TOWARDS STEMMING THE EXODUS

Recommendations on how to stop the member outflow at the Royal Netherlands Fencing Association.

by
Robert A. den Hartog
1993

MBA Management Project Report

Thesis submitted to The Netherlands Institute for MBA Studies
in accordance with the rules of Bradford University Management Centre
in partial fulfilment of the requirements for the degree of
Master of Business Administration
of the University of Bradford

The Netherlands Institute for MBA Studies
Utrecht, The Netherlands

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KEYWORDS

- Membership levels
- Causes
- Co-operation
- Outflow
- Marketing concept

SUMMARY

Sports associations in the Netherlands are experiencing increasing pressures on their funding. Funding, both governmental subsidies and membership fees, is linked to membership levels. The Royal Netherlands Fencing Association will lose an important part of their subsidy provided membership grows with twenty-five percent within one and a half year. Over the last ten year membership levels have remained near constant. Annual member turnover amounts to twenty-five percent a year.

This thesis focuses on boosting the membership level by stemming the outflow. The study is based on a survey performed under 590 ex-members. This enabled the author to replace former assumptions concerning the causes of the outflow with facts. The outflow does not occur in any particular class of sex or age of the members. Sixty percent of the outflow occurs within the first three years of membership.

The gist of the respondents' criticism can be summarised in a few statements: Respondents want more opportunities to participate in their sport. Inflexibility of opening times is felt as a severe handicap. When they do participate they often encounter a lack of suitable opponents. Outside their clubs the situation is not judged better: tournaments are too far to travel and regional competitions, with few exceptions, do not exist. Cost of equipment and fencing in general are perceived as high in relation to the service offered.

The analysis reveals that a number of the problems are related to the small club size. Others, such as the absence of a regional competition are caused by a lack of funds. The latter problem is circular: To stem the outflow improvement of the service is essential. To improve service more funds are needed. Discretionary, free spendable funds, can only be raised through KNAS-membership growth.

Improvement of the service offered by clubs can be realised by two measures: co-operation or merger with other clubs and implementing the marketing concept. Measuring and responding to the needs of members will be a major step in constructing a service oriented club.

The problem of funding a regional competition can be resolved by improved registration of fencers who are currently not a KNAS-member. Through improved registration two flows of funds are increased: structural subsidies from the Department of Health and Culture and membership fees. A number of measures are recommended to change the membership administration system.

Thesis Supervisor: Dirk Ilsink, AA BSc MBA

PREFACE

For seventeen years I have been a member of the Royal Netherlands Fencing Association. Long since I have been puzzled by the lack growth of fencing in the Netherlands. The subject presented me with a unique opportunity to combine professional interests with my favourite past-time. Application of marketing principles in sports is increasing with all associations due to governmental pressures.

The data gathered in the survey goes beyond the requirements for the management project. I hope the information contained in the database and in this report will help the Association and the individual clubs to increase the participation in fencing in the Netherlands.

This project would not have been possible without the co-operation of many ex-fencers who have made the survey to one of the largest of its kind held in the Netherlands up to date.

I would like to thank my internal supervisor Bert van der Flier, who was always available to discuss ideas and supply background information.

Dirk Ilsink supported me throughout the project, in spite of a busy work schedule. I thank him for relentlessly applying his critical reading skills, constantly urging me to hone the arguments presented.

Special thanks go to my wife Renée who was responsible for mailing 1,700 letters and the data entry of nearly six hundred questionnaires.

Finally, I thank my sons Stéphane and Maximilian, for forsaking their father during numerous weekends.

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Adapted by Egerton Castle from George Silver's "Paradox of Defence", 1599 (Castle 1885).

1. INTRODUCTION

The Royal Netherlands Fencing Association (KNAS) is a Not-For-Profit organisation that fosters two major goals. The prime goal is to increase the number of participants in the sport. The second is to raise the level of fencing in the Netherlands. Whether any progress towards the latter objective has been made is a matter subject to internal debate. However, no differences of opinion exist regarding the first goal: since 1985 the number of registered fencers has almost remained constant.

So far, the lack of significant growth has only been a problem to the extent that one of the objectives of the organisation was not wholly achieved. However, gradually the KNAS is moving into a position where lack of growth is becoming a financial problem. If the zero growth situation persists, the KNAS will no longer be able to fund its current level of activities. Two trends lie at the root of this development.

First, there is a shift in the basis for funding. Currently 50 percent of the funding of the KNAS is directly based on membership numbers. However, changes in the subsidy system are likely to increase the dependence on sheer numbers as the prime basis for funding (d' Ancona 1991, Richelle 1993). In the year 1995 structural subsidies from the Department of Health and Culture (W.V.C.) will cease for those sports associations having less than 2,500 members. Currently the KNAS has 1982 members.

The second trend is the decrease of governmental spending on public facilities. At a national level sports associations are experiencing a decrease and re-distribution of subsidies received for organisation costs and high performance sports. Locally, clubs are having similar experiences with increasing rents for public owned sports premises and counsels taking a critical review of the annual budgets for sports. In the future, further, and more severe cuts of subsidies are to be expected (d' Ancona 1993). This in spite of active lobbying on the part of the National Olympic Committee (Boot 1993). So, not only will the KNAS be more dependent on its size for funding, but also will the absolute flow of governmental money to sports associations decrease.

Up till now all efforts to achieve growth have been aimed at increasing the inflow of new members. These efforts were mostly promotional activities to introduce the public to the sport. Only recently, has attention within the KNAS been drawn to the outflow of members. Since January 1990, approximately 1,600 registered members left the KNAS. Over the last decade the total number of KNAS members has remained constant at around 2,000 people. This means the annual member turnover amounts to 25 percent since 1990.

Focusing efforts towards diminishing the outflow will have three advantages. First, given the current volume of the outflow, reduction can have a significant effect on membership levels. Second, if the reduction of outflow is due to improvements in the service offered, the advantage returns every year. Lastly, investments in efforts to reduce outflow are investments made in the organisation from which also current members benefit. This opposed to investments in promotion, were money is spent outside the organisation.

1.1. Aims and Objectives

The objective of this thesis is to determine and analyse the main reasons for the high outflow of KNAS members. As a result of this analysis recommendations are made on how to stem the exodus. The aim is to provide sufficient material to "ignite" a discussion within the KNAS and its seventy, autonomous Clubs, rather than to present them a checklist solution that was "not invented here".

1.2. Structure of the Thesis

Chapter 2 introduces the KNAS, highlights its structure, its policy, and its relationship with other national and international sports organisations.

Chapter 3 compares the KNAS with other sports associations. Two trends relevant to the problem are explored: the funding of sports organisations and trends in the participation in organised sports.

Chapter 4 provides a theoretical framework for the marketing of services. The current service offered by the KNAS and the clubs is described using this framework.

Chapter 5 discusses the set-up of the survey. It describes what data is needed to assess the causes for the outflow of members, and how this data was collected.

Chapter 6 discusses the method of analysis and presents the results. The analysis is focused on revealing those causes that have the greatest impact on the volume of outflow. The depth of the analysis is constrained by the time and money available for the project.

Chapter 7 reports the main findings of the research and offers suggestions to curb the outflow.

