

LOCATING A MAJOR HOCKEY FRANCHISE: REGIONAL CONSIDERATIONS

*Ronald L. Geddert and R. Keith Semple**

Introduction

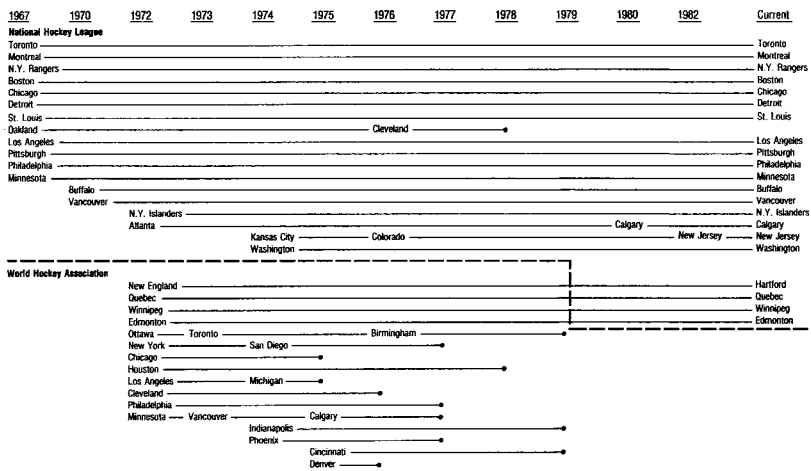
Professional sport provides an entertainment service of the highest order. Its increasing importance in the major urban centers of North America is reflected in the rapid proliferation of major league franchises throughout the past two decades. While this is true for all major sports, hockey provides the most notable example. Since 1967 the National Hockey League has expanded from six teams in a core of northeastern metropolitan centers to twenty-one teams that are dispersed across the entire continent. The league is currently studying further expansion. During this same period a rival league, the World Hockey Association, was formed. In 1974 it reached a peak of fourteen teams, while the corresponding figure for the NHL was eighteen. After seven years of stiff competition, a 1979 accommodation saw the four strongest WHA teams merge with the NHL.¹

During the period of rapid expansion of major league professional hockey, little effort was expended in the search for stable franchise locations. The large number of relocations and failures, as indicated in Figure 1, demonstrates that many teams were not viable and suggests that the basic locational principles relevant to the successful allocation of franchises were largely ignored. While such instability might have been anticipated in the fledgling WHA, the fact that five cities in the NHL lost franchises was not. It is important to note that many of the WHA failures occurred when the league tried to compete head on with the NHL. In several cases both leagues had failures in the same city. Even today, with nearly two decades of experience, the NHL continues to force financially weak franchises to remain in suboptimal locations. This problem is illustrated by the 1983 attempt by the owners of the St. Louis Blues to relocate their franchise to Saskatoon. Preconceived ideas concerning the threshold population requirements led the NHL governors to question the viability of Saskatoon and prevent the relocation. In light of the past record of the NHL, this study focuses its attention on the principles of the location of a successful major hockey league franchise.

* University of Saskatchewan.

¹ The World Hockey Association began operations in 1972 with twelve teams. It expanded to a peak of fourteen teams in 1974 and thereafter declined to seven franchises by 1978. In 1979 the National Hockey League expanded by merging the strongest four of the remaining WHA franchises.

Figure 1. The Location of Major Hockey Franchises since 1967.



Franchise Location

This paper examines the premise that regional characteristics are major determinants of fan support and, therefore, should receive primary consideration in the allocation of professional hockey franchises. The paper further postulates that such characteristics suggest that Saskatoon is a viable market area in which to locate a major league hockey team. Previous research has ignored the question of sports franchise viability within a locational context. It has, however, established profit maximization as a sufficient behavioral objective, irrespective of any notion of "love for the game" by the owners [10, 11, 17]. Other studies dealt with individual franchises and the demand for tickets. El Hodiri and Quirk [5, 20], for example, found that, in general, big city teams would be more likely to survive and be profitable, while their smaller city counterparts would tend to be abandoned or moved frequently. These findings were supported for baseball, football, and basketball, but contradicted for hockey. Demmert [4], found that team quality, population of the market area, competition from other franchises in the market area, ticket prices, games televised, and length of tenure of the club in the market area were all significant variables affecting attendances at baseball games. His results, however, cannot be generalized for hockey. Roger Noll [19] is the only investigator, it appears, to include hockey in a study of ticket demand. While his results for baseball supports the findings of Demmert, those for hockey display market differences. The population variable, in particular, was significant for establishing thresholds only if Canadian and American teams were analysed separately. Even so, predictions based on his findings have been subsequently disproved because of his inadequate data base. His data were only selected for the 1972-73 season, a year in which fourteen of the twenty-eight teams were in their first year of operation, twelve of these in the new league. One geographical study by Rooney [21] is noteworthy for its analysis of the spatial variation in major sports in the United

States. Unfortunately, he gives hockey only cursory mention, since he does not consider it a major sport. He notes that it is important only regionally. It is evident, then, that very little research has been directed toward the locational criteria for hockey franchise success.

