	.27	X	-.07	.76	.22	.17	.20
V13	Number of North Americans	.07	.11	.35	.15	.20	-.11	.18	.16	.07	-.01	-.17	-.07	X	-.13	.11	.01	.09
V14	Style	.43	.30	-.04	.33	.11	.01	.33	.16	.58	.05	.33	.76	-.13	X	.23	.23	.16
V15	Playing Surface	.25	.17	.22	.31	.15	-.19	.31	.19	.21	-.37	.03	.22	.11	.23	X	.19	.21
V16	Broadcasting	.21	.02	.01	.21	.10	.18	.08	.24	.16	.04	.30	.17	.01	.23	.19	X	-.03
V17	Stadium Capacity	.28	.42	.03	.19	.34	-.10	.44	.21	.32	.03	.08	.20	.09	.16	.21	-.03	X

Table 1 Correlations between Variables used in the Analysis of Attendance (n=119)

Dependent Variable	Source	Df	Sums of Squares	Mean Square	F Value	Prob. F	R Square	Sign.
Attendance	Regression	16	5658972053.91	353685753.37	12.84	0.0001	.6683	yes
	Error	102	2890124404.02	27540435.33				
	Corrected Total	118	8468096457.93					

Table 2 Multiple Regression Overview

percent of the variance (R square = 0.6683). The coefficient of determination, showed the proportion of variation in the dependent variable that is explained by the independent variables.

In order to determine the effect of each independent variable on the dependent variable, Table 3 presented a preliminary breakdown by showing each independent variable as a contributor to the reduction in the sums of squares of the dependent variable.

The F value for the sequential sums of squares was concerned with the contribution of each individual independent variable over and above the effects of the variables preceding that source in the regression equation; that is, the effect of each independent variable on the dependent variable was examined seperately. Therefore, the value associated with the sequential sums of squares revealed any variables which make a significant singular contribution to the reduction in the sum of squares of the dependent variable.

Stepwise Regression Analysis

The creation of a model to include the 'best' group of independent variables in terms of their effect on the dependent variable gave rise to the need for a stepwise regression procedure. This allowed the 'masking effect', created by the possible interaction among the independent

Source	F Value	Prob. F	Prob. T
V9 Number of Stars	70.52	0.0001*	0.0001
V2 Population	33.55	0.0001*	0.0002
V4 Ticket Price	30.83	0.0001*	0.0073
V10 Stadium Age	17.10	0.0001*	0.0097
V3 Income	15.68	0.0001*	0.0158
V5 Ethnic Population	8.45	0.0045*	0.0213
V6 Climate	5.97	0.0162*	0.0426
V16 Broadcasting	4.99	0.0277*	0.0430
V11 Past Record	4.34	0.0397*	0.0504
V13 Number of North Americans	3.88	0.0517**	0.0588
V12 Team Quality	2.94	0.0896**	0.0773
V7 Sports Competition	2.92	0.0903**	0.1670
V8 Years in City	2.43	0.1220	0.2799
V17 Stadium Capacity	1.03	0.3136	0.3136
V14 Style	0.66	0.4188	0.6973
V15 Playing Surface	0.20	0.6572	0.8610

* significant at 0.05
** significant at 0.10

Table 3 Regression Coefficients and Levels of Significance for the Independent Variables

variables, to be offset and for the inclusion or removal of any independent variables, which were singularly non-significant or significant, but whose effect changed when grouped with other dependent variables.

The stepwise procedure began by selecting the best one variable regression model and proceeded to add the next best significant variable as long as a minimum one per cent increase in the coefficient of determination (R square) was attained.

The first five steps of the stepwise multiple regression and the resultant model are depicted in Table 4. The best one variable model was represented by the independent variable, Number of Star Players (V9), F = 108.51, P<0.0001. This model is attributed with over 48 per cent of the reduction in the total sum of squares (R square = 0.4812). The next best variable added was Stadium Age (V10), which helped form the best two variable model with regards to determining attendance, (F = 67.59, P<0.0001), and produced an R square improvement of 0.0570 for a total R square of 0.5382 (almost 54 per cent of the total reduction). The third variable added was Team Quality (V12), still producing the minimum one per cent improvement in R square and maintaining a statistically significant regression equation, F = 50.63, P<0.0001, (R square = 0.5691 or almost 57 per cent). The best four variable model included Income (V3), (F = 39.64, P<0.0001), with an

	Variables in Model	Mean Sq. F Value	Prob. F	Sequential SS F Value	Prob. F	B Value	R Square
1st Step	V9 Number of Stars	108.51	0.0001	108.51	0.0001	1343.77	.4812
2nd Step	V9 Number of Stars	67.59	0.0001	123.57	0.0001	1359.51	.5382
	V10 Stadium Age			14.32	0.0002	-132.76	
3rd Step	V9 Number of Stars	50.63	0.0001	47.34	0.0001	1070.43	.5691
	V10 Stadium Age			14.79	0.0002	-130.93	
	V12 Team Quality			8.25	0.0048	142.57	
4th Step	V9 Number of Stars	39.64	0.0001	50.16	0.0001	1094.10	.5817
	V10 Stadium Age			11.40	0.0008	-118.51	
	V12 Team Quality			6.89	0.0099	130.08	
	V3 Income			3.44	0.0661	-0.27	
5th Step	V9 Number of Stars	33.80	0.0001	45.55	0.0001	1038.67	.5992
	V10 Stadium Age			14.85	0.0002	-132.32	
	V12 Team Quality			5.66	0.0191	116.79	
	V3 Income			6.13	0.0148	-0.37	
	V5 Ethnic Population			4.95	0.0280	143.94	

Table 4 The Best Model

increase in the R square to 0.5817 or over 58 per cent. The final addition of Ethnic Population (V5), F = 33.80, P<0.0001, (R square = 0.5992 or neraly 60 percent), resulted in the construction of a five variable model.

Thus, the best predictive model that can be constructed from the original set of sixteen variables, consists of the above mentioned five variables and these are represented in equation form as follows:

Attendance = 14144.42 + 1038.67(Number of Star Players)
+ -132.32(Stadium Age) + 116.79(Team Quality)
+ -0.37(Income) + 143.94(Ethnic Population).

This model (equation) accounts for almost 60 per cent of the variance (R square = 0.5992), while the full set of predictor variables accounts for only an additional seven per cent (R square = 0.6683). From the regression equation for the dependent variable (attendance), it can be seen that from a starting point of 14144.42 (y intercept), the attendance figure increases 1038.67 units for each unit increase in Number of Star Players (V9), decreases 132.32 units for each unit increase in Stadium Age (V10), increases 116.79 units for each unit increase in Team Quality (V12), decreases 0.37 units for each unit increase in Income (V3) and finally, increases 143.94 units for each unit increase in Ethnic Population (V5).

Therefore, the greater the Number of Star Players, the Team Quality and the Ethnic Population the more

attendance will increase whilst, the older the stadium and the higher the Income, the more attendance will decrease, all at the 0.05 confidence level.

The results of the complete stepwise regression model revealed the significance of each independent variable with regards to their effect on attendance, and is shown in Table 5. There were eight independent variables significant at the 0.05 level of confidence, with an additional three at the 0.10 level.

Therefore, in terms of the research question P1, certain factors may be a) 'independently significant' i.e. significant when viewed as a single independent variable affecting the dependent variable (attendance); b) 'collectively significant' i.e. significant when grouped with the other fifteen independent variables affecting the dependent variable (attendance) and/or c) 'selectively significant' i.e. significant when grouped with other independent variables each of which showed a minimum one per cent increase in the coefficient of determination (R square), as seen in Table 6.

Factor Analysis

In order to further evaluate the relationships within the predictor variables, factor analysis was used. An examination of the resulting factor structures supplemented the information obtained from the regression

Variable	B Value	F Value	Sign.	R Square
Number of Stars	1069.27	33.34	0.0001*	.4812
Stadium Age	-178.08	15.42	0.0002*	.5382
Team Quality	126.70	4.20	0.0430*	.5691
Income	-0.38	4.22	0.0426*	.5817
Ethnic Population	30.01	0.15	0.6973	.5992
Broadcasting	959.32	5.47	0.0213*	.6072
Climate	-232.30	6.95	0.0097*	.6122
# of North Americans	105.51	3.18	0.0773**	.6202
Ticket Price	1063.63	1.94	0.1670	.6268
Style	-1253.92	1.18	0.2799	.6318
Past Record	76.56	3.92	0.0504**	.6368
Years in City	-392.73	3.65	0.0588**	.6395
Sport Competition	-1061.07	7.48	0.0073*	.6474
Population	1.29	6.03	0.0158*	.6556
Stadium Capacity	15.91	1.03	0.3136	.6634
Playing Surface	-222.99	0.03	0.8610	.6683

* Significant at .05
** Significant at .10

Table 5 Stepwise Regression Model (Full-Set of Variables)

	Independent	Collective	Selective
Significant at 0.05	V9 Number of Stars	V9 Number of Stars	V9 Number of Stars
	V2 Population	V10 Stadium Age	V10 Stadium Age
	V4 Ticket Price	V7 Sports Competition	V3 Income
	V10 Stadium Age	V2 Population	V12 Team Quality
	V3 Income	V6 Climate	V5 Ethnic Population
	V5 Ethnic Population	V16 Broadcasting	
	V6 Climate	V3 Income	
	V16 Broadcasting	V12 Team Quality	
	V11 Past Record		
Significant at 0.10	V13 Number of North Americans	V11 Past Record	
	V12 Team Quality	V8 Years in City	
	V7 Sports Competition	V13 Number of North Americans	

Table 6 Significant Factors for Problem P1

analysis.

The analysis used only 77 observations (all othe observations had eigenvalues of less than one) to produc the correlation matrix, using the image components method because this offered the highest number of observation whose eigenvalues were greater than one. This yielded principal component analysis of the image covariance matrix and was followed by the varimax rotation procedure. These methods were used in order to examine how variou predictor variables were clustered so as to determine th best possible predictors of the dependent variable.

In accordance with Thurstone (1947),[3] who stated tha the number of subjects in factor analytic solutions shoul be at least three times the number of variables, the stud had a ratio of almost five subjects per variable in order t indicate the number of factors or clusters of variables wit similar content. The results of the image component analysis are presented in Table 7.

This analysis grouped together in Factor One, eight variables. These were:- Attendance, Population, Ticket Price, Sport Competition, Years in City, Number of Star Players, Team Quality and Style, all with loadings in excess of 0.5. The remaining four Factors have principal loadings on a maximum of two variables, Factor Four linking Stadium Age and Past Record, and Factors Two and Three loading primarily on Income and Population respectively.

The results of the varimax rotation analysis are shown in Table 8, again with five Factor groups present and the greatest number of variables with loadings over 0.5 found in Factor One. The composition of this Factor shows a degree of commonality with the image components analysis in terms of the variables present. These include Attendance, Number of Star Players, Team Quality and Style, with an additional variable, Past Record also included. The next two Factors each group together three variables with [illegible] Sport Competition and Number of Star Players in Factor Two and Income, Ethnic Population and Climate forming Factor Three. The variables Stadium Age and Playing Surface [illegible] Factor Four, while once again Factor Five [illegible] with loadings of greater than 0.5.

Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
0.[illegible]*	0.353	-0.008	-0.482	-0.002
0.[illegible]7	0.939*	0.074	0.237	.0.047
0.110	0.052	0.783*	0.140	0.156
0.[illegible]8	0.326	0.403	0.017	0.090
* 0.261	0.173	0.684	0.420	0.097
0.065	0.043	-0.689	0.217	0.256
0.076	0.927*	0.115	-0.115	0.157
0.507	0.176	0.420	0.240	0.486
0.632*	0.598*	0.064	-0.159	-0.068
0.081	0.106	0.114	0.741*	0.180
0.612*	0.023	-0.103	0.251	0.219
0.796*	0.254	-0.007	-0.231	-0.163
0.158	0.155	0.432	-0.061	0.032
0.765*	0.231	-0.081	-0.133	-0.035
0.145	0.195	0.329	-0.531*	0.135
0.455	-0.066	0.028	0.093	0.159
0.101	0.469	0.208	-0.098	-0.063

[illegible] factor loadings (±) 0.500

Table 8 Varimax Rotation Factor Pattern

analysis, a statistical classification technique which distinguished between two or more groups. In addition, this tool explained the discrimination by indicating the relative efficacies or weights of the variables used. The utilization of the stepwise method of discriminant analysis provided for the development of an optimal set of independent variables that significantly effect the dependent variable, thus enabling the attendance level of each franchise to be both explained more fully and predicted for future years.

Simple Statistics

The SPSS sub-programme DISCRIMINANT[5] was used to analyse the significance of group seperation and to classify group membership by producing group means, a stepwise discriminant function and classification results for predicted group membership. The relevant group means of each dependent variable used in this problem are presented in Table 9, providing an insight into the distinguishing features of each attendance group.