2. KNAS BACKGROUND

Chapter 2 aims to familiarise the reader with the KNAS as an organisation. First its structure and management are reviewed. Second, its policy aimed at increasing membership levels is examined. The chapter ends with a description of the member clubs and an assessment of the degree of control committees have over club activities.

2.1. KNAS Structure and Management

The Royal Netherlands Fencing Association (KNAS) is an association of seventy fencing clubs. Founded in 1908 it is one of the oldest but smaller sports associations in the Netherlands (Chapter 3). In June 1993 the KNAS had 1982 members through its associated clubs.

The Association is managed by an Executive Committee existing of three directors and two members, all of which are non-professional managers (Figure 2.1). The directors and members are unpaid and hold senior management positions outside the KNAS. Except for one employee responsible for administrative support, all functions within the KNAS are staffed by volunteers. The KNAS is divided into five regions that operate autonomously from the Board but are under budgetary control. The regions are managed by Regional Committees.

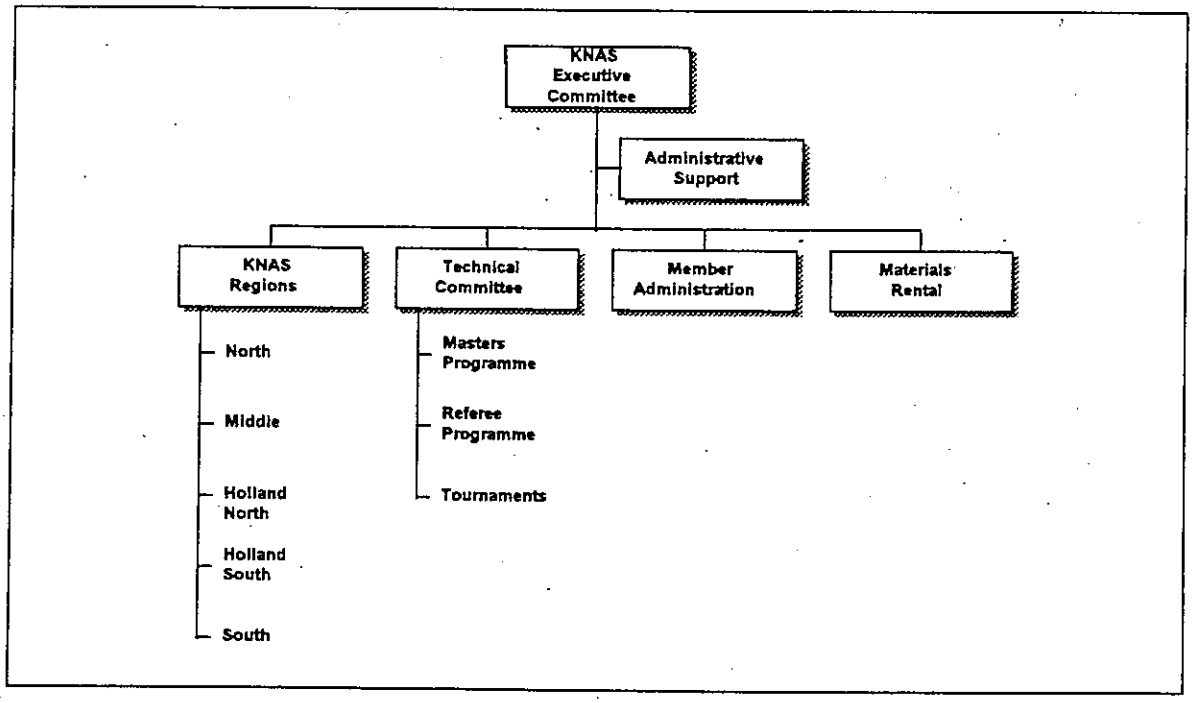

Figure 2.1 The KNAS Structure
Source: Based on data collected by the author

The Executive Committee reports to the "Annual Meeting of Club Representatives". Members of the Executive Committee are appointed at this meeting.

The KNAS has little direct control over the clubs and the way they serve their members. This lack of control will influence the implementation of the recommendations made in this thesis. It is one of two reasons why the author has decided not to present a detailed action plan.

The second reason for this decision lies in the type of management. All committee members are part-time volunteers. This makes it unlikely that the KNAS, given its current organisation, could play a major role

in executing such an action plan. The task of organising the World Fencing Championships in 1995 in the Netherlands is likely to place an extra burden on the KNAS management.

2.2. Current KNAS Policy and activities

The prime objective of the KNAS is to increase the participation in fencing in the Netherlands. The second objective is to increase the qualitative level of the sport. The KNAS seeks to attain the first goal by stimulating fencing at a recreational level. Stimulating high level, international competitive fencing, (top sport), is primarily viewed as a mean to promote recreational fencing and not as a separate goal (van der Flier 1993).

Measures undertaken to stimulate recreational fencing fall into two categories: promotional activities and rendering support to clubs. Promotional activities entail organising demonstrations, major events, (e.g., European Championships, World Championships and World Cup tournaments), and ensuring press coverage. Since 1991 fencing is included as an attraction at a major Dutch operator of leisure centres (Center Parcs). A problem with promotion is that the effect of these measures on the inflow of members is unknown. Requests made to clubs to provide information have proved futile.

Support to clubs is made in a number of areas, (e.g., renting materials for tournaments, education, organising training sessions for youth).

Looking at action that is undertaken to implement policy, I conclude that activities are either aimed at increasing the inflow of members, or at rendering indirect support to fencers through clubs. No action to curb the outflow has been evident from interviews held with the members of the KNAS committee (van der Flier 1993, Helwes 1993, Reurslag 1993).

2.3. Relationships with other Organisations

The KNAS maintains relations with numerous national and international organisations. For the purpose of this thesis I will only concern myself with those organisations that influence the service offered by the KNAS and its associated clubs. Three types of organisations fall into this category.

The first types include organisations providing funds, (these relations are discussed in chapter 3). Of the second type are the so-called "sports federations": the National Olympic Committee (N.O.C.) and the Dutch Sports Federation (N.S.F.). The third type of organisation relevant to the KNAS are other sports organisations concerned with fencing. Only the KNAS' relation with the International Fencing Federation (F.I.E.) will be discussed because it has a direct influence over the KNAS.

2.3.1. Relations with the N.O.C./N.S.F.

Recently the N.O.C. and the N.S.F. have merged. The resulting N.O.C./N.S.F. is now one of the prime stakeholders of the KNAS. The importance of the N.O.C./N.S.F. for the KNAS has been enhanced as a result of shifts in governmental policy. The Department of Health and Culture (W.V.C.) is aiming to place more responsibilities in the hands of the sports organisations (Beckers & Serail 1991, Richelle 1993). The N.O.C./N.S.F. already had an important advisory role in the distribution of funds destined for top sports. Above sources indicate that the role in distribution of funds will increase. Other functions performed by the N.O.C./N.S.F. are related to top sports and fall outside the scope of this thesis.

2.3.2. Relations with the F.I.E.

The F.I.E. is the international body governing all national fencing associations. The F.I.E. is responsible for rules and regulations of fencing for all international events, (e.g., World Championships, European

Championships, Olympics). These regulations pertain to the formula of competition used and to safety standards for fencing equipment. The KNAS can deviate from both types of regulations for national competitions only.