Accepting profit maximization as the objective for major hockey franchises, this study considers the demand for tickets to be an acceptable measure of hockey's success for any particular franchise. The omission of other sources of revenue such as the sale of television contracts and the generation of ancillary revenues from concessions, parking, and souvenirs, is justified in several ways. First, the National Hockey League, unlike various other professional sports leagues, did not have a network television contract during the period of this study. Since each club attempted to negotiate its own contract, and since the demand for this service is affected by the same variables affecting the demand for in-person attendance, this service has no significant effect on the prediction of viability [4]. Second, the generation of revenues from concessions, parking, and souvenirs is a function of fan attendance at games. Finally, there is no gate-sharing agreement in the league, and thus each club is dependent solely upon the revenues generated at its home location, except for such extraordinary financial benefits as expansion payments or territorial compensation fees.

The present study develops a paradigm for predicting locational viability and demonstrates that certain geographical considerations, based on traditional central place theory, are essential to an understanding of viable hockey franchise locations.

The Hockey Franchise and its Hinterland

Central place theory provides a base from which to predict the locational viability of hockey franchises. Based upon simplified assumptions Christaller [3] and Lösch [15] postulated a configuration of central places and associated service hinterlands that would emerge on the landscape. Each central place required a spatial monopolistic position for any given service and the size of the hinterland varied as to the threshold population necessary to support that service. They also demonstrated that the order of a center was related to the availability of services from that center and was predictable both by its population and the concomitant size of the hinterland. Where Christaller and Lösch diverged was in their suggestion of the manner in which services would be allocated among the various centers. Christaller assumed discrete stages in the hierarchy, with each center of any order offering all the services of those of a lower order, plus certain additional ones. Thus, he deduced that only the largest centers would have thresholds capable of supporting the highest order services. Lösch, making no such assumption, allowed for the possibility that centers might be of the highest order for one type of service and at the same time of a lower order for others. By Christallerian standards then, a center is ordered on the basis of the highest order good or service available, while Löschian ordering is on the basis of functional complexity, or the aggregate number of such services. In the Löschian system centers of equivalent order may differ greatly in character because of the different types

of services emanating from them. Furthermore, a specific center could support a particular service which might seem to be out of proportion to its order when measured by Christallerian standards.

Berry [1] introduced other useful modifications to central place theory by including the possibility that populations served by urban centers were not distributed uniformly. His demonstration that centers of a given order decrease in population and their market areas increase in size as population densities decrease, implies that the market potential of a given central place is not accurately predictable from its central city population alone nor even that of its metropolitan area. Furthermore, the order of a center, even when measured in aggregate, is not concomitant with these measures of population. Thus, one would conclude that central places of a given size will support goods and services of a much higher order in areas where population densities are low than where they are high.

The complexities of real world situations vis-à-vis the simplifying assumptions of the theorists has led to more recent research into appropriate delimitation of hinterland boundaries and classification of central place hierarchies. Kariel and Welling [14] and Kariel and Rosenvall [13], for example, used newspaper news circulation as a measure of urban hierarchical structure, while Brooker-Gross [2] used television viewing areas to measure metropolitan hinterlands, and the location of source stories to measure hierarchies. What has emerged from the many studies is the clear indication that the theorists provide only a useful starting point from which specific modifications are required for any particular type of good or service.

Two further modifications are necessary in order to apply central place concepts to the study of hockey franchises. The first stems from the fact that attendance at professional sporting events is a nonessential service involving the expenditure of discretionary income by a minority of the people. For such a discretionary service the supply need not extend to everyone. Many who actually want the service may never receive it because the trade-off is too high. Therefore the boundaries of market areas are not necessarily defined by the boundaries of adjacent market areas. Many locations may not fall within the market areas of any central place for this service. This contrasts sharply with both Christaller's and Lösch's assumption that the entire plain under consideration must be exhausted by the various market areas for a particular good. Market areas for professional sport, except in areas of close proximity, are largely independent of one another and will vary in size and shape, depending on the landscape.

The second modification reflects the fact that geographical space is highly varied, in contrast to the broad homogeneous plain envisioned by the theorists. While Berry modified the theory to account for the non-uniformity of population distributions, they must be further modified to take into account, particularly for a discretionary product, the non-uniformity of tastes and preferences.