Univariate Analysis

[illegible]

Variables	Attendance		
	Group One	Group Two	Group Three
V2 Population	2799.43	2353.17	3150.56
V3 Income	23012.40	23874.07	22114.00
V4 Ticket Price	4.96	5.41	5.51
V5 Ethnic Population	9.94	11.94	14.48
V6 Climate	70.81	69.10	68.01
V7 Sports Competition	3.85	3.22	4.69
V8 Years in City	6.26	5.46	7.06
V9 Number of Stars	1.38	2.79	6.44
V10 Stadium Age	19.81	20.46	15.23
V11 Past Record	44.97	42.84	56.01
V12 Team Quality	41.24	49.79	58.56
V13 Number of North Americans	48.92	47.25	48.23
V14 Style	1.74	2.12	2.44
V15 Playing Surface	1.36	1.44	1.68
V16 Broadcasting	1.07	1.72	2.00
V17 Stadium Capacity	44960.67	45501.42	54153.65

Table 9 Variables and Group Means

STATISTICS command.[6]

As an early indicator of those independent variables significant in determining attendance group, this analysis highlighted the singular contribution of each independent variable (Table 10). There were ten significant variables identified here, the grouping together of various or all independent variables may change both the number and the composition of those variables termed significant. This was the purpose of the stepwise discriminant analysis.

Stepwise Discriminant Analysis

The stepwise selection criterion used was indicated through the METHOD specification. The Wilks' Lambda (METHOD = WILKS)[7] measured the group discrimination utilizing the multivariate F ratio for the test of differences between the three created groups:-

1) Attendance Group One - average per game attendance is less than 9,999

2) Attendance Group Two - average per game attendance is between 10,000 and 14,999

3) Attendance Group Three - average per game attendance is more than 15,000.

Sixteen variables were tested for significance in determining attendance levels for NASL franchises from 1978 to 1983.

The mathematical objective of discriminant analysis

Variables	F	Wilks Lambda	Significance
V12 Team Quality	19.86	0.745	0.000
V9 Number of Stars	16.56	0.778	0.000
V14 Style	11.14	0.839	0.000
V11 Past Record	7.55	0.885	0.001
V4 Ticket Price	5.46	0.914	0.005
V16 Broadcasting	5.00	0.921	0.008
V15 Playing Surface	4.21	0.932	0.017
V5 Ethnic Population	2.54	0.958	0.083*
V7 Sports Competition	2.41	0.960	0.094*
V17 Stadium Capacity	2.36	0.961	0.099*

* Significant at 0.10

Table 10 A Three Group Discriminant Analysis (Attendance Group) Univariate F Ratio

is to force the groups to be as statistically distinct as possible by maximizing the F ratio. This group separation indicated which variables best represent a franchise's inclusion into one of the three attendance groups. It was expected that members of attendance group one would differ significantly from the members of attendance groups two and three on a set of variables.

The variables were entered into the analysis in a stepwise fashion. This selected the variables on the basis of their discriminating power. At each step a variable was removed, marking it as the best group discriminator and all remaining variables were re-entered. The next best discriminator was selected at each subsequent step, as it contributed to the largest increase in variance when added to the previously selected variables.

Following the twelfth step and the selection of the variable V13 (Number of North Americans), no other variables from the original sixteen had an F greater than one. At this point the stepwise procedure completed the selection process. From the results of the analysis in Table 11, twelve variables were significant determinants of attendance level within NASL franchises at the 0.05 confidence level, when grouped together. The most significant of these twelve independent variables in terms of determining the attendance level of an NASL franchise was Team Quality The greater the Team Quality, the higher the average per

Step	Number	Item Entered	Fto Removed	Wilks Lambda	Significance
1	V12	Team Quality	19.86	0.745	0.000
2	V11	Past Record	4.58	0.690	0.000
3	V9	Number of Stars	3.26	0.653	0.000
4	V17	Stadium Capacity	3.61	0.561	0.000
5	V4	Ticket Price	3.07	0.531	0.000
6	V6	Climate	2.70	0.507	0.000
7	V16	Broadcasting	2.96	0.480	0.000
8	V7	Sports Competition	2.08	0.468	0.000
9	V8	Years in City	2.79	0.452	0.000
10	V3	Income	2.29	0.435	0.000
11	V15	Playing Surface	1.76	0.422	0.000
12	V13	Number of North Americans			
			1.38	0.412	0.000

Table 11 A Stepwise Discriminant Analysis of Three Groups (Attendance)

game attendance as reflected by the attendance group means:- Group Three (High Attendance) 58.56, Group Two (Medium Attendance) 49.79 and Group One (Low Attendance) 41.24 (Table 9). The remaining significant variables were in rank order:- Past Record (V11), Number of Stars (V9), Stadium Capacity (V17), Ticket Price (V4), Climate (V6), Broadcasting (V16), Sports Competition (V7), Years in City (V8), Income (V3), Playing Surface (V15) and Number of North Americans (V13). There were four independent variables omitted following the stepwise discriminant analysis (Population V2, Ethnic Population V5, Stadium Age V10 and Style of Play V14), and these were subsequently termed non-significant at the 0.05 level of confidence.

Classification of Groups

A second feature of discriminant analysis allowed for a prediction as to which group a particular franchise should belong to based on the data used in the analysis.

In excess of two-thirds of the subjects were correctly classified as responding in accordance with actual group membership (Table 12). Furthermore, by referring once more to Table 11 those variables which contributed most significantly to the percentage of cases correctly classified, can be determined by examining the Wilks' Lambda. In a stepwise selection of variables the value of Wilks' Lambda is the overall multivariate F ratio for a test

Actual Group	Number of Cases	Predicted Group Membership		
		Group 1	Group 2	Group 3
Group 1	42	30 (71.4%)	9 (21.4%)	3 (7.1%)
Group 2	43	11 (25.6%)	28 (65.1%)	4 (9.3%)
Group 3	34	3 (8.8%)	8 (23.5%)	23 (67.6%)

Percent of Grouped Cases Correctly Classified = 68.1%

Table 12 Classification Results from Discriminant Analysis (P_2)

of differences among centroids. The variable which maximizes the F ratio also minimizes the Wilks' Lambda. Therefore, in order to significantly predict the effects of the independent variables on the dependent variable (attendance group), the number of variables or predicted outcomes could be reduced to those items which produced significant group differences. This reduced the model from sixteen to twelve variables as listed in Table 12.

Problem Three

In order to determine which factors are significant with regards to the permanence of NASL franchises a discriminant analysis, similar to that used in Problem P2 was employed.

Simple Statistics

The SPSS sub-programme DISCRIMINANT produced means for each group as well as a stepwise discriminant function and the classification results for predicted group membership. The group means for each independent variable are presented in Table 13, suggesting the distinguishing features of each permanence group. The strengths and weaknesses of each independent variable can therefore be compared between the three permanence groups, so as to more easily detect the differences between permanent,

Variables		Permanence		
		Group One	Group Two	Group Three
V1	Attendance	10088.03	12691.33	17767.50
V2	Population	2486.91	2300.33	3262.19
V3	Income	23517.75	22461.43	23258.71
V4	Ticket Price	4.99	5.20	5.53
V5	Ethnic Population	9.49	8.33	16.55
V6	Climate	68.92	70.32	68.95
V7	Sports Competition	4.14	3.30	4.13
V9	Number of Stars	1.50	2.43	5.29
V10	Stadium Age	12.97	19.82	21.71
V11	Past Record	31.12	54.17	52.63
V12	Team Quality	42.82	49.70	53.25
V13	Number of North Americans	48.97	48.09	47.57
V14	Style	1.72	2.10	2.29
V15	Playing Surface	1.53	1.41	1.50
V16	Broadcasting	0.94	1.49	2.06
V17	Stadium Capacity	51891.53	43674.61	48381.12

Table 13 Variables and Group Means

non-permanent and temporary franchises.

Univariate Analysis

The individual effect of each independent variable on the dependent variable (attendance) is shown in Table 14, using the same procedure as that adopted in Problem P2, and provides an initial indication as to the significance or non-significance of each variable in terms of determining permanence groups. However, when a number of variables are viewed 'collectively', rather than 'independently', by means of a stepwise discriminant analysis the significance of the variables is likely to change.

Stepwise Discriminant Analysis

The Wilks' Lambda (METHOD=WILKS) procedure calculated the group discrimination by using the multivariate F ratio to distinguish between the three groups:-

1) Permanence Group One (Permanent) - a franchise that exists in 1984 and has operated in the same location for a minimum of six years

2) Permanence Group Two (Non-Permanent) - a franchise that does not exist in 1984 but has operated in the same location for a minimum of five years

3) Permanence Group Three (Temporary) - a franchise that does not exist in 1984 but has operated in the same

Variables	F	Wilks Lambda	Significance
Past Record	33.27	0.635	0.000
Ethnic Population	13.36	0.813	0.000
Attendance	9.93	0.854	0.000
Number of Stars	9.69	0.857	0.000
Broadcasting	7.22	0.889	0.001
Style	7.08	0.891	0.001
Team Quality	6.07	0.905	0.003
Ticket Price	4.75	0.924	0.010
Stadium Age	3.44	0.944	0.035

Table 14 A Three Group Discriminant Analysis (Permanence Group) Univariate F Ratio

location for a maximum of four years.

Sixteen variables were tested for significance in determining permanence groupings for NASL franchises from 1978 to 1984.

The stepwise discriminant analysis ranked in order of significance those variables which best represented a franchise's inclusion into one of the permanence groups. It was expected that members of permanence group one would differ significantly from the members of permanence groups two and three on a set of variables. This is represented in Table 15.

The most significant discriminating variable in terms of distinguishing between permanence groups was Past Record (V11) whilst the least significant of the twelve variables was Style of Play (V14). This latter variable was an indication of how the more entertaining the style of play, the more permanent the franchise as reflected by the permanence group means:- Group Three (Permanent) 2.29, Group Two (Non-Permanent 2.10 and Group One (Temporary) 1.72, Table 13. There were twelve significant variables at the 0.05 confidence level which were in rank order:-Past Record (V11), Ethnic Population (V5), Attendance (V1), Sports Competition (V7), Stadium Age (V10), Number of Stars (V9), Broad-casting (V16), Number of North Americans (V13), Team Quality (V12), Population (V2), Stadium Capacity (V17) and Style of Play (V14), presented in this table, highlighting

Step	Number	Item Entered	Fto Remove	Wilks Lambda	Significance
1	V11	Past Record	33.28	0.635	0.000
2	V5	Ethnic Population	12.58	0.522	0.000
3	V1	Attendance	3.87	0.489	0.000
4	V7	Sports Competition	5.21	0.447	0.000
5	V10	Stadium Age	6.18	0.403	0.000
6	V9	Number of Stars	2.42	0.386	0.000
7	V16	Broadcasting	2.30	0.370	0.000
8	V13	Number of North Americans			
			1.61	0.360	0.000
9	V12	Team Quality	1.80	0.348	0.000
10	V2	Population	1.06	0.341	0.000
11	V17	Stadium Capacity	1.33	0.333	0.000
12	V14	Style	1.23	0.326	0.000

Table 15 A Stepwise Discriminant Analysis of Three Groups (Permanence)

Actual Group	Number of Cases	Predicted Group Membership		
		Group 1	Group 2	Group 3
Group 1	32	25 (78.1%)	4 (12.5%)	3 (9.4%)
Group 2	39	2 (5.1%)	27 (69.2%)	10 (25.6%)
Group 3	48	1 (2.1%)	13 (27.1%)	34 (70.8%)

Percent of Grouped Cases Correctly Classified = 72.3%

Table 16 Classification Results from Discriminant Analysis (P_3)

the distinguishing features of each permanence group. There were four independent variables omitted following the stepwise discriminant analysis (Income V3, Ticket Price V), Climate V6 and Playing Surface V15), and these were subsequently termed non-significant at the 0.05 level of confidence.

Classification of Groups

The group membership of each franchise was predicted and presented in Table 16, with almost three-fourths of the franchises correctly classified in accordance with actual group membership.

Summary

Problem P1 - Which factors are significant in determining the demand for professional soccer in the NASL?

The following independent variables were significant at the 0.05 confidence level in independently (univariate analysis) determining the demand for professional soccer in the NASL:- Number of Star Players, Population, Ticket Price, Stadium Age, Income, Ethnic Population, Climate, Broadcasting and Past Record.

The following independent variables were significant at the 0.1 confidence level in independently (univariate analysis) determining the demand for professional soccer in the NASL:- Number of North American Players, Team Quality

and Sports Competition.

The following independent variables were significant at the 0.05 confidence level in collectively (multivariate analysis) determining the demand for professional soccer in the NASL:- Number of Star Players, Stadium Age, Sports Competition, Population, Climate, Broadcasting, Income and Team Quality.

The following independent variables were significant at the 0.1 confidence level in collectively (multivariate analysis) determining the demand for professional soccer in the NASL:- Past Record, Years in City and Number of North American Players.

The following independent variables were significant at the 0.05 confidence level in selectively (stepwise discriminant analysis) determining the demand for professional soccer in the NASL:- Number of Star Players, Stadium Age, Income, Team Quality and Ethnic Population.

Problem P2 - Which factors are significant in determining the attendance group of a franchise in the NASL?

The following independent variables were significant at the 0.05 confidence level in independently (univariate analysis) determining the attendance group of a franchise in the NASL:- Team Quality, Number of Star Players, Style of Play, Past Record, Ticket Price, Broadcasting and Playing Surface.