KNAS policy in this matter is to follow F.I.E. safety rules as long as the changes are proven to be safety enhancing. Changes in the safety regulations have an impact on the cost of fencing.

2.3.3. Conclusion

At a national level no restrictions other than those regulating policy and utilisation of funds for top sport exist. The KNAS has sufficient freedom to tailor the national system of competition to the needs of its members. However, it should be noted that funding that is top sport related cannot be used for other goals (Chapter 3).

2.4. Clubs

The seventy member clubs of the KNAS are spread over the Netherlands. There are only three clubs that have over one hundred members (Figure 2.2). Note that the clubs in this bar chart add up to seventy-five. This is caused by the fact that four "clubs" registered in the KNAS administration have zero members and one "club" is an association for "fencing masters". Three of the clubs are in fact small associations whose members practice at various other clubs. That there are many small clubs makes it more difficult for the KNAS to exert influence over their activities.

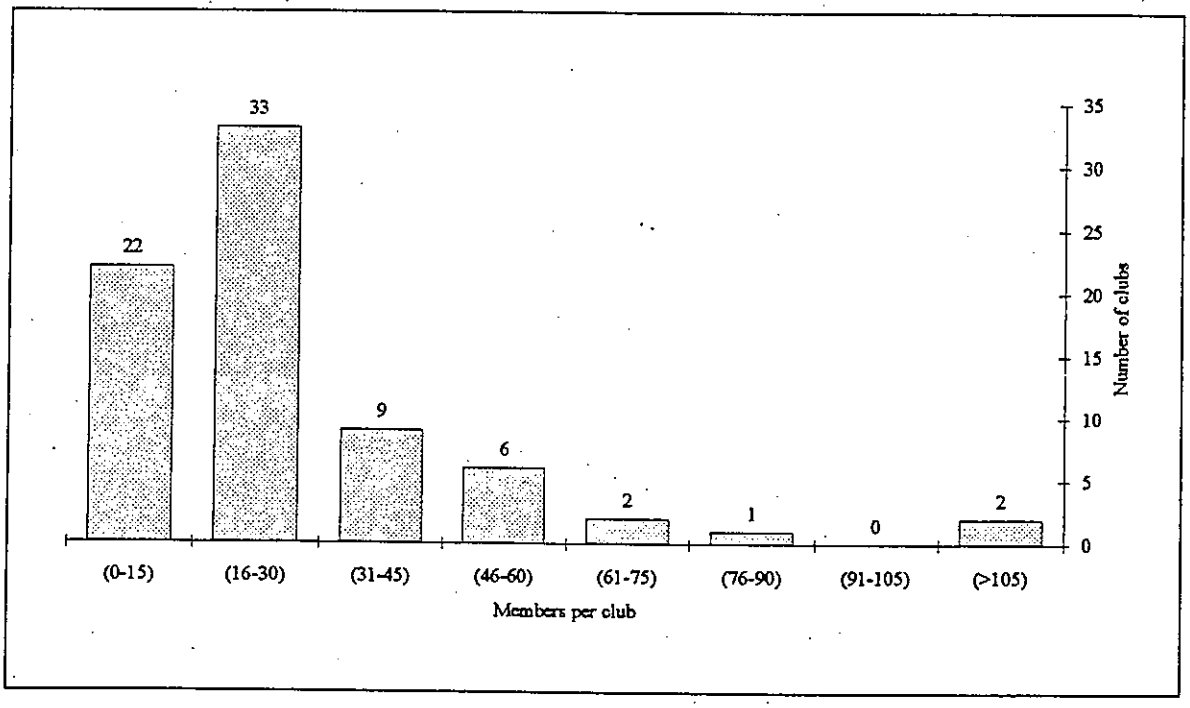

Figure 2.2 Clubs: number and sizes
Source: Based on data collected by the author.

Ninety-five percent of the clubs have similar legal structures. Like the KNAS, all fencing clubs are "Not for Profit Organisations" set up as either a "Foundation" or "Club" under Dutch Civil Law. Both are governed by committees who are elected by the members. These committees are responsible for day-to-day club management, (e.g., administration, finance, facilities and trainers).

Based on the formal legal structure, committees are in full control of the clubs and the service it offers to its members. However, in practice, based on the degree of control, two types of clubs can be distinguished (Helwes 1993). In the first type the balance of power rests with the club committee. Actual control over the service follows the formal model. Within the second type of club control over the service offered is shared between the club trainer and the committee. In these clubs the trainers are usually professionals running a private business. It is estimated that five out of the seventy clubs are of the latter type.

3. SPORTS FEDERATIONS: THE KNAS IN PERSPECTIVE

The aim of this chapter is to place both the KNAS as an organisation and the problem of zero-growth in perspective vis a vis other sports associations. The chapter starts by giving an overview of the size of different sports associations. Following the relation between membership levels and availability of funds is discussed. The chapter closes with a comparison of KNAS growth figures with those of other associations, taking into account three trends in organised sports.

3.1. Sports Organisations: Types and Sizes

The quality, level and range of the services offered by an organisation are influenced by its size and means. The KNAS has one part-time employee for its administration. Other functions are staffed by volunteers (Chapter 2). The question arises whether the KNAS administrative support organisation differs from other sports associations.

Evidence suggests that there is a link between the number of members of an association and the level of administrative support (Pruin 1993). Based on its membership level, the KNAS has a level of support that is similar to other associations of its size (APPENDIX A).

3.2. Funding

This paragraph starts with a discussion of the general relationship that exists between membership levels and the funds available to sports associations. Following the link between membership levels and funds available to improve service for all KNAS-members, the so-called "discretionary funds", is examined.

3.2.1. Current funding

Sports associations have five sources of funds. Of each source three attributes are of interest: factors influencing the amount of funds available; possible restrictions in the application of funds; and the continuity of funding.

One source of funds is *membership fees*. The amount of money generated through membership fees is directly linked to the number of members. An advantage of membership fees is that there are no restrictions on the application of the funds. This attribute, and the sizeable percentage of total income that is provided make membership fees the most important source of income.

A second source of funds is *subsidies supplied by the Department of Health and Culture (W.V.C.)*. These subsidies fall into two categories: subsidies for organisation and administration, the so-called *structural budget*, and subsidies for special purposes such as education and training (d'Ancona 1991).

Determination and justification of the size of the structural budget are technically complicated (Hofland & Vrancken 1988, Poelert & Vrancken 1990, Kramer 1993) The system for calculation of the structural budget has three important features: First, starting January 1, 1995, only associations with more than 2,500 members will be eligible for structural subsidy (d'Ancona 1991, Keij 1993). Second, the size of the budget is dependent on the number of members of a sports association. Third, the subsidy is based on a so-called "Fixed-Pie System": the total amount of subsidy available for all sports associations together, is fixed (APPENDIX B). This implies that the growth of the number of members of an individual association must at least be equal to the average growth of all associations, in order to receive the same amount of subsidy the next year.

The budget for education and training can only be spent for these purposes. Although the size of this budget is subject to negotiation with W.V.C. in practice membership levels are of influence (Reurslag 1993). Both W.V.C. subsidies must be applied for each new budgetary year.

The third source of funds available to associations are subsidies for top sports supplied by "Stichting de Nationale Sporttotalisator" (S.N.S.), a foundation aiming to increase the level of achievement in top sports. These subsidies are dedicated to top sports and cannot be applied otherwise.