Although both researchers and the business community in general have recognized that the simplifying assumptions of the theorists are unrealistic,

they have generally incorporated them implicitly into both professional research and entrepreneurial decision-making. This is evident whenever metropolitan population is used as a surrogate for determining the potential market for a service from a given center [4, 5, 12, 19, 20]. Such a measure ignored the varying strengths of influence of central places on their hinterlands, the varying attractiveness of a particular service in a given area, and in both cases, the differing sizes of the hinterlands.

NHL hockey is representative of the highest order of sports service available. In its allocation of franchises, it would appear that the League has accepted Christaller's most simplified version of a central place system by assuming that only the largest centers are capable of supporting such a service. This violates Lösch's later modification. Furthermore, in recognition of the need to maintain threshold market potentials, the NHL arbitrarily grants special monopolies to its member clubs and exacts huge compensatory payments in exchange for the rights to infringe upon these monopolies. This inflexible standard ignores real world situations as evidenced in the findings of Berry [1].

This study makes no such simplifying assumptions. Rather, it accepts the characterization of the sport as a regional one [16, 19, 21]. The regional concentration of player origins, for example, is found to be much more evident for hockey than for the other major North American sports [8]. Given that human abilities are distributed randomly in any population, such regional variation can be explained only in terms of widespread spatial variation of enthusiasm for the sport of hockey [17]. For this discretionary service the variation of enthusiasm must be considered. It is likely to be of significance in any prediction of viable franchise locations, not only by reflecting the inclination of the local population to attend games, but also by influencing the distance which residents of a region will be willing to travel to attend games. This is significant since it directly affects the size of the hinterland from which spectators are attracted.

The Analysis

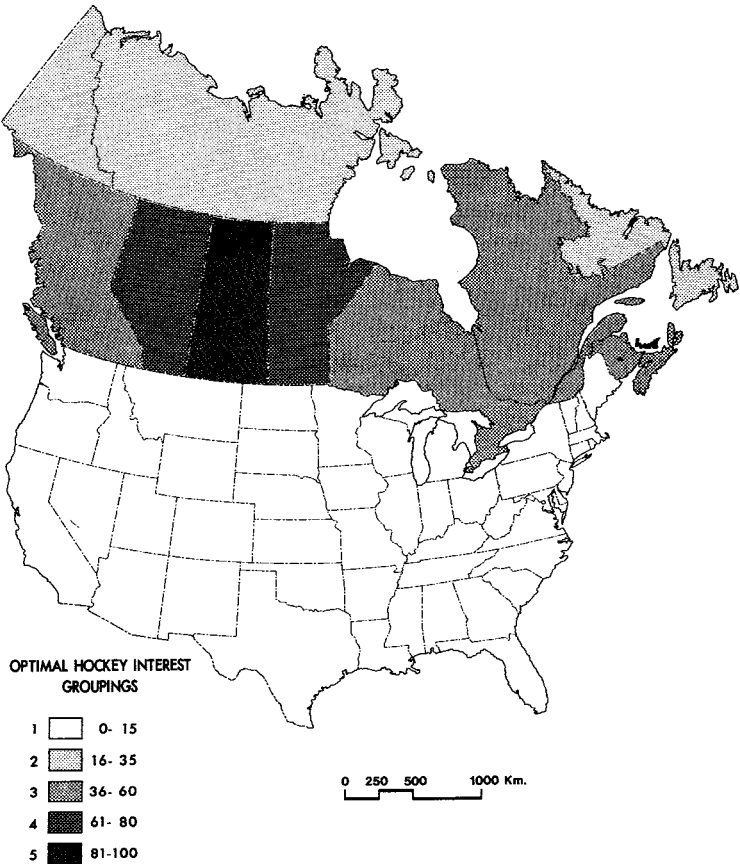
This study analyses the importance of regional considerations by examining a number of variables postulated to affect the demand for tickets to attend NHL games. It augments site-specific variables, such as: population, local enthusiasm, the presence of competing entertainment options, climatic factors, and arena characteristics with franchise-specific variables, such as: team quality, the presence of star players, and ticket prices. By taking such an approach it challenges the notion that attendance is simply a function of city size and "a winning season." (cf. Fisher [7]).

Using the average attendances for the 1981-82, and 1982-83 NHL regular seasons as the dependent variable, the research applies stepwise multiple regression analysis to evaluate the influence of seven independent variables for the various franchise-sites. The study includes, in addition to the current twenty-one sites, the five defunct ones, using data from their last two seasons

of operation.² Two of the variables included, hockey interest and mean January temperatures, are attempts to define regional factors. The study postulates that the level of interest of the local population for hockey shows wide variation, which, when mapped, will reflect regional biases in the acceptance of hockey as a sport.