The following independent variables were significant at the 0.10 confidence level in independently (univariate analysis) determining the attendance group of a franchise in the NASL:- Ethnic Population, Sports Competition and Stadium Capacity.

The following independent variables were significant at the 0.05 confidence level in collectively (multivariate analysis) determining the attendance group of a franchise in the NASL:- Team Quality, Past Record, Number of Star Players, Stadium Capacity, Ticket Price, Climate, Broadcasting, Sports Competition, Years in City, Income, Playing Surface and Number of North Americans.

Problem P3 - Which factors are significant in determining the permanence of a franchise in the NASL?

The following 9 independent variables were significant at the 0.05 confidence level in independently (univariate analysis) determining the permanence group of a franchise in the NASL:- Past Record, Ethnic Population, Attendance, Number of Star Players, Broadcasting, Style of Play, Team Quality, Ticket Price and Stadium Age.

The following independent variables were significant at the 0.05 confidence level in collectively (multivariate analysis) determining the permanence group of a franchise in the NASL:- Past Record, Ethnic Population, Attendance, Sports Competition, Number of Star Players, Broadcasting,

Number of North American Players, Team Quality, Population, Stadium Capacity and Style of Play.

FOOTNOTES-CHAPTER V

[1]SAS Institute Inc., SAS User's Guide: Statistics, 1982 ed. (Cary, North Carolina: SAS Institute Inc., 1982), p. 315.

[2]Ibid., p. 316.

[3]L. L. Thurstone, Multiple Factor Analysis. (Chicago: University of Chicago Press, 1947). p. 321.

[4]Ibid., p. 17.

[5]SPSS Inc., SPSS User's Guide, 1983 ed. (Chicago: SPSS Inc., 1983), p. 623.

[6]Ibid., p. 624.

[7]Ibid., p. 627.

CHAPTER VI

HYPOTHESES TESTING AND DISCUSSION

Hypotheses Testing

The following hypotheses and decisions correspond to the first research question which was stated as: Which factors are significant in determining demand for professional soccer in the NASL?

Hypotheses		Decision		
		Independent	Collective	Selective
HO1	Population	Rejected	Rejected	Fail to Reject
H1	Population	Accepted	Accepted	
HO2	Income	Rejected	Rejected	Rejected
H2	Income	Accepted	Accepted	Accepted
HO3	Price	Rejected	Fail to Reject	Fail to Reject
H3	Price	Accepted		
HO4	Ethnic Pop	Rejected	Fail to Reject	Rejected
H4	Ethnic Pop	Accepted		Accepted
HO5	Climate	Rejected	Rejected	Fail to Reject
H5	Climate	Accepted	Accepted	
HO6	Sports Comp	Rejected	Rejected	Fail to Reject
H6	Sports Comp	Accepted	Accepted	
HO7	Years/City	Fail to Reject	Rejected	Fail to Reject
H7	Years/City		Accepted	
HO8	No. Stars	Rejected	Rejected	Rejected

H8	No. Stars	Accepted	Accepted	Accepted
H09	Stadium Age	Rejected	Rejected	Rejected
H9	Stadium Age	Accepted	Accepted	Accepted
H010	Past Record	Rejected	Rejected	Fail to Reject
H10	Past Record	Accepted	Accepted	
H011	Quality	Rejected	Rejected	Rejected
H11	Quality	Accepted	Accepted	Accepted
H012	N. Americans	Rejected	Rejected	Fail to Reject
H12	N. Americans	Accepted	Accepted	
H013	Style	Fail to Reject	Fail to Reject	Fail to Reject
H13	Style			
H014	Surface	Fail to Reject	Fail to Reject	Fail to Reject
H14	Surface			
H015	B/Casting	Rejected	Rejected	Fail to Reject
H15	B/Casting	Accepted	Accepted	
H016	Capacity	Fail to Reject	Fail to Reject	Fail to Reject
H16	Capacity			

Four variables, (Number of Stars (V9), Stadium Age (V10); Team Quality (V12) and Income (V3)), were significant at the 0.05 confidence level under all three conditions, independent, collective and selective. The null hypotheses for each of these variables (H08, H09, H011 and H02) were therefore rejected and the alternate hypotheses (H8, H9, H11 and H2) accepted.

There were seven variables which are significant at

the 0.05 confidence level under two of the three specified conditions. Firstly, Ethnic Population (V5) was both 'independently' and 'selectively' significant, so that the null hypotheses H04 was rejected under these conditions and the alternate hypotheses H4 was accepted, whilst under the 'collective' condition the null hypotheses H04 cannot be rejected. Secondly, Sports Competition (V7), Population (V2), Climate (V6), Past Record (V11), Number of North Americans (V13) and Broadcasting (V16) were significant under the 'independent' and 'collective' conditions, and as a result the null hypotheses (H06, H01, H05, H010, H012 and H015) were rejected. The corresponding alternate hypotheses (H6, H1, H5, H10, H12 and H15) were subsequently accepted. As none of these six variables formed part of the best model the respective null hypotheses cannot be rejected under the 'selective' condition.

Under only one condition, there were two significant variables. Ticket Price (V4) was 'independently' significant at the 0.05 confidence level, thus the null hypotheses (H03) was rejected here and the alternate hypotheses (H3) was accepted. For the 'collective and the 'selective' conditions the null hypotheses (H03) cannot be rejected. The variable Years in City (V8) was 'collectively' significant at the 0.10 confidence level, therefore under this condition the relevant null hypotheses (H07) was rejected, whilst the alternate hypotheses (H7) was accepted.

The null hypotheses (H07) cannot be rejected under the other two conditions, 'independent' and 'selective'.

The remaining three variables, Stadium Capacity (V17), Playing Surface (V15) and Style of Play (V14), proved to be non-significant at the 0.10 confidence level under all three conditions. Consequently, the null hypotheses (H016, H014 and H013) cannot be rejected.

The following hypotheses and decisions correspond to the second research question which was stated as: Which factors are significant in determining the attendance group of a franchise in the NASL?

Hypotheses	Decision
H017 Group One - Group Two	Rejected
H17 Group One - Group Two	Accepted
H018 Group One - Group Three	Rejected
H18 Group One - Group Three	Accepted
H019 Group Two - Group Three	Rejected
H19 Group Two - Group Three	Accepted

The null hypotheses (H017, H018 and H019) stated above, that there will not be a significant difference between the three attendance groups (Group One - under 9,999, Group Two - between 10,000 and 14,999 and Group Three - over 15,000), in terms of the factors which influence

attendance were all rejected, whilst the alternate hypotheses (H17, H18 and H19) were accepted. There were seven variables °independently° significant at the 0.05 level of confidence and these were as follows:- Team Quality (V12), Number of Stars (V9), Style (V14), Past Record (V11), Ticket Price (V4), Broadcasting (V16) and Playing Surface (V15), with an additional three at the 0.10 confidence level, Ethnic Population (V5), Sports Competition (V7) and Stadium Capacity (V17). The remaining variables Population (V2), Income (V3), Climate (V6), Years in City (V8), Number of North Americans (V13) and Stadium Age (V10) were not significant at the 0.10 level of confidence. Under the °collective° condition only four variables, Population (V2), Ticket Price (V4), Ethnic Population (V5) and Stadium Age (V10), were not significant at the 0.10 confidence level, whilst the remainder all proved significant at the 0.05 level. These were Team Quality (V12), Past Record (V11), Number of Stars (V9), Stadium Capacity (V17), Ticket Price (V4), Climate (V6), Broadcasting (V16), Sports Competition (V7), Years in City (V8), Income (V3), Playing Surface (V15) and Number of North Americans (V13). This latter multivariate analysis provided the most rigorous statistical procedure in distinguishing between the composition of the specified groups.

The following hypotheses and decisions

correspond to the third research question which was stated as: Which factors are significant in determining the permanence of a franchise in the NASL?

Hypotheses	Decision
HO20 Permanent - Non-Permanent	Rejected
H20 Permanent - Non-Permanent	Accepted
HO21 Permanent - Temporary	Rejected
H21 Permanent - Temporary	Accepted
HO22 Non-Permanent - Temporary	Rejected
H22 Non-Permanent - Temporary	Accepted

The null hypotheses (HO20, HO21 and HO22) stated above, that there will not be a significant difference between the three permanence groups (Permanent, Non-Permanent and Temporary), in terms of the factors which influence permanence were all rejected, whilst the relevant alternate hypotheses (H20, H21 and H22) were accepted. There were nine variables °independently° significant at the 0.05 level of confidence, Past Record (V11), Ethnic Population (V5), Attendance (V1), Number of Stars (V9), Broadcasting (V16), Style (V14), Team Quality (V12), Ticket Price (V4) and Stadium Age (V10), whilst seven variables were not significant at the 0.10 confidence level. These include Population (V2), Income (V3), Climate (V6), Sports

Competition (V7), Number of North Americans (V13), Playing Surface (V15) and Stadium Capacity (V17). The °collective° condition produced eleven variables significant at the 0.05 level of confidence, these being Past Record (V11), Ethnic Population (V5), Attendance (V1), Sports Competition (V7), Number of Stars (V9), Broadcasting (V16), Number of North Americans (V13), Team Quality (V12), Population (V2), Stadium Capacity (V17) and Style (V14), with the remaining variables, Income (V3), Ticket Price (V4), Climate (V6), Stadium Age (V10) and Playing Surface (V15) not significant at the 0.10 confidence level. This latter multivariate analysis provided the most rigorous statstical procedure fn distinguishing between the composition of the specified groups.

Discussion

Demand theory has developed in such a way that the consumption of goods and services can be analysed and explained in terms of a variety of factors or variables labelled as 'demand determinants'. Professional soccer, as a service, and in-person attendance as a measure of demand, can therefore be investigated accordingly by outlining both the number and the degree of the relevant demand determinants which affect the NASL.

The present study of professional soccer paralleled the findings of earlier demand studies of North American

sports, by identifying similar demand determinants. The Number of Stars, Stadium Age, Team Quality, Income, Broadcasting, Past Record, Sports Competition, Climate and Population are all statistically significant variables in influencing attendance at major league sport. However, significant factors, unique to professional soccer, emerge as a result of the stepwise regression analysis in Problem P1. These were Ethnic Population, which may be considered similar to the Black Population variable of Noll's (1971) baseball and basketball studies,[1] and the Number of North Americans, a factor concerned with creating a national identity for the sport. As a result of the discriminant analysis undertaken in Problem P2, additional factors such as Style, Playing Surface, Ticket Price, Years in City and Stadium Capacity were found to be significant in determining the attendance group of an NASL franchise. The first two, Style and Playing Surface were unique to professional soccer while the remaining three variables have been identified by Noll in his studies on football and hockey.[2]

Each of the professional sports studies carried out by Noll and Demmert in the early 70's identified a rank order of significant variables, an R square, and respective 'most significant demand determinants'. Baseball was the only sport in which both researchers conducted a study, Noll's producing an R square of 69 percent (seven

significant factors at the 0.05 confidence level) and Demmert's an R square of 65 percent (five significant factors at 0.05). These results compare favourably with the R square of the present study which was 67 percent, with eight significant factors at the 0.05 level. Past Record was identified in these studies as the 'most significant' determinant of attendance at major league baseball. This was common to both baseball studies, whilst the key variable in the present study was the Number of Stars.

In other studies, Noll (1971) found that both football and hockey shared the 'most significant' attendance determinant of Stadium Capacity. A possible explanation for this may have been that, when the studies were carried out, both sports were in the enviable position of having numerous franchises that sold out for every home game. Stadium Capacity, in placing an upper limit on attendance, acted as a constraining factor and thus accounted for a substantial part of attendance that could not be accounted for by other variables. The conclusion to be drawn from this is that the sport in question had excess demand. These studies also had relatively high R squares with football at 82 percent and hockey at 78 percent, each as a result of five significant variables at the 0.05 level of confidence.

The 'most significant' variable identified in the study on basketball was NBA membership (R square 84 percent for seven significant variables at the 0.05 level). At the

time of the study in 1969/70 a rival league, the ABA (American Basketball Association) was in existence. Any franchise that belonged to the NBA, the established and apparently more credible operation had an advantage in terms of attracting support for a variety of possible reasons. A summary of these findings is provided in Table 17.

In the present study four demand determinants were statistically significant at the 0.05 confidence level under all three conditions; 'independent' (Table 3), 'collective' (Table 5) and 'selective' (Table 4), in determining attendance. The first of these was the Number of Stars, by far the 'most significant demand determinant'. This variable was the first selected in the stepwise regression analysis and accounted for over 48 percent of the variance. A particularly large proportion given that the remaining eleven 'collectively' significant variables accounted for only an additional 19 percent of the explained variance, and the other four variables in the best model explained a further 12 percent. The importance of star players to individual franchises is considerable, due perhaps to the general North American desire of attempting to procure the very best in what ever endeavour they pursue.