The fourth general available source of funding consists of sponsorship funds. The size, conditions of application and continuity of funding vary per association and sponsor agreement made. The KNAS has no sponsor funds available other than travelling funds for top sports.

Next to these four major sources of funds associations have a collection of sources which vary per association, such as proceeds from competitions or interest. With the KNAS they make up less than ten percent of the budgets (1992 and 1993). Some vary with membership level.

With most sports associations a sizeable amount of their discretionary income is linked to the number of members. Based on the 1991 financial data of sixty-five sports associations (W.V.C. 1993) the average percentage of discretionary income that was directly linked to the number of members was 53.1 percent with a standard deviation of 18.6 percent. For the KNAS this figure was 48.5 percent.

These figures were computed using following equation: $\frac{(StructuralSubsidy + MembershipFees)}{(TotalIncome - S.N.S.subsidy)} * 100\%$

3.2.2. Trends in funding

Three trends in the funding of associations can be discerned that will influence the KNAS financial situation. First, there is the decrease in structural subsidies from the Department of W.V.C. Budgetary cuts, amounting from 1.6 percent in 1994, to 5.6 percent in 1998, have already been announced (d'Ancona 1993).

The second trend is caused by the increased linkage of funding to membership levels of associations. Not all members of a club are automatically registered as a member of the association. These club members are referred to as so-called "grey-members". It is expected that associations will react to the increased importance of membership levels by more actively registering the grey-members (Keij 1993). This will mean that the total W.V.C. budget for structural subsidies will be divided over more members (APPENDIX B).

The third trend is the proposed new policy of increased freedom in the application of funds (Richelle 1993). As a general principle subsidy will be given to finance business plans instead of the current financing of categories of costs, such as costs of organisation, or costs of training. Accountability for subsidy spending will be linked to attaining the goals in the business plans. However, at the time of writing the details of these changes are unknown. Further information is expected in October 1993.

There is a fourth trend, namely the scarcer availability of sponsor money. Because the KNAS is currently not sponsored, this trend does not directly effect the KNAS and will not be discussed further.

3.2.3. Consequences for the KNAS

My purpose is to show that membership levels directly affect the amount of money available to render services to fencers. To assess the impact of the increased linkage of funding with membership levels, not only sources of funds, but also the application of funds needs to be reviewed. However, a detailed financial analysis falls outside the scope of this thesis.

With respect to membership levels all costs of the KNAS are either fixed, or costs are exactly matched by dedicated budgets, such as the S.N.S. budget for top sports. Should the KNAS membership level rise there is evidence that costs can remain fixed within a certain range. There are associations with between 10,000 and 15,000 members who operate with the same level of administrative support as the KNAS (APPENDIX A). When costs are fixed, a decrease in revenues will immediately cause a shortage of budget.

Consequences for the 1993-4 period differ from those after January 1, 1995. Even when assuming zero growth of membership levels for all associations in the year 1993, structural subsidy for 1994 will decrease with 4.9 percent (d'Ancona 1993, Kramer 1993). Based on the estimated KNAS budget of 1993 this would necessitate cuts in spending on organisation, regional activities and national championships of 1.2 percent in 1994. Cuts in spending imply a decrease in service offered to the members. Decrease in service is likely to have an adverse effect on membership levels (Chapter 6).

Although this figure in itself may not seem alarming two points should be made. First, the negative effects of inflation have not been incorporated in the calculation. Second, the assumption that other sports associations will not grow is unrealistic. It is more likely that the growth of all associations combined over 1993 will equal the annual figure of the preceding two years at approximately 1.5 percent (van Maanen & Venekamp 1991, Venekamp 1991). Thus, structural subsidy for 1994 would further decrease (APPENDIX B).

After January 1, 1995, the KNAS will lose all structural subsidy, should the membership level remain under 2,500 (d'Ancona 1991, Keij 1993). Based on the KNAS 1993 financial estimate (Reurslag 1993) loss of the structural subsidy would constitute a decrease in discretionary income, (income without restrictions on application), of 24 percent annually. Non-discretionary KNAS income, (income with a dedicated application), is wholly committed to top sports, education and training.

3.3. Trends in Organised Sports

Three trends are visible when looking at the membership levels of sport associations. First, the increase in members of sports associations is equal to the growth in population. Second, relative to the total number of members, there is an increase in individual sports. Third, relative to the total members of sports associations for individual sports, the number of members in the adult age category (members aged 18 years and over) is growing .

Note that the figures given in the following paragraphs relate to *membership levels* of associations. This need not be the same as the number of *participants* in a sport. The number of active members can vary per association. However, because no other data is available (C.B.S. 1992), I will use the membership levels of the various associations as an indicator for the number of participants in organised sports.

3.3.1. Membership growth follows population growth

The number of participants in organised sports is growing at a rate marginally higher than the population. (Figure 3.1). In 1963 the total population of the Netherlands was 12.042 million people. In 1980 the population has risen to 14.091 million. In 1989 this figure was 14.805 million (van Maanen & Venekamp 1991). When looking at membership levels of the Dutch Sports Federation and population growth it is clear there is a growing market for organised sports.

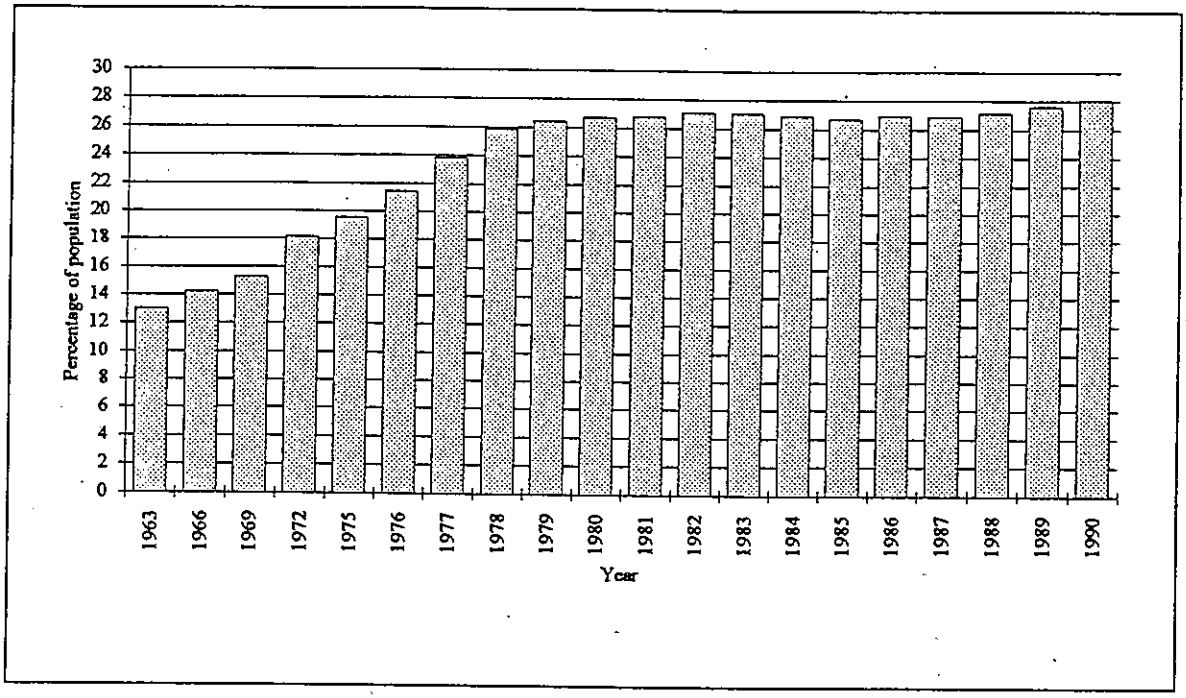

Figure 3.1 Participants in organised sports as percentage of population
Source: Based on data from van Maanen & Venekamp 1991, p. 9, C.B.S. 1966, 1970, 1980,1987, 1990, 1993