The study calculates a composite index of hockey interest by analysing three different variables related to the popularity of hockey for all provinces and states. These variables are the birthplace of all players under contract to NHL teams for the 1981-82 season; the geographical breakdown of total paid circulation for the December 31, 1982 issue of *The Hockey News*; and, the presence of major junior, college, and minor professional hockey teams as of February 1, 1984. These variables are measured on a per capita basis. The

Figure 2. Hockey Interest in North America.

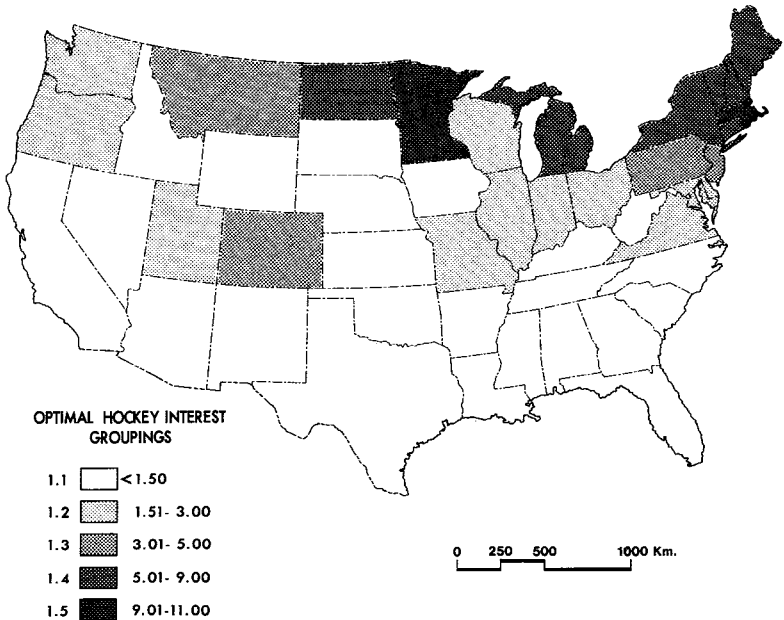


² For New Jersey, the study uses only the 1982-83 season, since that was the initial year of the franchise at the site.

resultant factor scores provide a measure of hockey interest by province and state. These scores are standardized on a ratio scale with a maximum possible score for a particular region set at 100. A clustering algorithm optimally partitions the scores into five groups for summary purposes. Figure 2 demonstrated that there exists not only a wide variation of enthusiasm for hockey, but also a distinct regional bias in this variation. It indicates that the core of hockey interest lies in the Canadian prairies, with levels of interest decreasing with distance from this core.

The scores assigned to various states of the United States (Figure 2, Category 1) are partitioned once more into five groups to obtain a within-region variation. Figure 3 depicts this variation and demonstrates that hockey interest in the United States associates with the traditional "snow belt."

Figure 3. Hockey Interest in the United States.



The research derives an index of potential demand for each region by multiplying the resident population by the corresponding interest index. Figure 4 depicts a map of this index and reinforces the strong regional bias. The core shifts eastward but those areas with high interest form a broad arc around the core.

Figure 4. Potential Hockey Demand in North America.