A reflection of this was shown by the NASL's efforts during the late seventies to bring top name players to the league in order to portray a 'quality image', and to attract media and fan support. During the study period (1978-83),

Baseball (Noll 1971)	Basketball (Noll 1971)	Football (Noll 1971)	Hockey (Noll 1971)	Soccer (Parratt 1984)
Past Record	NBA	Stadium Capacity	Stadium Capacity	Number of Stars
Population	Population	Past Record	NHL	Stadium Age
Income	Black Population	Climate	Climate	Sports Competition
Stadium Age	Number of Stars	Population	Team Quality	Population
Sports Competition	Team Quality	Ticket Price	Sports Competition	Climate
Number of Stars	Income	(R Square 82%)	(R Square 78%)	Broadcasting
Black Population	Ticket Price			Income
(R Square 69%)	(R Square 84%)			Team Quality
Demmert (1973)				(R Square 67%)
Past Record				
Sports Competition				
Team Quality				
Population				
Broadcasting				
Stadium Age				
Years in City				
(R Square 65%)				

(All factors collectively significant at the 0.05 confidence level)

Table 17 Significant Factors/Demand Determinants and Attendance for Major League Sport In North America

those teams attracting the greatest crowds had the largest number of star players. This helps to explain why the New York Cosmos, in placing the highest Number of Stars on the annual NASL all- star teams also had the highest average per game attendance during the study period, except for the 1983 season. The presence of talented players although aiding the performance of a given team, is also likely to attract spectators anxious to see them. This notion was supported by the considerable impact of Pele's NASL playing career from 1975 to 1977, when his presence helped boost the Cosmos' attendances from an average 3,758 in 1974, to 34,142 in 1977. The subsequent arrival of world class performers such as George Best (1976), Franz Beckenbauer (1978) and Johann Cruyff (1979) also helped create considerable interest.

The second 'most significant' variable was Stadium Age which accounted for an additional 5.7 percent of the total variance (Table 4). This factor appeared to be responsible for an increase in attendance based on two elements. Eirstly, the improved facilities offered easy access, comfort, a better view and concessions and secondly, the novelty value. This would help to explain the increased attendances of certain franchises, including the Seattle Sounders (1976), the New York Cosmos (1977) and the Vancouver Whitecaps (1983). All three franchises moved into new stadia and witnessed a dramatic increase in average

attendance; The Sounders' average attendance increased from 16,830 in 1975 to 23,828 in 1976, the Cosmos' from 18,227 in 1976 to 34,142 in 1977 and the Whitecaps' from 18,251 in 1982 to 28,441 in 1983.

There is the possibility that the novelty of a new stadium wears off slowly but steadily with the decline occuring at a different rate for respective franchises. The New York Cosmos experienced a marked decline in attendance from a per game high of 47,850 in 1978 to the 1983 level of 27,242. The composition of the team, in terms of personnel and team quality remained constant, but the negative effect of 'stadium age' may have been in operation here. Similarly, the Seattle Sounders and the Vancouver Whitecaps witnessed a drop in attendance in the following years.

This variable may also help to explain in part the failure of franchises such as the Chicago Sting and the Los Angeles Aztecs, to attract consistent support. The home fields of the Sting (Comiskey Park, Wrigley Field and Soldier Field) and the Aztecs (Memorial Coliseum, Rose Bowl), were all over 50 years old. The amenities offered may not have been as modern or sophisticated as those of more recently constructed stadia, and their location in less accessible or downtown areas could have made the stadia even less attractive to prospective fans.

Team Quality, as an 'independent' factor was significant at the 0.10 confidence level, ranking eleventh

of the sixteen variables (four of which were not significant, Table 3). When grouped with other variables, however, a team's current winning percentage became the third most significant demand determinant in the best model, adding 3 percent to the R square (Table 4). Team Quality was also the eighth most significant factor in the full regression model (Table 5).

The importance of Team Quality appears, therefore to be associated with those of Stadium Age and Number of Stars. The latter provides an obvious link with Team Quality and in so doing, leads to the suggestion that if attendance is to increase, an individual franchise should always try to win.[3] The fickleness of fans can perhaps be explained by this factor, particularly with reference to the Chicago Sting (1980-82) and the Seattle Sounders (1979-81). The Chicago Sting attracted an average attendance of 16,067 in 1981 as Soccer Bowl Champions, an increase of 4,007 per game over the previous year. However, in 1982 their record fell to 13-19 and attendance dipped to 9,377 per game. In addition, the Seattle Sounders reached the Soccer Bowl semi-finals in 1980 and attracted 23,566 to each home game, this after they had ended the 1979 season with a 13-17 record and an average attendance of 18,998. The increase in support from 1979 to 1980 disappeared in 1981 as the Sounders missed the play-offs and attendance fell by 5,520 per game.

The relationship between success on the playing field and at the turnstiles is perhaps to be expected, but the play-off system does allow a franchise to win the overall title following only an average season. As a result a team may not possess the aura of success (team quality) until after the season has been completed. This could have accounted for the lack of spectator interest in the Tulsa Roughnecks in 1983. Beginning the season with a 2-8 record, and finishing the regular season at 17-13 (sixth overall), before becoming Soccer Bowl Champions, they recorded an average attendance of 12,376, down over 2,000 per game from 1982 when the team finished in eighth place overall. This variable may also be associated with Past Record in that the current success of a franchise may be overlooked by prospective spectators, if the team has a history of missing the play-offs, losing home games and/or being unable to sustain a winning streak.

The small negative correlation between attendance and Income (Table 1) suggested that a limited increase in income will help produce a corresponding decrease in average per game attendance. The fifth 'independently' significant variable (Table 3), Income was also seventh 'collectively' at the 0.05 confidence level and is the fourth variable selected as part of the best model. The effect of Income on attendance is thought to be very complex, involving consideration of many hidden factors. These include

inter-city differences with regards to 'industrial structure, region, educational attainment and age composition of the population'.[4] However, the fact that increased income corresponds to a decreased attendance may provide an explanation of the relatively higher attendances in cities such as New York, Tampa and Seattle, where lower average incomes were found. The possibility exists that the cost of attending an NASL game is apparently lower than that of other professional sports or other entertainment forms, and thus provides a viable leisure time alternative.

Ethnic Population was the last variable selected as part of the stepwise regression best model (Table 4), increasing the R square to 60 percent for the five significant variables. In addition this variable was ranked sixth in terms of 'independent' significance at the 0.05 confidence level (Table 3).

The historical background of soccer in North America has been linked very closely to the ethnic composition of the population. Throughout the continent there are particularly high percentages of ethnic groups in cities with established franchises such as New York, Vancouver and Toronto. This may provide an explanation for the recent policies adopted by the Toronto Blizzard and the Vancouver Whitecaps. The Blizzard signed famous Italian striker Roberto Bettega in 1983 in an apparent effort to secure the support of the considerable Italian population in Toronto.

As a result attendance increased in 1983 to 11,645 per game from 8,152 in the previous year. In the hope of attracting the large number of prospective British fans, the Whitecaps built a team with a strong British bias in the late seventies under Irish head coach John Giles. This may partly explain the increase in attendance from an average 11,897 in 1977 to 26,833 in 1980. Consequently, the view that soccer remains, to some extent, an immigrant sport is supported by the results of this study and apparently continues to influence franchise policy today.

Sports Competition was the first of six variables that were both 'collectively' (ranked last among the significant variables at the 0.10 level, Table 5) and 'independently' significant, (third at the 0.05 level of confidence). This factor offers an indication of how the general sporting interest of a city can help or hinder team support. Whilst those cities with the most major league teams in the various sports have the highest populations, the attendance of an NASL franchise is seemingly related to the quality and quantity of professional sports available in the city. The success of a city's sports teams apparently helps to create greater interest in the other major league sports, 'cities with more sports interest will tend to have both high attendance per team and more teams'.[5] This helps to explain why, in 1983, the Chicago Sting reported an average attendance of 10,611 (up from 9,377 in 1982, Sports

Competition Index 7.20). In the same year, the USFL introduced the Blitz to the city and the NHL's Black Hawks experienced a vastly improved season, (SC Index 8.97). Similarly, the San Diego Sockers attracted an average 11,718 spectators per game in 1979 with a SC Index of 4.65, compared to the 1978 figure of 5,535 (SC Index 3.08).

Population was linked to Sports Competition, and was the seventh significant variable selected in the stepwise regression model, at the 0.05 confidence level, (Table 5), following a high ranking of second in the univariate analysis (Table 3). This ranking shows how important Population is as a single variable when considering attendance and perhaps helps to explain why cities with potential markets of under one million have been unsuccessful in supporting NASL franchises. Those which have failed include Memphis, Jacksonville, Edmonton, Calgary and Rochester. There exists much greater crowd potential in the larger cities. This means that it would require a smaller percentage of the total population of New York (9,264,000 in 1983) than that of Tulsa (660,000), for example, to provide an attendance of 20,000.

Climate is another complex variable which may give rise to two contrasting effects. Firstly, spectators may choose not to attend sports events if the weather is bad, but secondly, they may also attend less frequently if they live in cities with generally good weather since they have

greater opportunity for more active outdoor recreational pursuits.[6] The latter explanation appears to be supported by this study as higher attendances were evident in cities with lower average playing season temperatures. The climatic values of Vancouver, Seattle and Montreal (each under 66 Fahrenheit) help to explain the consistently high attendances for NASL franchises in these cities. The Whitecaps reached an average attendance high of 28,441 in 1983, the Sounders drew 23,566 in 1980 and the Montreal Manic attracted 26,961 in 1981. Conversely, cities with more sunshine during the playing season such as Dallas, Atlanta and Houston (over 74 Fahrenheit) failed to attract crowds of over 6,500 per game. The relative importance of Climate is reflected by the 'independent' significance ranking of seventh (Table 3) and the 'collective' significance ranking of fourth (Table 5), both at the 0.05 level of confidence.

Past Record is concerned with the tradition of success or failure for a given franchise and as such, was 'independently' significant at the 0.05 confidence level ranking ninth (Table 3) and was also ninth in terms of 'collective' significance at the 0.10 level (Table 5). This relatively low ranking suggests that NASL franchises, have not yet, for the most part, created a sense of tradition. However, a number of franchises appeared, at a time when their current winning percentages were below average, to

have benefited from previously successful seasons and this may in part be explained by the effect of Past Record. These include San Diego, who in 1979 had a Past Record of 61.43 and a Team Quality of 54.05 when their attendance increased from 5,535 to 11;718; Toronto, who in 1980 had a Past Record of 50.23 and a Team Quality of 43.75 when their attendance increased from 12,980 to 15,043 and Fort Lauderdale, who in 1979 had a Past Record of 60.00 and a Team Quality of 53.13 when their attendance increased from 10,888 to 13,707. These increases in attendance may have been caused by a number of factors, but it is possible that past success would have a positive effect by predisposing the populace to viewing the franchise in a favourable manner.

The effect of a generally unsuccessful Past Record on attendance is more difficult to gauge, because only one franchise has survived long enough to put together a number of consecutive losing seasons. The Golden Bay (San Jose) Earthquakes from 1978 to 1982 inclusive, had an aggregate winning percentage of only 31.40, while their average per game attendance fell from 15,092 to 12,925.

Broadcasting reflected the level of electronic media exposure given to individual franchises. This variable was eighth among the significant 'independent' variables (Table 3) and sixth 'collectively' (Table 5), both at the 0.05 confidence level. The importance of this variable is

related to the ability of local coverage to create interest in the community. The success of franchises in Vancouver, New York and Tampa Bay, in terms of attracting consistent support, suggested that radio and/or television coverage may be partly responsible for this. Each of these franchises, have contracts which allow for the coverage of home games on the radio (thought to be less of a threat in reducing in-person attendance than television), and away games on television. Disbanded franchises with relatively low attendances in their final years of operation, such as Montreal (9,151 in 1983), Seattle (8,181 in (1983) and Jacksonville (7,160 in 1982) appear to have suffered partly because of their lack of media support.

The Number of North Americans was a variable unique to this study and was made increasingly relevant as the NASL makes continued efforts to increase tne number of home-grown players on individual rosters. By encouraging the participation of North Americans, the league hopes to change the image of soccer as an imported game and ultimately attract the consistent attention of American sport's fans. As the tenth 'independently' significant (Table 3) and the eleventh 'collectively' significant variable (Table 5), both at the 0.10 level of confidence, the effect of this variable on attendance to date has apparently not been as strong as other variables.

There were two variables which proved to be

significant under only one condition, Years in City and Ticket Price. The latter was 'independently' significant at the 0.05 confidence level being ranked third (Table 3). However, there were inaccuracies in the calculations made concerning ticket prices which possibly resulted in errors for individual franchises. There was also the additional problem of ticket discounting, a widespread practice which was adopted by many NASL franchises during the study period. This necessitates distinguishing between measured and actual ticket prices, and a more detailed breakdown of the percentage of seats available at each ticket price. The positive correlation between increased ticket price and increased attendance may be a result of inaccuracies of measurement rather than because NASL games are Giffen goods, conspicuous consumption goods or perfectly inelastic goods.[7] The possibility does exist however, that the better teams charge higher prices, and this would indeed help partially explain the higher attendances in cities such as New York and Vancouver, where ticket prices for 1983 were the highest in the league at 7.50 and 7.31 dollars respectively.