3.3.2. A shift from Team to Individual Sports

During the eighties participation in individual sports experienced higher growth levels than in team sports (Figure 3.2). In 1963 team sports accounted for 42% of the members of total organised sports. In 1980 this percentage was 37%. Nine years later (December 1989) only 33% of the organised sportsmen and women are engaged in team sports (van Maanen & Venekamp 1991). Thus, it can be concluded that in a growing market for organised sports, prospects for associations for individual sports are favourable.

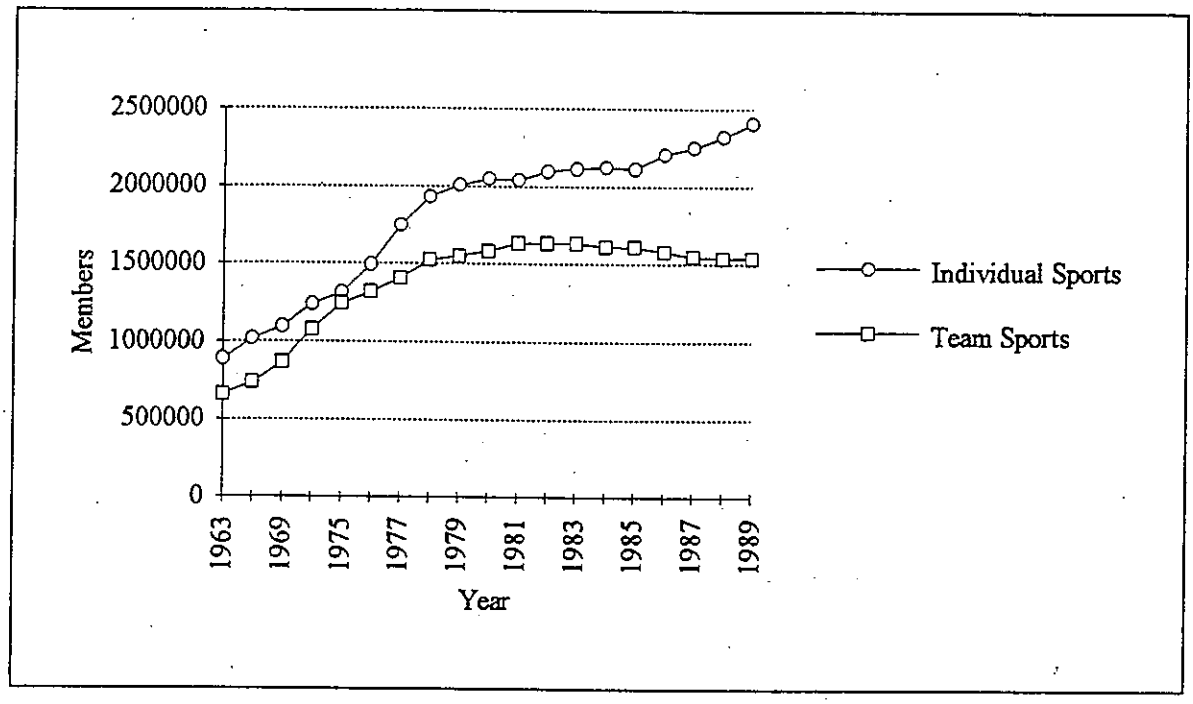

Figure 3.2 Individual versus team sports
Source: Based on data from van Maanen & Venekamp 1991, p. 18

Latest figures for 1991 and 1992 indicate the growth trend in individual sports is continuing, (Venekamp 1993).

3.3.3. Adults are the fastest growing category in individual sports

An interesting aspect is the age category in which the growth of individual sports occurs. Compared with the youth category (age < 18 years) the adult category (age ≥ 18 years) is the fastest growing (Figure 3.3). This growth cannot be wholly explained by changes in demography. Between 1978 and 1989 the number of adult participants in organised sports grew by 96 percent. Over the same period adult population in the Netherlands grew with only 17 percent (van Maanen & Venekamp 1991). According to various authors (van Bottenburg 1992, Vanreusel 1992, Roberts et al., 1991) three other factors come into play.

First, there has been an increase in spare time (C.B.S. 1992). In the early eighties the average number of hours worked per week decreased to approximately thirty-eight. Second, there has been an increased awareness for health. Third, on average individual sports have a higher social hierarchy index than team sports. The higher the social hierarchy index of a sport, the higher is the social status that is derived from participating. In 1986, of the ten sports having the highest social index in the Netherlands, eight were individual sports (van Bottenburg 1992).

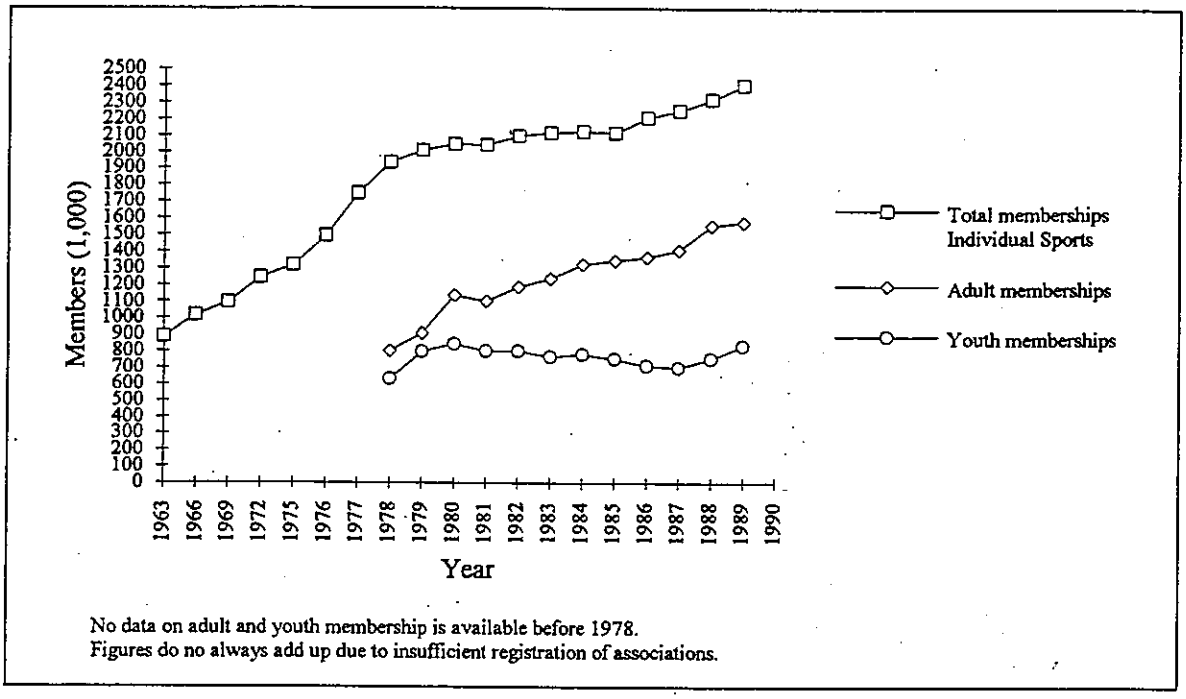

Figure 3.3 Adult and youth participation in organised sports
Source: van Maanen & Venekamp 1991, p. 19