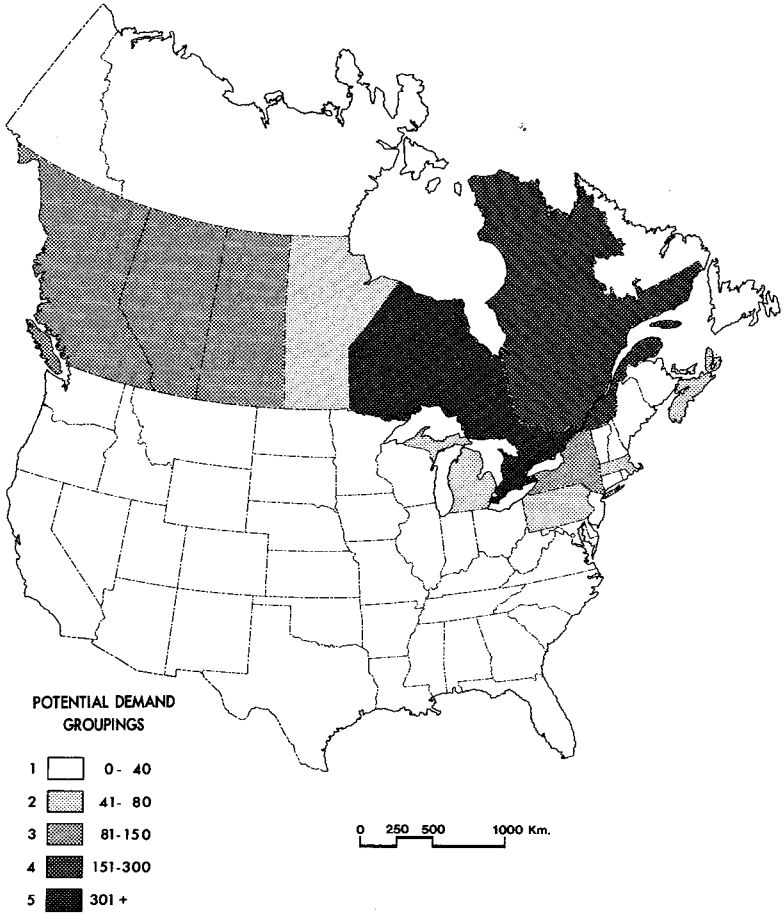


Table 1 provides a comparison of the interest index with potential demand and the location of current teams and evokes some interesting observations.

At least three franchises, St. Louis, Washington, and one of the Pennsylvania franchises appear to have a suboptimal location. It would appear also that a second Ontario location, as well as locations in Saskatchewan and Atlantic Canada ought to be viable. Note the futility of having had franchises in Atlanta, with the low score of 3.50, and Denver, with a score of 12.36. Note also the low scores for two cities that shared a state, Oakland, with a score of 26.04/2 and Kansas City, 11.31/2.

The analysis also includes variables associated with population of the market area, competition from other sports, team quality, and mean January temperatures. It determines market population by defining the actual area from which patrons purchase season's tickets, a measure of the range of the

Table 1. Index of Hockey Interest, Potential Demand for Professional Hockey, and Number of NHL Teams Located in Each Region.

Area	Hockey Potential			Area	Hockey Potential		
	Interest	Demand	Teams		Interest	Demand	Teams
Ont.	50.04	418.83	1	Wash.	1.58	6.57	-
Que.	41.90	270.59	2	Oreg.	1.79	4.66	-
Alta.	62.93	140.50	2	N. Car.	0.74	4.29	-
N.Y.	7.09	129.39	3	N. Dak.	6.56	4.15	-
B.C.	37.33	102.19	1	Okla.	1.34	4.02	-
Sask.	97.78	92.93	-	Geor.	0.62	3.50	-
Man.	67.46	68.43	1	Vert.	6.61	3.35	-
Mass.	9.44	53.76	1	Utah	2.18	3.14	-
Mich.	5.78	53.23	1	Mont.	3.99	3.10	-
Penn.	3.99	49.60	2	Ariz.	0.83	2.36	-
N.S.	51.47	44.19	-	Iowa	0.64	1.95	-
Minn.	9.87	38.67	1	Kans.	0.69	1.70	-
N.B.	53.44	37.55	-	Alab.	0.34	1.36	-
N. Jer.	4.39	34.02	1	Dela.	2.14	1.35	-
Ill.	2.42	28.20	1	NWT	26.95	1.32	-
Cal.	1.05	26.04	1	Tenn.	0.27	1.29	-
Conn.	7.29	23.37	1	Nebr.	0.79	1.22	-
Ohio	2.11	22.89	-	Scar.	0.29	0.93	-
Nfld.	24.01	14.12	-	Lous.	0.21	0.88	-
Colo.	4.31	12.36	-	Kent.	0.20	0.73	-
MD (DC)	2.40	12.04	1	Alas.	1.65	0.70	-
Mo.	2.17	11.31	1	N. Mex.	0.52	0.70	-
PEI	83.09	9.86	-	Neva.	0.79	0.66	-
Indi.	1.85	9.61	-	Yukon	25.92	0.63	-
Virg.	1.75	9.57	-	Wyom.	0.73	0.36	-
R.I.	10.10	9.54	-	Idaho	0.34	0.33	-
Wisc.	1.99	9.22	-	S. Dak.	0.43	0.30	-
Flor.	0.89	9.16	-	Miss.	0.10	0.25	-
Maine	6.95	7.75	-	Ark.	0.10	0.23	-
N.H.	8.05	7.41	-	Haw.	0.16	0.15	-
Tex.	0.49	7.11	-				

service, rather than using the traditional metropolitan population surrogate. Competition from other sports is calibrated by a statistic which considers both the presence of the competing team and the proportion of overlap of the respective playing seasons. A team quality measure is derived by factoring three variables; the number of points a team gained during the regular season, the extent of the team's advancement in the previous year's Stanley Cup playoffs, and the presence of star players, identified by those who won the six major trophies and those named to the first and second All-Star teams. The study also includes mean January temperatures in an effort to further define regionality. This is based on the assumption that hockey acceptance can, in part, be traced to a tradition of hockey which predated the widespread

availability of artificial ice, and was therefore dependent on climatic conditions.