Years in City was 'collectively' significant at the 0.10 confidence level and was ranked tenth of the eleven significant variables in the full set regression model (Table 5). This is also a variable which may be responsible for two possible effects on attendance. As an established part of the community, an NASL franchise may attract or

repel support merely by being known in the area. Furthermore, a complacency element may exist which may result in the franchise, after a certain number of years in operation, being viewed as stale, unexciting and unworthy of support. The present study apparently conforms to the first of these notions, particularly when the high degree of franchise shifting that has taken place throughout the history of the NASL is considered. In this way franchises build up a core of support year after year, which would help to explain the increased support for franchises such as Tulsa, which attained a per game attendance high of 19,970 in 1980 in their third year of operation; San Diego which drew a high of 14,798 in 1981 after returning to the city in 1978 following an unsuccessful season in Las Vegas, and Fort Lauderdale, who attracted an average high of 14,737 in 1980 having been formed in 1977.

In determining attendance in Problem P1, the remaining three variables, Stadium Capacity, Playing Surface and Style were all non-significant at the 0.10 level of confidence for all conditions. However, each proved to be significant following the discriminant analysis undertaken in Problem P2, in which those factors influencing the attendance group of NASL franchises were determined.

The first of these, Stadium Capacity, was ranked fourth 'collectively' (significant at the 0.05 confidence level, Table 11) and tenth 'independently' (significant at

the 0.10 level, Table 10). Although Noll suggested that 'stadium capacity is a constraint on attendance not a factor in an individual's decision to attend',[8] the level of attendance in the NASL and the size of the average stadia preclude this factor from imposing an upper limit. Therefore, the importance of this variable, particularly when linked with other variables may lie in the NASL's attempts to promote a major league image. By playing in large modern stadia, which are frequently used by franchises in other sports, the notion of top level competition may be generated. This may therefore entice spectators to attend. This would explain the higher attendances of Attendance Group Three, which showed an average stadium capacity of 54,154, compared to the Group Two average of 45,501 and the Group One average of 44,961 (Table 9). The New York Cosmos, as the perennial 'main attraction' play in the 76,891 capacity Giants Stadium, while the defunct Rochester Lancers played in Holleder Stadium (20,000) and attracted crowds in the 8,000 range.

Playing Surface was significant under both conditions, ranked eleventh following the stepwise discriminant analysis (Table 11) and seventh in the univariate analysis (Table 10), both at the 0.05 level of confidence.

Soccer has been played almost exclusively throughout the world on grass. Purists have suggested that this should

continue to be so, even in the light of the numerous multi-purpose sports stadia constructed during the 70's. However, the economics of professional sport in North America were such that, it was thought that, in terms of financial gain, the game would prosper from being played on artificial surfaces. Where grass fields existed in suitably sized stadia they were utilised, but the trend towards installing artificial turf to offset maintainence difficulties and problems of wear, meant that an increased number of NASL franchises performed on unfamiliar surfaces.

It is perhaps surprising therefore, that a number of franchises playing on artificial surfaces were successful in attracting support, although there were certain advantages to the new stadia which quickly became apparent. These included its all-weather nature, its facilitation of finely tuned skills and the fact that such facilities were widespread. These factors may help to explain why franchises with higher attendances (Group Three) had higher means in terms of Playing Surface, than those in groups Two or One. A figure of 1.68 (Group Three) compares favourably with that of 1.44 (Group Two) and 1.36 (Group One) as shown in Table 9.

Style was a factor unique to this study. It was 'independently' significant at the 0.05 level of confidence, ranking third behind Team Quality and Number of Stars in the univariate analysis (Table 10). This variable

was used to measure the entertainment value of a given franchise as opposed to its 'successful' performance. The ability of teams to play attractive, attacking soccer, was normally reflected by the number of goals scored but this may not be apparent from the league standings. As a result certain teams may gain the reputation of being 'entertaining' or 'boring' to watch, despite the results which they achieve. This may explain how franchises such as Minnesota and Tampa Bay could be classified in Attendance Group Three, and Toronto and Philadelphia were found in groups Two or One. The importance of Style is reflected in Table 9 with Group Three showing the highest value at 2.44, followed respectively by values of 2.12 (Group Two) and 1.74 (Group One).

When the results of Problem P1 and Problem P2 were compared, a number of similarities became apparent. Certain factors had a high level of significance and a high ranking in both analyses. Team Quality, for example, ranks first under both conditions in P2 after relatively high rankings in P1, Number of Stars (most significant in P1) is second 'independently' and third 'collectively', at the 0.05 level in P2. In addition, Broadcasting was placed 'independently' eighth and 'collectively' sixth, in P1 and sixth and seventh in P2, while Ethnic Population was 'independently' sixth in P1, and eighth in P2.

Other factors which were statistically significant

in one analysis were not significant in the other. The most notable, Stadium Age, was ranked 'independently' fourth and, 'collectively' and 'selectively' second in P1 (all at the 0.05 confidence level), but was not statistically significant and therefore unranked in P2. This may be due to the different statistical analysis used and, perhaps more importantly, to the slight difference in terms of the respective problems. Whilst P1 was concerned with determining those factors influencing attendance per se, P2 focused more specifically on the determinants affecting the artificially created levels of attendance.

The third Problem P3, was concerned with a different dependent variable, namely 'permanence' and more specifically with identifying those factors which determine the longevity of a franchise. The following discussion will therefore, present a general overview of those variables which were statistically significant.

The two conditions in Problem P3 are detailed in Table 14 (univariate analysis) and Table 15 (multivariate analysis), and are similar to those adopted in Problem P2. From these analyses, variables were determined as either 'independently' or 'collectively' significant.

The first three 'most significant' variables were concerned with the important elements of tradition and revenue. Past Record, as the first variable ranked under both conditions, illustrated the importance of a winning

tradition for the sound establishment of a franchise in a given SMSA. In bringing recognition to a city, a successful franchise will evidently attempt to promote its winning image for as long as possible. Similarly, Ethnic Population (second under both conditions) may reflect the strength of the immigrant community in providing a base for a franchise. This is reflected by the relatively high Ethnic Population mean for Permanence Group Three shown in Table 13. The knowledge, interest and potential support from this sector of the population may be what motivates a franchise to move initially to a certain city and then remain there, even though different factors may indicate otherwise. The effect of Attendance on permanence may be linked to the revenue producing aspect of this factor, rather than its function as a measure of interest. The need to generate sufficient income at the gate in order to survive (even allowing for the considerable financial input of the owners), is reflected by the attendance means for each Permanence Group in Table 13. The Group Three figure of 17,767 is an indication of the significance of this variable, particularly when compared with the mean of Group Two (12,691) and Group One (10,088).

The above variables, all significant at the 0.05 level of confidence, help to explain the group classification of franchises such as New York (Group Three - Past Record 64.16, Ethnic Population 21.7 and Attendance

26,615 for 1983), Fort Lauderdale (Group Two - Past Record 57.97, Ethnic Population 12.2 and Attendance 13,442 for 1981) and Memphis (Group One - Past Record 33.33, Ethnic Population 1.2 and Attendance 7,137 for 1979). The effectiveness of the significant factors in determining permanence groupings is outlined in Table 16, which shows 72.3 percent of all franchises to be correctly classified.

Five other variables were found to be significant under both the 'independent' (Table 14) and the 'collective' conditions all at the 0.05 confidence level. The first of these, Number of Stars, is perhaps a further reflection of franchise image, with more stars translating into increased franchise longevity. This may also be true of Team Quality and Style, which on an on-going basis may project a sense of quality from year to year. This may help to explain the continued existence of the Vancouver Whitecaps who, in 1983, had the following values for the relevant variables: Number of Stars 11, Team Quality 75.75 and Style 3, which compare favourably with the mean values presented in Table 13.

The effect of the two remaining 'double' significant variables suggested once more, the probable importance of a sense of tradition. Older stadia were apparently related to increased permanence. A similar effect seems to derive from the amount of media coverage given to a franchise, possibly by improving its image and developing community awareness. Therefore the significance

of both Stadium Age and Broadcasting outlined in Table 13, assists in the understanding of why franchises in Philadelphia, Dallas and Jacksonville may have failed.

Of the five variables significant in only one condition, Ticket Price ranked eighth in the univariate analysis at the 0.05 level, Table 14. There is a possibility that, while increased Ticket Price relates to increased permanence (Table 13), this factor was a reflection of the strength of a given franchise. Perhaps a new franchise anxious to attract fans will offer lower ticket prices than a more established franchise, which has developed a core of support. Consequently, ticket prices are likely to increase in relation to franchise longevity, a notion which provides an explanation as to the permanence grouping of Montreal (Group One - Ticket Price $4.50) and Chicago (Group Three - Ticket Price $5.33), in 1981.

The remaining four 'single' significant variables, all 'collectively' significant at the 0.05 level of confidence (Table 15) were perhaps, reflections of the sporting interest that exists in a given city. Sports Competition (ranked fourth) and Population (tenth) are indicative of the level of general interest in sports referred to earlier. Number of North Americans (eighth) may indicate the desire of owners and promoters to attract support from outside of the immigrant community, while Stadium Capacity (eleventh) helps to portray a possible

feeling of superior sporting competition. These variables do not however, provide the more clearly defined levels of each variable, in terms of group means, which distinguish between the three permanence groups (Table 9).

There were three variables termed non-significant with regards to permanence determination, Income, Climate and Playing Surface. This may help to explain why franchises have proved both successful and unsuccessful, in terms of continued operation, in cities with a variety of income levels, weather conditions and playing surfaces.

In recognising the limitations imposed by the nature of this study, optimism is generated with regards to the theoretical and practical implications of this research and for the future of professional soccer in North America. These implications relate principally to three areas: demand theory, professional sport and professional soccer.

There has been an increased emphasis placed upon the 'service' sector of the American economy in recent years, a dimension of demand which has been analysed in a number of areas. For example, transportation (Perle 1964), hospital facilities (Rosenthal 1964) and travel (Quandt 1970). These studies reflected a general trend in which the interpretation of necessities moved beyond perishable and durable goods. The present study makes a contribution to this aspect of demand theory by further expanding the

boundaries which determine the service sector.

Economic theorists such as Drummond, Rose and Lipsey, have identified specific factors which are important in influencing demand, the most significant of which was generally price. As previously stated however, 'the whole question of non-price determinants of demand'[9] must be considered. It is in providing an insight into this facet of demand theory that the present study makes a theoretical contribution. The significance of a cluster of factors, of which the most important was quality (reflected in, for example, Number of Stars, Stadium Age and Team Quality), was evident.

The earlier studies on major league professional sport represent part of this broader expansion of the application of demand theory to the service sector. Drawing upon the work of economic theorists, investigators such as Noll and Demmert, initiated concrete and informed analyses of the previously overlooked sector of professional sport. Soccer, however, was not included in this expansion and the present study represents therefore an attempt to redress this imbalance.

The application of demand theory to professional soccer, allows, then, a more detailed analysis of the sport. A shift in focus from the qualitative to the quantitative and from the descriptive to the explanatory, is essential if the past and present failings of the sport are to be

understood and corrected.

The practical implications of this study are concerned with the ability of soccer to survive and progress at the professional level in the future. The current problems of professional soccer in North America, characterised by dwindling franchise numbers and a corresponding decline in attendance, reflect the lack of knowledge and foresight amongst decision makers during the last two decades. With no accepted research on which to draw, past lessons have not been learned. By providing quantifiable data and a statistical base, this study may prove to be useful to current and prospective franchises.

The suggestion is therefore, that by understanding the very basic elements of demand for the sport, franchises will have the necessary foundations on which to build. Consideration should be given to attaining the required levels of each significant variable relating to the specified attendance groups, in conjunction with the on-going practices of positive management, sound financial backing, promotion of community awareness and all the aspects of conventional long-term business planning. This would provide a realistic programme for stability and growth.

The identification of those factors significant in determining attendance and permanence are important to on-going franchise operations. However, arising out of this

analysis is a predictive model which has interesting possibilities for franchises requiring tight budget control, a previously neglected aspect of their operation. This model, derived from the General Linear Models (GLM) procedure in the stepwise regression analysis of Problem P1, outlines actual and predicted attendance for each NASL franchise during the study period (Appendix 2). Known values or estimates for each significant variable can be plugged into the model, in order to predict 67 percent of a franchise's attendance for the season based on the R square. Whilst there will exist inaccuracies in the predicted values due to error and the 33 percent of the variance which is unexplained, an indication of expected support could do much to offset the recent trend of disbanding franchises.

It must be emphasised however, that a predictive model such as this cannot possibly account for the numerous confounding variables that exist. The presence of franchise specific factors such as mis-management, lack of marketing and a poorly constructed schedule, will affect negatively a team's ability to attract spectators, whilst sound public relations, innovative promotions and committed ownership will have a positive effect.[10]

FOOTNOTES-CHAPTER VI

[1]The comparisons made here are drawn extensively from the following studies:

R. G. Noll, The Government and the Sports Business. (Washington D. C. : The Brookings Institution, 1974). pp. 115-157.

H. Demmert, The Economics of Professional Sports. (Lexington, Massachussets: D. C. Heath and Company, 1973). pp. 55-70.

[2]Noll, Government. p. 124.