The growth in the adult age category could have certain policy implications for the sports associations. So far, proclaimed policy of most associations has been to address young athletes and to encourage them to compete at an international level. The change in "customer base" raises the question whether policy should not be adjusted. Should more money be spent on the 18-45 years age category? (de Heer 1984) Some authors claim that if the policy remains unaltered the associations should accept possible loss of members (Kramer & Dekker 1986). I do not agree with their conclusion. In my opinion the new funding system of sports associations will make this course inadvisable: all levels of sport will be funded on the bases of membership numbers, (see paragraph on Funding).

3.4. KNAS membership figures compared

When looking at the KNAS membership figures in isolation it is difficult to determine whether lack of growth constitutes good or bad performance. Does the KNAS in fact have a problem with membership numbers or are they doing better than other associations for organised sports? For this assessment comparative data is needed. This raises the question with which associations the KNAS figures should be compared. When viewing fencing as a service on the market for leisure activities this question becomes: "What business is the KNAS in?". Definition of the "market" is the first and crucial step in competitive analyses (Porter 1980, Luffman et al. 1991).

Based on what criteria should the market be defined? Within the KNAS it is customary to compare oneself with sports associations of similar size or with associations for other combat sports, (van der Flier 1993). I believe this approach is questionable. In their comparative analysis certain attributes of the KNAS, (e.g., size), or of fencing, (e.g., the fact that fencing is a combat sport), are used as basis for the definition of the market. There are many attributes, (e.g., organisational form, number of participants, indoor or outdoor sport, social hierarchy index), that can be used to classify sports associations and sports. Why are these specific attributes used to define market and competition, and not others? The underpinnings of the choice made are not clear.

An alternative approach is to use those sports that are proven to act as competitors for fencing. However, this would require extensive market research. To circumvent this research problem I have used my own survey results as an estimate.

The questionnaire used for the survey (APPENDIX C) asked respondents to list their other sports activities during, and after the period they had fenced (questions 10 and 16). The sports indicated by the respondents (APPENDIX D) are in line with the membership levels of the various sports associations. Therefore, I will first compare the development of KNAS membership figures with total organised sports.

The questionnaire (APPENDIX C) also asked respondents for their motivation to take up fencing (question 17). A large number of respondents (58.4 percent) indicated they took up fencing because it is an individual sport. In reply to questions 10 and 16, of the thirty-seven sports mentioned, thirty-one were individual sports. Therefore, second, I will compare KNAS figures with total individual organised sports.

Non-sports leisure-time activities could also be viewed as substitute services for fencing but these fall outside the scope of this thesis.

3.4.1. KNAS membership level versus total and individual organised sports

From 1972 onwards fencing has lagged behind in growth compared to total organised sports. Compared with the development of individual sports fencing does even worse, especially after 1985 (Figure 3.4). All membership figures are indexed relative to the 1963 level. Using trend analysis, (calculated using the least squares method), individual sports show an average annual growth rate of 3.31 percent between 1985 to 1990. This in stark contrast to fencing's 0.37 percent over the same period.

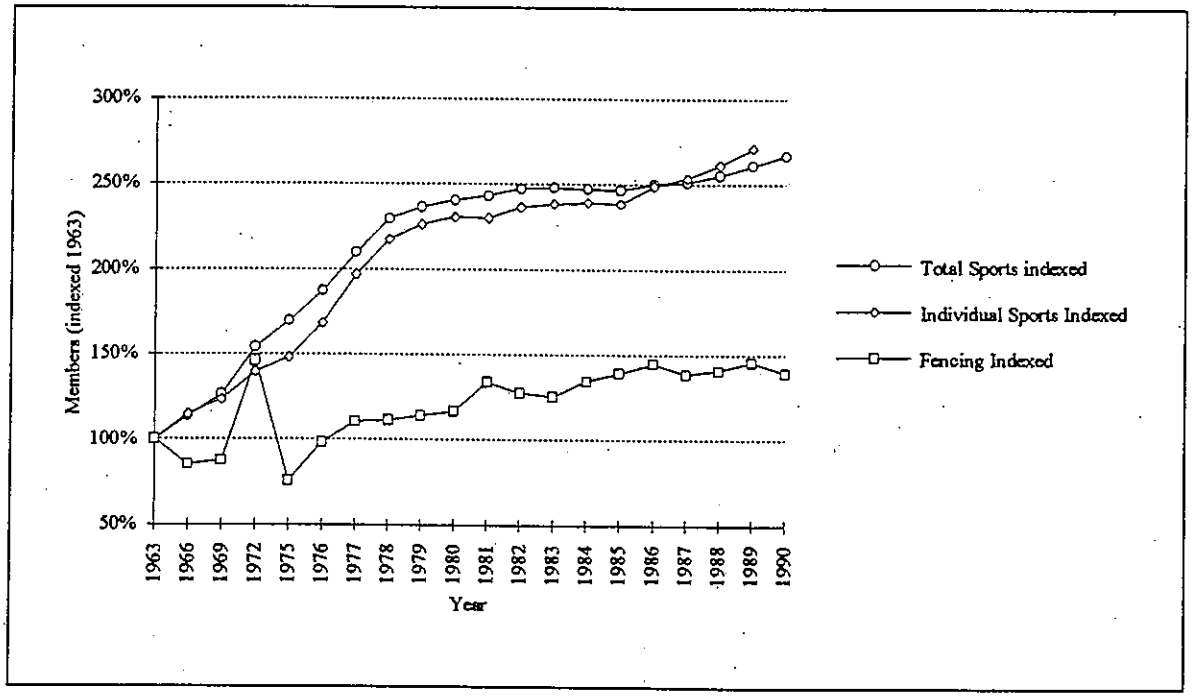

Figure 3.4 Fencing membership levels compared with total and individual sports
Source: Based on data from van Maanen & Venekamp 1991, p. 18, p. 35

3.4.2. Conclusions

Measured by both standards the KNAS membership figures are lagging behind in a steadily growing market for organised sports. In theory the KNAS need not suffer from the developments discussed in earlier paragraphs. Certain attributes of fencing, (e.g., the fact that it is an individual sport that can be exercised at any age), seem to fit in well with the direction of observed trends. In spite of this there has been no significant growth. Combined with the sources of funding and the system for structural subsidies (funding related to membership numbers) this lack of growth poses a serious financial problem (paragraph 3.3).