Ticket prices are also likely to affect attendances. One would expect a profit-maximizing owner to compensate for arena capacity limitations by raising ticket prices when he experiences regular sell-outs, but to keep them low when the arena is under-utilized. The data seems to confirm such a premise. The study therefore adjusts the dependent variable by the relative weighted mean ticket prices for each franchise. For the five defunct franchises the study estimates the ticket prices based on the geographically nearest franchises. Thus, the dependent variable, "standardized attendance," includes corrective measures to allow for arena capacity constraints and variable ticket prices. Geddert and Semple [9] provide details of the model calibration.

Results

The regression results confirm the hypotheses of the study. Table 2, Column 1 depicts these results. For confirmation the research provides a

Table 2. Regression Results for NHL Ticket Demand for Selected Variables over Two Seasons

Variable or Statistic	Coefficients	
	Equation 1	Equation 2
Constant	11993* (1732)	12315* (1767)
X ₁ Hockey Interest	71.13** (31.82)	74.97** (32.96)
X ₂ Team Quality	1402.92** (619.68)	1387.21** (657.12)
X ₃ Competition	-1200.09** (457.67)	-1196.15** (488.93)
X ₄ Pop. (Market Area)	0.00111** (0.00042)	—
X ₅ Pop. (Metro Area)	—	.00102** (0.00045)
Temperature	—	—
R ²	0.68	0.66
Adjusted R ²	0.62	0.60
Degrees of Freedom	21	21
F	11.18381	10.21108
Significance of F	.001	.001

** Significant at the 95% level.

* Significant at the 99% level.

Standard errors of estimates are shown in parentheses.

second equation, Column 2, using metropolitan populations. The slightly higher level of explanation in the first equation confirms the value of defining real market areas. In both cases the temperature variable fails to enter the equations, even when very low entry criteria are set.

Of greatest significance to the study is the importance of the hockey interest variable. Not only is it significant at the 95% level in both equations, but it is also the first variable to enter, with an explained variance of 0.33. It provides the greatest explanation of attendance variations among the variables. By utilizing the first equation, an increase of 711 fans can be anticipated for every ten point increase in hockey interest. This would have significant implications for such franchises as Los Angeles Kings, Washington Capitals, and St. Louis Blues, where a population base appears to be adequate, but interest extremely low. High multicollinearity between the interest index and the temperature variable (correlation coefficient -0.762) explains the failure of temperature to enter the equation.

The remaining variables perform as anticipated. Team quality with an explained variance of 22%, is the second variable which enters the equation; while competition enters next, with an explained variance of only 3%, but a high coefficient. In both equations the population variable enters only as the fourth variable, with explained variances of 10% and 8%, respectively.

In the allocation of franchises to specific sites, decisions must be made on locational factors alone. This is particularly true in the granting of new franchises, since future long-term team quality is not known.³ Since the quality variable is measured in standard units, the model allows us to remove it for analysis of site factors alone, which is equivalent to assuming that in the long-run the teams standard of quality will be equivalent to the mean. The study uses the modified equation to predict the viability of particular locations. Table 3 indicates attendances for NHL sites, based on these site-specific variables alone.

The analysis separates franchises into three groups, based on the often accepted maxim that approximately one-third of the teams in the League are profitable, one-third near the break-even level, and one-third are unprofitable [7]. Some observations are noteworthy.

Group 1

These cities all have either high levels of hockey interest or extraordinarily large population bases. They have all had strong support from their fans, sometimes in spite of low quality levels. Winnipeg and Vancouver are the only franchises in the group which have exhibited some difficulties.

The financial difficulties of Winnipeg have stemmed primarily from an absence of ancillary revenue, since it has no access to revenues from

³ An expansion franchise might in fact be expected to be well below mean quality levels in the first years, but this negative influence on attendance could be offset by the so-called "honeymoon" effect.

Table 3. Predicted Attendances for NHL Sites.

	City	Attendance*
Group 1	Toronto	16,846
	Montreal	16,779
	Quebec City	16,264
	Winnipeg	16,138
	Calgary	15,996
	Edmonton	15,899
	Vancouver	14,699
	Chicago	14,134
	New York	14,131
Group 2	Hartford	13,408
	Long Island	13,177
	Buffalo	12,871
	Philadelphia	12,597
	New Jersey	12,435
	Detroit	12,069
	Minnesota	11,792
	Washington	11,361
	Boston	11,330
Group 3	Pittsburgh	11,170
	St. Louis	10,990
	Denver	9,947
	Atlanta	9,493
	Cleveland	9,264
	Los Angeles	9,228
	Kansas City	8,518
	Oakland	6,463

parking and concessions. Generally the problems of the team have not been attributable to a lack of ticket demand. Vancouver has experienced a drop in fan attendances in the last several years. This has resulted from disappointing performances by the team. It might be noted in this context that the hockey interest index for this region is the lowest among Canadian provinces which have franchises.