[3]Demmert, The Economics. p. 66.

[4]Noll, Government. p. 118.

[5]Ibid., p. 124.

[6]Ibid., p. 119.

[7]A Giffen good, named after Victorian economist Sir Robert Giffen, refers to a good which has an upward sloping demand curve. This suggests that an increase in the price of a good or service leads to a corresponding increase in demand.

Conspicuous consumption goods are those thought to be consumed for their 'snob appeal' rather than for any intrinsic value. Examples of such goods might include diamonds and Cadillacs.

Perfectly inelastic goods is a term applied to goods or services for which an increase in price has virtually no effect on demand. This would give rise to a vertical demand curve.

[8]Noll, Government. p. 143.

[9]E. D. Perle, The Demand for Transportation. (Chicago: University of Chicago Press, 1964). p. 125.

[10]In addition, the credibility of the NASL has suffered in recent years due to factors such as constant adverse publicity, the apparent growth and acceptance of indoor soccer and the lack of continuity in league affairs from season to season.

CHAPTER VII

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

In Chapter I a historical background to the current problems of falling attendances and dwindling franchise numbers experienced by professional soccer in North America, was presented. Particular attention was paid to the period 1960-83, and in high-lighting the changing fortunes of the NASL, this lead to a review of the relevant literature. The lack of research on soccer was outlined in the second chapter, which also provided insights into the studies carried out on other professional sports. These gave rise to the idea of applying an economic tool (demand theory) to professional soccer. As a result, an overview of demand theory was provided highlighting its relevance to this area. This lead to the formulation of the research questions in Chapter III.

The major purpose of this study was to investigate the spectator demand for professional soccer in North America by measuring the effect of specified factors on in-person attendance at NASL games. This gave rise to two minor problems; the identification of those factors significant in determining firstly, the attendance level of individual franchises and secondly, the longevity of operation of individual franchises.

Twenty-four hypotheses were posited to direct the investigation, relating to the significance of each factor in Problem P1, and to the significant difference between attendance groups (P2) and permanence groups (P3).

In Chapter IV, each factor was explained along with the procedures for data collection and statistical analyses. The results of the regression analyses undertaken in Problem P1 produced significant factors under three different conditions. These are 'independent' (univariate analysis), 'collective' (multivariate analysis) and 'selective' (best model/multivariate analysis). The independently significant factors were: Number of Stars, Population, Ticket Price, Stadium Age, Income, Ethnic Population, Climate, Broadcasting and Past Record (at the 0.05 confidence level), and Number of North Americans, Team Quality and Sports Cmopetition (at the 0.10 level). The collectively significant factors were: Number of Stars, Stadium Age, Sports Competition, Climate, Population, Broadcasting, Income and Team Quality (at the 0.05 confidence level), and Past Record, Years in City and Number of North Americans (at the 0.10 level). The selectively significant factors were: Number of Stars, Stadium Age, Income, Team Quality and Ethnic Population (all at the 0.05 confidence level).

In Problem P2, the discriminant analyses produced ten 'independently' significant factors, which were used to

determine the attendance level of individual franchises. These were, Team Quality, Number of Stars, Style, Past Record, Ticket Price, Broadcasting and Playing Surface (at the 0.05 confidence level), and Ethnic Population, Sports Competition and Stadium Capacity (at the 0.10 level). Under the 'collective' condition there were twelve significant factors at the 0.05 confidence level; Team Quality, Past Record, Number of Stars, Stadium Capacity, Ticket Price, Climate, Broadcasting, Sports Competition, Years in City, Income, Playing Surface and Number of North Americans. The number of franchises correctly classified according to 'actual' and 'predicted' group membership was determined at 68.1 percent.

The discriminant analyses in Problem P3 produced nine 'independently' significant factors at the 0.05 confidence level, which determined franchise longevity. These were Past Record, Ethnic Population, Attendance, Number of Stars, Broadcasting, Style, Team Quality, Ticket Price and Stadium Age. There were twelve 'collectively' significant factors at the 0.05 confidence level; Past Record, Ethnic Population, Attendance, Sports Competition, Stadium Age, Number of Stars, Broadcasting, Number of North Americans, Team Quality, Population, Stadium Capacity and Style. The number of franchises classified correctly according to 'actual' and 'predicted' permanence group membership was 72.3 percent.

The hypotheses were tested in Chapter VI, with the decisions for Problem P1 made in accordance with the three conditions mentioned earlier. The alternate hypotheses stated for Problems P2 and P3, were all accepted. Therefore, each of the attendance groups (high, medium and low), and each of the permanence groups (permanent, non-permanent and temporary), were statistically different.

A general discussion of the results followed as they related to the three research questions. This included a brief analysis of each variable and their possible effectiveness with regards to determiming attendance and/or permanence. The final section addressed the theoretical and practical implications of the study.

Conclusions

The preceding analyses gave rise to several conclusions as to NASL attendance and franchise permanence:

1) The average per-game attendance for each franchise will be higher when there are more star players, a newer stadium, a winning team, a lower average income, a larger ethnic community, more successful teams in other sports, a higher population, a cooler seasonal climate, a history of success, local radio and television coverage, a smaller percentage of North Americans on the roster, higher ticket prices, a longer history of operation, a higher stadium capacity, an artificial playing surface and more goals

scored.

2) A franchise will survive longer if it has a record of past success, a higher ethnic percentage of the total population, higher average per game attendances, more star players, a winning team, score more goals, a newer stadium, local radio and television coverage, higher ticket prices, more successful professional teams in other sports, a larger population, fewer North Americans on the roster and a higher stadium capacity.[1]

The suggestion is that the under the stated conditions franchises will attract larger crowds and survive longer, but this will not always be the case. The recent history of the NASL has witnessed a lack of support and/or failure for an increasing number of franchises based on factors outside the scope of this study. The Minnesota Kicks, 'hailed as the brightest of the NASL's franchises'[2] due to their excellent crowds, entertaining play and successful marketing ploys were disbanded in 1981. 'Once the owners sold the team to an English group, it started to fall apart.' They tried to manage the franchise from overseas and when problems arose they were never solved and when they attempted to re-sell to local investors 'litigation became so complicated that it was impossible to salvage the Kick's.'[3] The Seattle Sounders 'once a marvelous franchise'[4] folded in 1983 after ten years in the league. Attendance had fallen to an average 8,181, from a high of

23,566 in 1980. The franchise had been taken over early in 1983 by a new prinipal owner, Bruce Anderson, who in attempting to Americanize the franchise virtually overnight, by removing the British element including popular coach Alan Hinton, alienated the city's soccer fans. Samuels explained the loss of another NASL franchise thus: 'ownership problems - and only ownership problems - are responsible for the demise of the Seattle franchise. Bruce Anderson single handedly destroyed the Sounders.'[15]

A further example is provided by the Montreal Manic who drew the second largest average per game crowds in their first year of operation in 1981, 26,916. This included crowds of over 50,000 in the play-offs. Second again in 1982 (once more behind New York), with almost 21,000 per game, the owners (Molson Brewery) decided that 1983 would be the Manic's last year and that in 1984 the team would become Team Canada, to rival the Washington D.C. based Team America. The plan was announced before the start of the 1983 season and met with instant disapproval from the fans. This was reflected by the season long decline in attendances. The final average crowd figure was 9,151 per game and NASL soccer in Montreal was no longer a reality.

These are but some examples of the disasters that have befallen individual franchises that cannot be explained by this study. However, the demise of such seemingly well-supported franchises has had serious repercussions on

the NASL as a whole, and the public's perception of professional soccer in particular, and may in some way help to explain the general decline in attendances and franchise numbers since 1980.

This study provides a basis for current or prospective NASL franchises in terms of gauging the possible public interest, and the subsequent constructing of long term plans. But this study will only be applicable if several other considerations are firstly, adhered to and secondly, resolved:

1) owners and investors must recognize professional soccer as a business, a part of the entertainment industry,

2) owners must make a committment to outdoor soccer, financially and in the long-term,

3) franchises must start small and gain community support,

4) franchises must carry out on-going market research to determine what the fans want,

5) the NASL must provide a quality product that demands the attention of network television,

6) the NASL must accept its position as the 'fifth' major league sport, at the present time,

7) the governing bodies (the USSF, the CSA, the NASL, the MISL and the USL in particular) must work towards a common goal, the promotion of soccer in North America,

8) the governing bodies at each level (minor, youth,

college and professional) must recognize the demands of the other levels and promote the continuous development of the North American born player.

The future of the NASL two months after the end of the 1984 season is uncertain. The nine team league was further reduced by the folding of the Tulsa franchise and the apparent demise of the Golden Bay Earthquakes. In addition, the much publicised bid by four NASL franchises (Chicago, San Diego, New York and Minnesota) to join the MISL was accepted, and both Chicago and San Diego have suggested that their defection will be permanent. The Vancouver Whitecaps struggled to complete the 1984 season amidst serious financial problems, and the subsequent departure of almost their entire playing and coaching staff, raises considerable doubts with regards to their entry in the NASL in 1985. The intentions of the Tampa Bay Rowdies are not known at this time.

Only the Toronto Blizzard, under the guidance of long time NASL figure Clive Toye, appear to be optimistic over the league's future. Toye has, according to recent press reports, compiled a 43 page report aimed at the continuation of a professional soccer league in North America. Whilst rumours persist as to the contents of this report, indications are that the 1985 league would include Toronto, New York, Vancouver, Minnesota, perhaps Tampa Bay and possible franchises in Seattle, Los Angeles, Portland

and/or Charlotte (North Carolina). There have also been suggestions that as many as four Mexican teams might join the league. The feeling of optimism generated by this report and the moderate success of North America's other outdoor professional soccer league, the United Soccer League (USL) with franchises in New York, Rochester, Buffalo, Fort Lauderdale, Jacksonville, Charlotte, Dallas, Houston and Oklahoma City, suggest that professional soccer will survive in 1985.

This very situation leads once again to the importance of the present study as a basis for determining the possible success of professional soccer franchises. The time may have come where the sport must rebuild and by so doing 'go back to the basics',[6] of which one is quite simply, 'is there a demand for professional soccer?'

Recommendations

This study measured the effects of sixteen factors on attendance and franchise longevity in the NASL, the results of which may provide the basis for future research as follows:

1) A similar study including additional quantitative factors including stadium location, various socio-economic variables such as age, sex and education and the number of front office personnel, which may relate to the effectiveness of marketing and community relations efforts

in a given city. In addition more detailed maesurement of existing factors including Ticket Price, Team Quality, Number of North Americans and Sports Competition.

2) A similar study concerned with individual game attendance that could measure the effectiveness in attracting crowds of a) each visiting franchise, b) competitive opponents who increase the uncertainty of outcome, c) individual promotions and other gimmicks, d) match day weather, e) scheduled day/time of each match, f) the number of days between home games, g) concession and parking charges and h) clashes with other entertainment forms,

3) Research into the areas of individual franchise income and expenditure would provide an analysis of attendance, as the major revenue producer, in monetary terms. The need for each franchise to operate as a business enterprise could be scrutinized here in order to keep losses at a minimum,

4) An analysis of the NASL in terms of its business operations. Application of Quirk and Holdiri's Theoretical Model,[7] which focused on the rules regarding the playing strengths of each franchise, division of gate receipts and television revenues in particular, could help to determine the efficiency of the league in governing the operations of its member clubs.

5) An investigation into the factors affecting demand

for indoor soccer, as a form unique to North America, could provide useful information as to the components of the game that are attractive to North American audiences,

6) A brief analysis of the other major league sports in the form of a comparitive study could produce some interesting results more in line with the findings of this study, given that the studies conducted by Noll and Demmert were carried out in the early seventies. An investigation of the recent trend towards declining attendance in the NFL and increasing baseball crowds may lead to useful information regarding contemporary in-person attendance at major league sport.

7) An analysis of the demand for professional soccer in another country where soccer, whilst having competition for spectators from other sports, continues to attract sizeable crowds as an established sport. An informative study could be undertaken in England or France, where rugby and/or cricket offer viable alternatives.

8) The possibility also exists of pursuing an investigation into the problems of soccer from a socio-cultural prospective. The view that soccer is a 'foreign' sport remains popular in many areas today. This approach to the international game may have become entrenched since the mid-nineteenth century when American football was adopted. If this is so, a general anti-soccer feeling could do much to explain the sport's constant, and

largely unsuccessful, fight for recognition.

The link between academia and the world of professional sports has much to offer both areas. The opening of a 'new' avenue for scholarly exploration helps to fill a void in the academic world, whilst both sports people and businessmen have much to gain by building the foundations of their enterprises on the findings of experimental research.

FOOTNOTES-CHAPTER VII

[1]The conclusions made here are as precise as the constraints of time and the requirements of this study allow. The possibility exists to pursue the findings of the statistical analyses employed in order to project the effect on a franchise's average attendance in concrete terms of, for example, an increase in population of 100,000, an additional five star players or a greater percentage of games won.

[2]P. Gardner, Soccer America, 12 April 1982, 18-19.

[3]R. Leigh, Soccer America, 1 November 1984, 17.