4. FENCING AS A SERVICE ON THE LEISURE-TIME MARKET

This chapter provides a theoretical framework for the marketing of fencing as a service. Within marketing the concept of the marketing mix is used to refer to the areas of decision making concerned with selling a product on a market or a market segment. Together these areas form a proven, coherent set of controls. I will use this framework to assess the degree of control the KNAS and its member clubs have over the services offered. The degree of control over the service elements, together with the survey results (chapter 6), form the basis for the recommendations on how to stem the exodus (chapter 7).

The chapter starts out by distinguishing between products and services and highlights some of the features unique for providing a service. Following the Marketing Mix for Services (Cowell 1984) is used to describe the service currently offered by the KNAS and its clubs. Special attention is paid to the different roles of the "customer": the club member.

4.1. Characteristics of services

Services have certain characteristics that uniquely distinguish them from physical products. Among the most mentioned by various authors (Cowell 1984, Armistead 1985, Dibb et al. 1991, Staughton & Williams 1993) are:

- **Intangibility**:
  The offer made to a customer often consists of an intangible item. Services can be classified on the "goods-service continuum". In e.g., in teaching, the good bought is dominantly intangible, as opposed to a fast-food service, where also physical items are sold.

- **Perishability**:
  Services cannot be stored. This means capacity to produce the service has to closely match customer demand.

- **Inseparability**:
  Production of a service requires the presence of the producer. It also implies that the service cannot be separated from the system producing the service: the so-called "delivery system".

- **Roles of the customer**:
  Production of a service often not only requires the presence of the customer, but the customer can actually take part in producing the service. Also, customers can influence the service delivered to other customers.

- **Heterogeneity**:
  It is often difficult to standardise output. Standards depend who provides the service and where it is provided. The role of the customer in production reinforces this characteristic further.

- **Ownership**:
  The customer has access to, but does not own, the facilities involved in producing the service.

These characteristics of services have implications when searching for a framework for the marketing of service operations. The traditional marketing mix for tangible goods (product, place, promotion and price) is insufficient to capture the special role of the customer when providing services. The "product" element of the marketing mix for goods does little to recognise the inseparability of the service and the delivery system.

A framework tailored to these characteristics is needed to describe the areas of decision making for the marketing of services.

4.2. Marketing Mix for Services

The revised marketing mix for services contains three additional elements to be controlled by the marketeer: *people* (customers and personnel), *physical evidence* and *process*. (Figure 4.1) Two adaptations to the model were made: First, the elements of the mix are centered around the customer client in recognition of the fact that the marketing mix is based of satisfying customer expectations (Dibb et al. 1991). Second, I decided to distinguish between the customer as an individual whose wants need to be satisfied "the customer client" and the customer as a provider of service to other customers "the customer producer". This change was needed because in a sports club other club members play a major role in producing the service (paragraph 4.4).

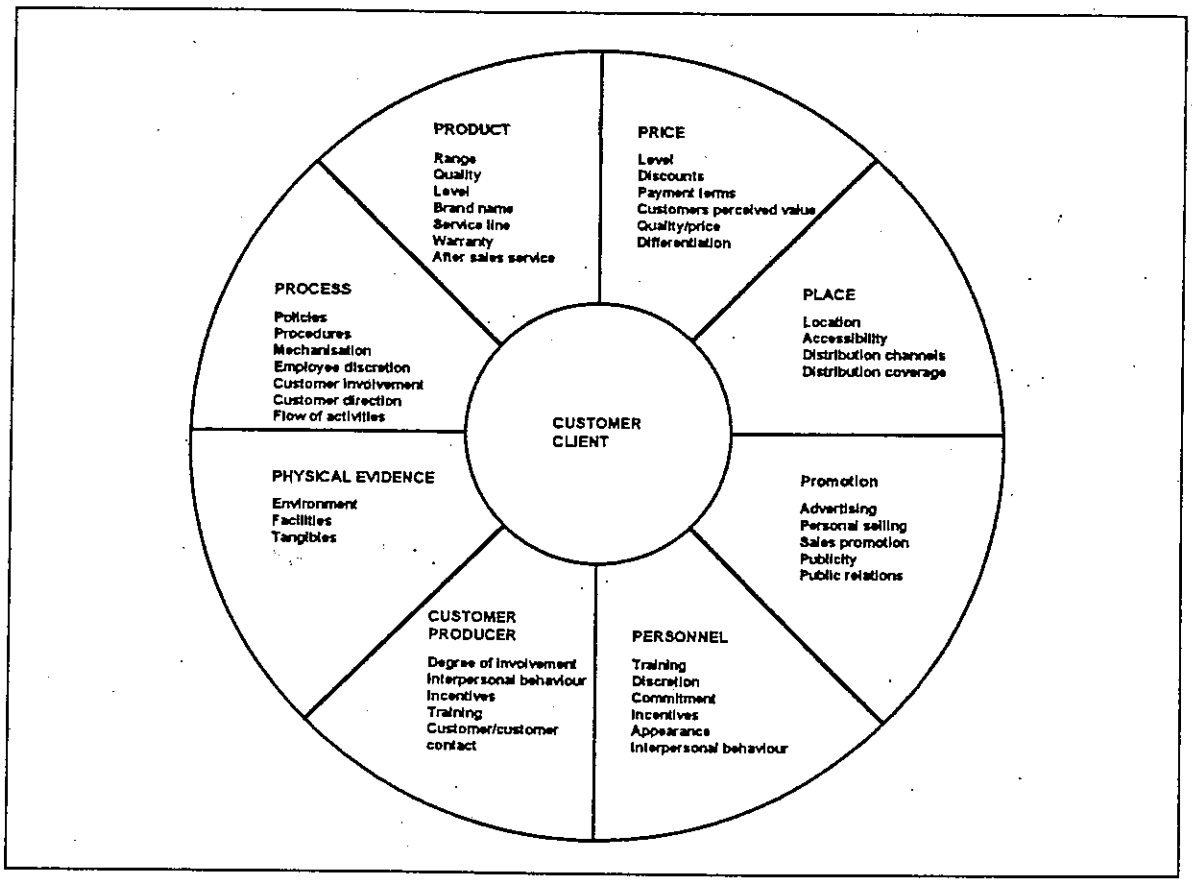

Figure 4.1 The Marketing Mix for Services
Source: Adapted from Cowell (1984), p. 70

Three reasons underlay my decision to use Cowell's framework. First, the problem of analysing reasons for outflow deals with customer expectations and customer ratings of the current service offer. A renowned model for managing service industries is Johnston's Strategy Development Model (Johnston 1989). However, Johnston's framework is geared to the design of total service strategies. The analysis of outflow only deals with the first step of Johnston's model: market orientation. Design of a service strategy could be a recommendation, but falls outside the scope of this thesis.

The second reason has to do with the level of analysis. There are two levels of analysis possible, the KNAS level (including the regions) and the (individual) club level. The marketing mix for services offers the freedom to do both, without being forced into too much detail at club level. Frame works for service operations design (Armistead 1985) are ideally suited at club level. However, given the fact that there are seventy clubs, this level of analysis is infeasible within the resources available for this thesis.

Finally, Cowell's mix incorporates "people" as one of the elements in the mix. Fencing is sport that is technically complicated and thus requires a great deal of personal attention to learn. People, both customers and club officials play a leading role in production of the service (paragraph 4.4).