Group Two

Cities in this group are all situated in regions with relatively low levels of hockey interest (but generally higher than those in group three). Here success appears to be dependent on team quality. There is enough interest to excite the fans when the team is playing well, but not enough to keep them coming when performances deteriorate. Generally, Long Island, Buffalo, Philadelphia, and Boston have had strong teams and been successful in attracting fans. Hartford and New Jersey have not had

“winning” teams, and have therefore been less successful. New Jersey continues to bear the heavy burden of compensatory payments imposed by the League for infringement upon the protected territories of the two New York teams and Philadelphia, with the result that its future appears somewhat precarious. Before its improved competitiveness, Washington suffered extreme financial hardships due to low attendance levels, so that its future at the site was in jeopardy. Recent improved team quality appears to have lifted the franchise out of its immediate difficulties. Detroit’s and Minnesota’s attendances have both varied with their on-ice performances, but have generally not approached either extreme. Minnesota has the highest interest index among American states with teams, while Detroit has a very long tradition of NHL hockey.

Group Three

All five cities that lost franchises are in the third group. Their demise might have been anticipated irrespective of the fact that four of the five had strongly negative quality levels. The other three sites in the group have all suffered extreme financial difficulties in recent years.

The failure of the St. Louis franchise to remain financially viable when its on-ice performance deteriorated, and of the owners to find buyers who would keep the team in St. Louis resulted in the aborted attempt to relocate in 1983. After temporarily becoming a ward of the League, the team was eventually sold to a buyer who agreed to keep it in St. Louis. The team continues to be financially unstable, because, in the words of the previous owner, “a financial commitment to NHL hockey in St. Louis does not exist.”

The franchise in Pittsburgh has continually lost money because of poor attendances, and except for the infusion of large amounts of capital by a magnanimous owner, would have failed to survive to the present. Its problems came to head in the Spring of 1985 when the franchise temporarily suspended all front-office operations, demanded tax concessions from the city, and entered negotiations for the sale and possible transfer of the team to Hamilton or Denver.

Although the Los Angeles franchise has never drawn fan support significantly in excess of those predicted, it has continued to survive due to wealthy owners who have subsidized its operation. Were it not for such support, its demise would likely have occurred as well.

The Saskatoon Market and NHL Hockey

The model developed in the preceding sections examines the viability of the Saskatoon market as a future home for an NHL franchise. In order to apply the model to a city without a current franchise an estimate of potential market area is necessary. This surrogate replaces actual market in the previous analysis. Fortunately, data are available on the potential of the Saskatoon market area because a campaign to solicit seasons-ticket requests for an NHL franchise accompanied the 1983 proposal to bring the St. Louis Blues to Saskatoon. This resulted in requests for 18,583 tickets. Since no financial commitment was required by potential customers, it is not known what proportion of the

requests might be translated into actual subscriptions. This should not, however, affect the definition of market area unless the ratio of actual purchases to requests could be demonstrated to show a distance-decay relationship. Inspection of the data and familiarity with the region convinced the researchers that this is not likely to occur; indeed, the opposite appears more likely. The study therefore uses the location of the ticket requests to define a market area for Saskatoon in the same manner as for the existing franchises.

Since Saskatoon is in the region with the highest hockey interest index, one might anticipate a favorable prediction for the site. Although its city population is under 200,000, its hockey hinterland is large, serving a population of over 600,000. As a result, the model predicts a (standardized) attendance of 18,948 at mean quality levels, that is, based on site-specific variables alone. Saskatoon would appear to be an attractive center in which to locate a National Hockey League franchise.

In spite of the denial by the NHL board of governors to allow the transfer of an existing franchise to Saskatoon, many in the area remain optimistic that the city will eventually receive a team. Currently, the city and province are jointly planning the construction of a new arena which would be expandable to a seating capacity greater than the minimum of 15,000 specified by the NHL. Such a facility would not only conform to one of the conditions of any transfer proposal, but also would demonstrate the sincerity of the local population regarding their pursuit of a team.⁴

Summary and Conclusions

The study demonstrates the usefulness of including regional variables such as hockey enthusiasm when locating professional hockey franchises. Regions with high hockey interest levels provide strong support for their teams, in some cases despite dismal performance levels. Only where interest levels have declined, is support largely dependent upon team quality. Since over the long term quality levels should tend toward the mean, centers in these areas are less likely to sustain viable franchises. In areas with very low interest indices there is very low commitment to hockey as a sport. Despite large metropolitan areas, there are insufficient numbers of fans interested in attending professional hockey games. The tenuous attachment of fans in the areas with marginal interest results in market demands for hockey which are not reflected by their metropolitan areas. Franchises in these areas are sustained through the charitable support of wealthy owners.