[4]Vancouver Sun, 10 August 1983.

[5]Vancouver Sun, 22 September 1983.

[6]T. Howard, Soccer America, 8 July 1984, 22.

[7]R. G. Noll, The Government and the Sports Business. (Washington D. C. : The Brookings Institution, 1974). pp. 33-80.

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APPENDIX A - DATA

KEY

A = Attendance
B = Population
C = Income
D = Ticket Price
E = Ethnic Population
F = Climate
G = Sports Competition
H = Years in City
I = No. of Stars
J = Stadium Age
K = Past Record
L = Team Quality
M = No. of N. Americans
N = Style
O = Playing Surface
P = Broadcasting
Q = Stadium Capacity
R = Attendance Group
S = Permanence Group

APPENDIX A - DATA

FRANCHISE/YEAR	VARIABLES									
	A	B	C	D	E	F	G	H	I	J
1978										
Vancouver	17243	1089	20033	5.50	29.5	59.2	02.86	06	04	26
Toronto	06233	3077	21361	4.25	33.3	65.6	02.81	09	00	19
New York	50843	9460	19214	6.50	20.1	70.8	11.83	09	15	02
San Jose	14947	1253	23927	4.00	12.6	62.0	00.00	05	00	13
San Diego	05535	1753	17815	5.00	11.9	68.0	03.08	02	02	10
Chicago	04188	7034	23245	5.00	10.1	69.2	07.35	05	04	62
Tulsa	11255	0616	17316	5.00	01.7	76.2	00.00	01	00	13
Tampa Bay	20455	1459	14465	4.50	06.7	80.6	01.31	04	07	12
Ft. Lauderdale	10888	0915	18139	5.00	11.0	81.2	01.65	02	04	26
Seattle	22578	1456	19865	3.89	07.7	60.8	04.48	05	03	02
Portland	12902	1152	18364	4.60	05.1	63.0	01.68	04	01	10
Wsahington	10783	3091	24739	5.50	07.3	73.6	04.37	08	02	12
Minnesota	32132	2059	19732	4.50	03.3	65.2	04.23	03	03	21
Dallas	08983	2677	21109	5.00	04.0	80.4	03.28	11	00	07
Los Angeles	09235	7089	19181	5.50	21.0	70.6	04.60	06	00	55
California	11171	1876	21285	4.50	11.9	70.6	03.26	01	03	12
New England	12285	3918	19793	4.50	07.1	67.2	07.93	01	13	07
Rochester	06760	0980	20520	4.00	06.0	64.2	00.00	09	01	22
Philadelphia	08279	4821	20994	4.75	05.0	71.0	06.39	05	02	07
Detroit	13981	4363	24075	5.00	06.6	67.4	05.91	02	03	03
Memphis	09518	0896	18961	3.83	01.2	77.2	00.00	01	00	13
Houston	05806	2570	22316	4.00	07.3	80.4	05.96	02	00	13
Colorado	07418	1520	19794	5.00	04.4	66.2	04.52	01	00	12
Oakland	11929	3214	21209	6.19	14.8	62.0	06.06	01	00	12
1979										
Vancouver	24445	1096	21896	6.00	30.1	59.2	02.95	07	07	27
Toronto	12980	3140	23006	4.50	33.4	65.6	04.13	10	00	20
New York	48168	9421	20304	6.75	20.4	70.8	11.94	10	20	03
San Jose	15092	1275	25697	4.00	13.1	62.0	00.00	06	00	14
San Diego	11718	1793	18758	5.00	12.4	68.0	04.65	03	02	11
Chicago	08585	7046	24811	5.00	10.3	69.2	07.35	06	06	63
Tulsa	16853	0625	18565	5.00	01.8	76.2	00.00	02	00	14
Tampa Bay	28627	1488	15521	4.75	06.8	80.6	01.61	05	09	13
Ft. Lauderdale	13707	0938	19280	5.25	11.4	81.2	01.59	03	04	27
Seattle	18998	1465	21030	3.91	07.9	60.8	04.62	06	01	03
Portland	11172	1172	19699	4.70	05.2	63.0	01.54	05	00	11
Edmonton	09924	0691	21692	5.00	18.0	57.4	03.42	01	00	27
Washington	12150	3109	26488	5.50	07.7	73.6	04.63	09	00	13
Minnesota	24856	2075	20849	4.75	03.3	65.2	04.38	03	04	22
Dallas	09275	2711	22665	5.00	04.3	80.4	03.16	12	00	08
Los Angeles	14603	7132	20325	6.00	22.1	70.6	04.54	07	06	56
California	10214	1926	22494	5.00	12.5	70.6	03.12	02	00	13
Atlanta	07350	1895	22273	4.00	02.3	74.6	05.90	07	00	13
New England	06562	3919	20972	4.75	07.1	67.2	07.63	02	02	08
Rochester	08680	0981	21271	4.50	05.9	64.2	00.00	10	00	23
Philadelphia	05770	4832	22429	5.00	05.0	71.0	06.32	06	00	08
Detroit	14526	4343	25873	5.50	06.5	67.4	05.42	03	03	04

FRANCHISE/YEAR	VARIABLES									
	A	B	C	D	E	F	G	H	I	J
Memphis	07137	0905	20569	3.83	01.2	77.2	00.00	02	00	14
Houston	06294	2649	24197	4.00	07.7	80.4	04.79	03	02	14
1980										
Vancouver	26857	1104	24300	6.50	30.7	59.2	02.96	08	03	28
Toronto	15043	3204	25228	4.75	33.4	65.6	04.24	11	01	21
New York	42771	9382	21393	6.75	20.8	70.8	11.56	11	18	04
San Jose	13168	1298	27467	4.50	14.3	62.0	00.00	07	00	15
San Diego	13890	1832	19701	5.50	12.9	68.0	04.54	04	00	12
Chicago	12060	7058	26377	5.33	10.6	69.2	07.18	07	08	70
Tulsa	19970	0633	19813	5.75	01.9	76.2	00.00	03	00	15
Tampa Bay	28263	1517	16578	4.75	07.0	80.6	01.34	06	06	14
Ft. Lauderdale	14737	0962	20421	5.50	11.8	81.2	01.50	04	05	28
Seattle	23566	1475	22194	4.50	08.1	60.8	04.25	07	14	04
Portland	10179	1192	21014	6.17	05.3	63.0	01.46	06	00	12
Edmonton	11939	0703	24451	5.00	18.1	57.4	03.25	02	02	28
Washington	19265	3128	28237	6.00	08.0	73.6	04.26	10	04	14
Minnesota	18231	2091	21965	4.75	03.4	65.2	04.56	05	01	23
Dallas	06898	2745	24221	5.25	04.5	80.4	03.21	13	00	09
Los Angeles	12949	7174	21468	6.00	23.2	70.6	04.79	08	04	57
California	07228	1974	23702	5.50	13.0	70.6	03.06	03	00	14
Atlanta	04884	1920	23729	4.50	02.4	74.6	06.31	08	00	14
New England	09240	3921	22151	5.00	07.1	67.2	06.51	03	00	09
Rochester	07844	0983	22921	4.50	05.9	64.2	00.00	11	00	24
Philadelphia	04778	4842	23864	5.00	05.0	71.0	06.74	07	00	09
Detroit	11198	4323	27671	6.00	06.5	67.4	05.67	04	00	05
Memphis	09857	0915	22177	3.83	01.3	77.2	00.00	03	00	15
Houston	05706	2728	26078	4.50	08.1	80.4	04.70	04	00	15
1981										
Vancouver	23404	1111	26197	6.50	31.2	59.2	03.07	09	04	29
Toronto	07287	3267	26930	4.60	33.5	65.6	03.91	12	01	22
Montreal	26916	2961	23609	4.50	14.6	63.2	04.40	01	03	05
New York	34790	9341	22483	6.75	21.1	70.8	12.20	12	15	05
San Jose	12242	1320	29237	4.50	14.7	62.0	00.00	08	02	16
San Diego	14798	1872	20644	5.50	13.3	68.0	04.38	05	04	13
Chicago	16067	7070	27943	5.33	10.8	69.2	07.26	08	10	71
Tulsa	17130	0642	21062	6.00	02.0	76.2	00.00	04	03	16
Tampa Bay	22828	1545	17634	5.00	07.2	80.6	01.53	07	03	15
Ft. Lauderdale	13442	0985	21563	5.50	12.2	81.2	01.68	05	03	29
Seattle	18046	1484	23359	5.56	08.3	60.8	04.20	08	04	05
Jacksonville	09633	0769	18956	4.50	02.8	78.6	00.00	01	01	11
Portland	10818	1213	22329	5.67	05.4	63.0	01.54	07	00	13
Edmonton	10632	0716	26691	5.50	18.3	57.4	03.39	03	03	29
Washington	12106	3146	29985	7.00	08.3	73.6	04.42	11	00	15
Minnesota	16060	2107	23082	5.00	03.4	65.2	04.38	06	00	24
Dallas	04670	2779	25777	5.75	04.8	80.4	04.44	14	00	10
Los Angeles	06076	7216	22612	6.50	24.3	70.6	04.83	09	02	58
Calgary	10601	0614	27315	5.44	19.4	55.4	02.95	01	02	21
California	08299	2024	24911	5.50	13.5	70.6	02.84	04	01	15
Atlanta	06211	1945	25185	4.50	02.5	74.6	04.29	09	03	15

FRANCHISE/YEAR	VARIABLES									
	A	B	C	D	E	F	G	H	I	J
1982										
Vancouver	18251	1118	27700	6.75	31.8	59.2	03.07	10	03	30
Toronto	07917	3330	28240	5.00	33.6	65.6	04.41	13	06	23
Montreal	20989	2972	24924	5.00	14.7	63.2	04.32	02	03	06
New York	28566	9303	23572	7.25	21.4	70.8	12.24	13	20	06
San Jose	11012	1342	31007	5.00	15.2	62.0	00.00	09	00	17
San Diego	08721	1910	21587	6.00	13.8	68.0	04.35	06	03	14
Chicago	09377	7082	29510	6.00	11.0	69.2	07.20	09	07	72
Tulsa	14616	0651	22311	6.25	02.1	76.2	00.00	05	03	17
Tampa Bay	18507	1574	18691	5.00	07.3	80.6	01.50	08	04	16
Ft. Lauderdale	12385	1009	22704	5.75	12.5	81.2	01.77	06	06	30
Seattle	13875	1494	24524	5.56	08.4	60.8	04.52	09	07	06
Jacksonville	07160	0782	20024	5.50	02.9	78.6	00.00	02	03	12
Portland	08786	1233	23644	5.80	05.5	63.0	01.51	08	03	14
Edmonton	04922	0728	28514	6.00	18.4	57.4	03.40	04	00	30
1983										
Vancouver	28441	1125	30079	7.31	32.4	59.2	03.12	11	11	01
Toronto	11645	3393	30449	6.00	33.7	65.6	04.75	14	04	24
Montreal	09151	2983	27395	5.50	14.8	63.2	04.44	03	02	07
New York	26615	9264	24662	7.50	21.7	70.8	14.94	14	16	07
Golden Bay	12925	1364	32777	5.00	15.6	62.0	00.00	10	07	18
San Diego	04352	1951	22530	6.00	14.2	68.0	04.45	07	02	15
Chicago	10611	7094	31076	6.33	11.3	69.2	08.97	10	10	59
Tulsa	12376	0660	23559	6.25	02.2	76.2	00.00	06	03	18
Tampa Bay	11173	1603	19747	5.25	07.4	80.6	03.11	09	01	17
Ft. Lauderdale	10701	1032	23845	6.00	12.8	81.2	01.77	07	05	31
Seattle	08181	1503	25688	5.56	08.6	60.8	04.38	10	05	07
Team America	13754	3183	33482	6.50	09.0	73.6	06.22	01	00	17

FRANCHISE/YEAR	VARIABLES								
	K	L	M	N	O	P	Q	R	S
1978									
Vancouver	48.02	75.76	50.00	3	2	0	030256	3	3
Toronto	51.06	51.61	50.00	2	1	0	022000	1	3
New York	53.61	81.08	50.00	3	2	0	076891	3	3
San Jose	49.48	26.67	47.62	1	1	0	017000	2	3
San Diego	63.89	58.82	35.71	3	1	0	052568	1	3
Chicago	51.90	38.71	50.00	2	1	0	037741	1	3
Tulsa	00.00	48.39	38.89	2	2	3	041000	2	3
Tampa Bay	66.67	60.53	36.84	3	1	0	071600	3	3
Ft. Lauderdale	67.86	54.05	41.67	2	1	0	015000	2	2
Seattle	59.90	48.39	50.00	2	2	0	064000	3	2
Portland	48.00	65.71	28.57	2	2	0	035500	2	2
Washington	52.87	51.61	45.45	2	1	0	055000	2	2
Minnesota	60.00	55.88	52.00	2	1	0	046479	1	2
Dallas	48.73	46.67	73.08	2	1	0	021000	1	2
Los Angeles	53.38	30.00	46.67	1	1	0	106000	1	2
California	00.00	41.94	58.82	1	1	0	043200	2	1
New England	00.00	61.29	35.29	3	2	0	061279	2	1
Rochester	46.51	46.67	37.50	2	1	0	020000	1	2
Philadelphia	47.70	38.71	33.33	1	2	0	056000	1	1
Detroit	25.00	64.71	50.00	3	2	0	080500	2	1
Memphis	00.00	26.67	47.37	1	1	0	050164	1	1
Houston	53.13	33.33	50.00	1	2	0	050000	1	1
Colorado	00.00	26.67	57.10	1	1	0	075087	1	1
Oakland	00.00	40.00	41.18	1	1	0	050900	2	1
1979									
Vancouver	53.77	69.23	50.00	2	2	3	032250	3	3
Toronto	50.90	43.75	36.40	2	2	3	054472	2	3
New York	58.01	71.05	56.50	3	2	3	076891	3	3
San Jose	44.05	26.67	53.30	1	1	1	017500	3	3
San Diego	61.43	54.05	42.10	2	1	3	052568	2	3
Chicago	48.90	52.94	52.40	3	1	3	037741	1	3
Tulsa	48.39	48.57	42.10	3	2	3	041000	3	3
Tampa Bay	64.66	65.79	47.10	3	1	3	071600	3	3
Ft. Lauderdale	60.00	53.13	38.50	3	1	3	019600	2	2
Seattle	58.08	43.33	50.00	2	2	3	040000	3	2
Portland	53.64	36.67	55.00	2	2	3	035500	2	2
Edmonton	00.00	26.67	43.80	1	1	0	042500	1	1
Washington	50.23	59.38	50.00	3	2	3	055000	2	2
Minnesota	58.43	65.63	47.40	3	1	3	046479	3	2
Dallas	48.50	53.13	45.50	2	1	3	021000	1	2
Los Angeles	49.08	60.00	61.10	3	1	2	104699	2	2
California	41.94	46.88	37.50	2	1	2	043200	2	1
Atlanta	59.49	40.00	61.10	2	1	3	053000	1	2
New England	61.29	40.00	47.40	1	2	3	061279	1	1
Rochester	46.96	50.00	57.10	1	1	3	020000	1	2
Philadelphia	45.34	35.29	47.60	2	2	2	056000	1	1
Detroit	45.45	43.75	35.70	3	2	3	080500	2	1
Memphis	33.33	20.10	45.00	1	1	0	050164	1	1
Houston	43.55	68.75	58.80	3	2	3	035443	1	1

FRANCHISE/YEAR	VARIABLES								
	K	L	M	N	O	P	Q	R	S
1980									
Vancouver	56.82	47.06	50.00	2	2	3	032250	3	3
Toronto	50.20	43.75	47.83	2	2	3	054472	3	3
New York	59.41	77.50	50.00	3	2	3	076891	3	3
San Jose	40.71	28.13	38.89	1	1	1	014000	2	3
San Diego	58.88	51.22	40.00	2	1	3	050000	2	3
Chicago	49.71	62.86	42.86	3	1	3	045500	2	3
Tulsa	48.48	50.00	47.62	2	2	3	041000	3	3
Tampa Bay	64.94	59.46	47.37	2	1	3	071600	3	3
Ft. Lauderdale	57.73	58.54	54.17	2	1	3	019603	2	2
Seattle	54.63	75.68	44.00	3	2	0	040000	3	2
Portland	50.00	46.88	35.00	2	2	3	027500	2	2
Edmonton	26.67	52.63	60.00	2	1	2	042500	2	1
Washington	53.59	51.43	45.83	3	2	3	055000	3	2
Minnesota	60.33	47.06	45.00	3	1	3	046479	3	2
Dallas	48.99	56.76	50.00	2	2	1	034398	1	2
Los Angeles	51.01	60.00	40.00	2	1	0	104699	2	2
California	44.44	46.88	38.10	2	1	0	043200	1	1
Atlanta	55.99	21.88	42.86	1	1	3	052522	1	2
New England	50.82	52.94	42.11	2	2	1	061279	1	1
Rochester	47.34	37.50	57.89	1	1	3	020000	1	2
Philadelphia	43.09	31.25	52.38	1	2	3	056000	1	1
Detroit	44.90	57.14	47.37	2	2	1	080500	2	1
Memphis	26.67	43.75	40.00	2	1	1	050164	1	1
Houston	52.13	42.86	50.00	2	2	3	035443	1	1
1981									
Vancouver	55.39	61.76	53.85	3	2	3	032250	3	3
Toronto	49.30	21.88	59.10	1	2	3	054472	1	3
Montreal	35.09	47.37	42.86	2	2	0	058699	3	1
New York	62.14	71.05	54.55	3	2	3	076891	3	3
San Jose	38.56	34.38	58.82	1	1	0	022500	2	3
San Diego	56.76	63.41	42.11	3	1	2	050000	2	3
Chicago	51.95	71.43	47.83	3	1	1	045000	3	3
Tulsa	49.00	50.00	31.25	2	2	3	041000	3	3
Tampa Bay	63.87	48.65	41.18	2	1	3	071600	3	3
Ft. Lauderdale	57.97	57.89	46.43	2	1	3	019020	2	2
Seattle	58.54	45.71	52.63	2	2	0	060000	3	2
Jacksonville	00.00	56.76	46.15	2	1	0	068000	1	1
Portland	55.23	51.43	38.10	2	2	1	027500	2	2
Edmonton	41.18	37.50	50.00	2	1	2	042500	2	1
Washington	51.42	46.88	50.00	2	2	0	055000	2	2
Minnesota	57.42	58.33	35.00	2	1	0	046479	3	2
Dallas	49.85	15.63	52.38	1	2	0	034398	1	2
Los Angeles	52.52	57.14	44.44	2	1	0	092587	1	2
Calgary	00.00	50.00	64.29	2	2	2	035000	2	1
California	45.26	34.38	47.06	2	1	0	043200	1	1
Atlanta	50.50	50.00	36.36	2	1	2	052522	1	2
1982									
Vancouver	56.20	60.00	54.17	2	2	3	032250	3	3
Toronto	50.32	51.43	57.14	2	2	2	054369	1	3

FRANCHISE/YEAR	VARIABLES								
	K	L	M	N	O	P	Q	R	S
Montreal	47.37	57.14	50.00	2	2	0	058693	3	1
New York	63.11	73.68	60.87	3	2	3	076891	3	3
San Jose	37.95	40.63	66.67	1	1	0	021406	2	3
San Diego	59.46	53.85	47.37	3	1	0	050000	1	3
Chicago	53.11	40.63	47.06	2	1	0	047444	1	3
Tulsa	49.25	48.57	45.00	3	2	3	041000	2	3
Tampa Bay	61.40	37.50	47.62	1	1	3	071600	3	3
Ft. Luaderdale	57.95	55.26	50.00	2	1	3	019020	2	2
Seattle	56.23	56.41	65.00	3	2	0	065000	2	2
Jacksonville	56.77	34.38	40.00	1	1	0	016000	1	1
Portland	49.76	43.75	47.37	2	2	1	026912	1	2
Edmonton	40.00	34.38	50.00	1	1	1	019442	1	1
1983									
Vancouver	56.64	75.75	52.38	3	2	3	060342	3	3
Toronto	47.15	55.55	47.37	2	2	3	054369	2	3
Montreal	44.62	42.86	57.89	2	2	0	058693	1	1
New York	64.16	68.75	52.63	3	2	3	076891	3	3
Golden Bay	38.29	63.88	36.36	3	1	1	021406	2	3
San Diego	57.46	36.66	54.55	2	1	1	022Z22	1	3
Chicago	53.58	48.48	40.00	3	2	3	067000	2	3
Tulsa	49.11	61.11	42.11	2	2	3	041000	2	3
Tampa Bay	58.46	23.33	40.00	2	1	3	071600	2	3
Ft. Lauderdale	57.48	43.75	47.62	2	1	3	019020	2	2
Seattle	56.59	40.00	55.00	3	2	0	027394	1	2
Team America	00.00	33.33	99.99	1	2	1	055000	2	1

APPENDIX B - ATTENDANCE PREDICTIONS

YEAR	OBSERVATION	FRANCHISE	ATTENDANCE	
			ACTUAL	PREDICTED
1978	1	Vancouver	17,243	18,011
	2	Toronto	6,233	10,968
	3	New York	50,843	34,200
	4	San Jose	14,947	10,930
	5	San Diego	5,535	16,631
	6	Chicago	4,188	7,071
	7	Tulsa	11,255	11,082
	8	Tampa Bay	20,455	19,465
	9	Fort Lauderdale	10,888	13,641
	10	Seattle	22,578	15,492
	11	Portland	12,902	14,662
	12	Washington	10,783	10,170
	13	Minnesota	32,132	16,130
	14	Dallas	8,983	9,512
	15	Los Angeles	9,235	7,981
	16	California	11,171	12,079
	17	New England	12,285	21,050
	18	Rochester	6,760	9,049
	19	Philadelphia	8,279	11,212
	20	Detroit	13,981	14,873
	21	Memphis	9,518	7,084
	22	Houston	5,806	4,814
	23	Colorado	7,418	8,241
	24	Oakland	11,929	9,430
1979	25	Vancouver	24,445	24,050
	26	Toronto	12,980	10,077
	27	New York	48,168	41,298
	28	San Jose	15,092	10,870
	29	San Diego	11,718	18,115
	30	Chicago	8,585	11,514
	31	Tulsa	16,853	12,862
	32	Tampa Bay	28,627	25,091
	33	Fort Lauderdale	13,707	13,578
	34	Seattle	18,988	14,327
	35	Portland	11,172	15,215
	36	Edmonton	9,924	4,610
	37	Washington	12,150	9,216
	38	Minnesota	24,856	18,976
	39	Dallas	9,275	9,297
	40	Los Angeles	14,603	20,053
	41	California	10,214	10,855
	42	Atlanta	7,350	7,608
	43	New England	6,562	17,511
	44	Rochester	8,680	14,309
	45	Philadelphia	5,770	9,866
	46	Detroit	14,526	14,919
	47	Memphis	7,137	7,381
	48	Houston	6,294	12,757

YEAR	OBSERVATION	FRANCHISE	ATTENDANCE ACTUAL	ATTENDANCE PREDICTED
1980	49	Vancouver	26,857	16,259
	50	Toronto	15,043	11,112
	51	New York	42,771	38,777
	52	San Jose	13,168	8,631
	53	San Diego	13,890	13,903
	54	Chicago	12,060	11,632
	55	Tulsa	19,970	14,651
	56	Tampa Bay	28,263	21,741
	57	Fort Lauderdale	14,737	17,512
	58	Seattle	23,566	27,321
	59	Portland	10,179	14,725
	60	Edmonton	11,939	13,029
	61	Washington	19,265	12,023
	62	Minnesota	18,231	11,751
	63	Dallas	6,898	8,785
	64	Los Angeles	12,949	13,987
	65	California	7,228	8,832
	66	Atlanta	4,884	3,730
	67	New England	9,240	12,916
	68	Rochester	7,844	11,640
	69	Philadelphia	4,778	10,349
	70	Detroit	11,198	12,917
	71	Memphis	9,857	7,877
	72	Houston	5,706	7,773
1981	73	Vancouver	23,404	16,847
	74	Toronto	7,287	9,770
	75	Montreal	26,916	16,218
	76	New York	34,790	33,731
	77	San Jose	12,242	11,335
	78	San Diego	14,798	16,874
	79	Chicago	16,067	12,402
	80	Tulsa	17,130	15,405
	81	Tampa Bay	22,828	15,561
	82	Fort Lauderdale	13,442	13,608
	83	Seattle	18,046	15,478
	84	Jacksonville	9,633	10,195
	85	Portland	10,818	12,452
	86	Edmonton	10,632	11,218
	87	Washington	12,106	5,508
	88	Minnesota	16,060	8,689
	89	Dallas	4,670	2,301
	90	Los Angeles	6,076	11,448
	91	Calgary	10,601	12,606
	92	California	8,299	8,606
	93	Atlanta	6,211	8,233
1982	94	Vancouver	18,251	16,053
	95	Toronto	7,917	15,379
	96	Montreal	20,989	18,615
	97	New York	28,566	39,615
	98	San Jose	11,012	10,194

YEAR/OBSERVATION		FRANCHISE	ATTENDANCE ACTUAL	ATTENDANCE PREDICTED
	99	San Diego	8,712	13,134
	100	Chicago	9,377	5,923
	101	Tulsa	14,616	14,673
	102	Tampa Bay	18,507	16,060
	103	Fort Lauderdale	12,385	16,062
	104	Seattle	13,875	18,577
	105	Jacksonville	7,160	14,554
	106	Portland	8,786	14,563
	107	Edmonton	4,922	7,761
1983	108	Vancouver	28,441	29,500
	109	Toronto	11,645	12,822
	110	Montreal	9,151	15,267
	111	New York	26 615	30,298
	112	Golden Bay	12,925	14,699
	113	San Diego	4,352	12,082
	114	Chicago	10,611	9,940
	115	Tulsa	12,376	16,168
	116	Tampa Bay	11,173	6,398
	117	Fort Lauderdale	10,701	12,546
	118	Seattle	8,181	13,979
	119	Team America	13,754	7,206

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