⁴ The NHL cited a number of reasons in their rejection of the transfer to Saskatoon, including a belief that the St. Louis franchise was not unviable in that center, a perception that the transfer would "tarnish the major league mystique" of the League, a disbelief in the viability of a franchise in Saskatoon, a concern that a Saskatoon franchise would be an inferior drawing card than St. Louis in many U.S. cities, the absence of a suitable playing facility and skepticism that one could be quickly constructed, and a concern over the financial structuring of the proposed sale [18].

In light of the absence of large metropolitan centers in some regions with very high hockey interest, the National Hockey League has chosen not to award franchises to sites in these areas. Saskatoon is perhaps the best example of this policy. The analysis suggests that, if ability to attract paying customers is an important criterion, then a reevaluation of the principles upon which the governors have allocated their franchises is in order. Centers like Saskatoon are more likely to be successful than many large metropolitan areas.

Currently, the National Hockey League is believed to be considering further expansion. Sites said to be under consideration are Seattle, Dallas, and Hamilton [6]. Based on regional considerations, only Hamilton is likely to be well supported by the public. Nevertheless, preconceived notions, and a lack of understanding of factors that lead to financial viability on the part of the decision-makers may once again result in some non-viable sites receiving a priority over sites in regions of enthusiastic supporters.

REFERENCES

1. Berry, Brian J. L. *Geography of Market Centers and Retail Distribution*, Prentice-Hall, Englewood Cliffs, N.J., 1967.
2. Brooker-Gross, S. R. "News and Metropolitan Hinterland and Hierarchy," *Urban Geography* (4) 2, 1983, 138-155.
3. Christällner, Walter, 1933. *Die zentralin Orte in Sudetenland*, Jena, trans. C. Baskin at the Bureau of Population and Urban Research, University of Virginia, 1954.
4. Demmert, Henry G. *The Economics of Professional Team Sports*, D. C. Heath and Company, Lexington, Mass., 1973.
5. El Hodiri, Mohamed and James Quirk. "The Economic Theory of a Professional Sports League," in Roger Noll, ed., *Government and the Sports Business*, The Brookings Institute, Washington, D.C., 1974.
6. Fischler, Stan. "Zeigler Denies NHL Considering Expansion," *Saskatoon Star-Phoenix*, Dec. 15, 1984.
7. Fisher, Red. "Is Hockey Failing in the United States?" *Hockey Scene*, 1983.
8. Geddert, Ronald L. *The Location of a Differentially Preferred Discretionary Service: The Case of Saskatoon as a Site for a National Hockey League Franchise*, unpublished M.A. Thesis, Department of Geography, University of Saskatchewan, 1984.
9. _____ and R. Keith Semple. "A National Hockey League Franchise: The Modified Threshold Concept in Central Place Theory," *Leisure Sciences* 8 (forthcoming).
10. Jones, J. C. H. "The Economics of the National Hockey League," *Canadian Journal of Economics* 11 (Feb. 1969).
11. _____. "The Economics of the N.H.L. Revisited: A Postscript on Structural Change, Behaviour, and Government Policy," in Gruneau, Richard S., *Canadian Sport: Sociological Perspectives*, Addison-Wesley, Don Mills, Ont., 1976.
12. Jozsa, Frank P., Jr. *An Economic Analysis of Franchise Relocation and League Expansion in Professional Team Sports, 1950-1975*, unpublished Ph.D. dissertation, Georgia State University, 1977.
13. Kariel, H. G. and L. Rosenvall, 1978. "Circulation of Newspaper News with Canada," *Canadian Geographer* (22), 1978, 85-111.
14. _____. and S. Welling. "A Nodal Structure for a Date-line," *Canadian Geographer* (21), 1977 148-163.
15. Lösch, August, *The Economics of Location*, John Wiley and Sons, Inc., New York, 1952.
16. Mullin, Bernard J. "The Use of Athletic Endorsements in Consumer Product Advertising," in Michael E. Jones, ed., *Current Issues in Professional Sports*, Whittemore School of Business and Economics, Durham, N.H., 1980.

17. Neale, Walter C. "The Peculiar Economics of Professional Sports," *The Quarterly Journal of Economics* (79) 1, 1964.
18. NHL Advisory Committee, *Report to the Board of Governors re: Ralston-Purina Proposal*, May 18, 1984.
19. Noll, Roger. "Attendance and Price Setting," *Government and the Sports Business*, 1974.
20. Quirk, James. "An Economic Analysis of Team Movements in Professional Sports," *Law and Contemporary Problems*, Winter/Spring, 1973.
21. Rooney, John F., Jr. *The Geography of American Sport*, Addison-Wesley Publishing Co., Reading, Mass., 1974.