4.3. Fencing in the marketing mix for services

The purpose of using the marketing mix is to "map" who has control over the different elements of the service offered by the KNAS and its clubs (Figure 4.2). A "full dot" indicates a large degree of control, a "half dot" only a minor degree. Control is defined as "having discretion to make changes" in the elements of the mix. Control can be shared between actors. Please note this is irrespective of "the degree of control". A club is in control of the club facilities, however, it may be very difficult to actually make changes due to financial restrictions.

Observe that of the actors having control over the different elements of the mix either the clubs or the trainers are involved. This makes will make it difficult, if not impossible to implement improvements top-down. Some elements, such as the price of fencing equipment, fall outside the scope of control of all actors, or can only be partially controlled.

There are four types of services currently offered to fencers. The first type of service consists of "fencing lessons". These are often individual lessons ranging between 20-40 minutes in duration. This means a fencing master can only serve approximately seven people during one training session. Individual sessions are essential because fencing is technically complicated, e.g., a full-time professional education programme to train a fencing master takes just over two years.

The second type of service consists of "training matches" between fencers. Thus customers serve other customers. Because there are three weapons (epee, foil and sabre) in effect fencing consists of three different sports. This means that the availability of other club members fencing the same weapon is essential.

The third service available is "Tournaments". These are organised by the clubs the form of knock-out tournaments.

The fourth type of service "Competitions" is currently not available at national level. Regionally however, some action is undertaken.

There are other services offered by clubs, but these are too diverse and limited in scale to warrant further mentioning.

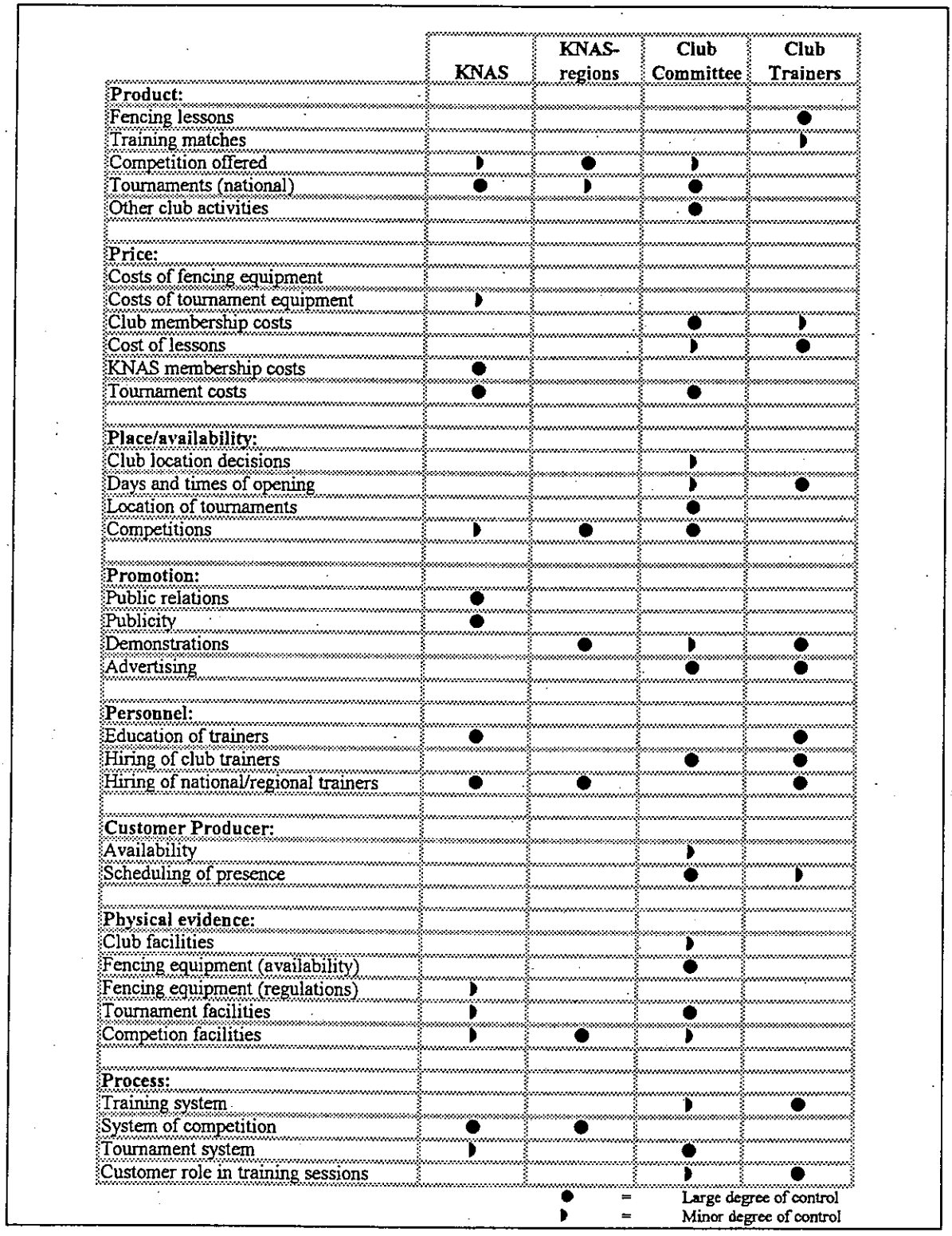

Figure 4.2 Actors controlling the Marketing Mix

Source: Based on data collected by the author

4.4. The role of the club member: customer and service producer

The special role of the customer in service operations was briefly touched upon in paragraph 4.1. The service offered by the KNAS and its clubs is one with high customer contact. Apart from the preparatory stages of tournaments, the entire service takes place in the "front room": service production is totally visible for the customer. Thus customer satisfaction is influenced by its perception of the service offered, rather than by measurable standards. As Davis and Heineke put it:

> "Satisfaction = Interpretation of performance minus Expectation" (Davis & Heineke 1993).

This means the customer's satisfaction is highly dependent on the attitudes of those involved in the production of the service. The major producers of the service are other club members present at the clubs. An attribute of fencing is that it requires presence of opponents, not only fencing the same weapon, but, also possessing similar ability. In this respect the sport resembles badminton or squash. The presence of suitable "customer producers" will, next to the process of training, to a large extent determine the club member's rating of a club.

5. SURVEY SET-UP

The set-up of the survey is the most crucial part of the research process. The survey is the instrument needed to reveal the reasons for the turnover. This chapter deals with the underpinnings of the survey: the choice of the survey method; the design of the questionnaire; the choice of respondents; and the method of sampling and the sample size. As will be explained in this chapter, the survey constitutes a constant trade-off between what is desirable from a theoretical point of view and what is practical given limited time, money, commitment of respondents and others involved.

5.1. Objectives

The primary objective of the survey is to gain insight in the reasons why people discontinued their membership. The results of the survey will be used to advise on possible modification of the service offer.

Secondary objectives are to determine the image fencing has, to get some idea of the effect of promotional efforts undertaken by the KNAS and its clubs, and to measure what other sports are competitors for fencing.

5.2. Survey method

Different survey methods, (mail, telephone, personal interview), all have advantages and disadvantages in economy, flexibility, elimination of interviewer bias and respondents' co-operation (Dibb et al. 1991). The choice for a mail survey was based on:

- The existence of time limits. Mail survey is the least time consuming of the three methods.
- The lowest cost provided an adequate return rate is achieved. The expected return rate was high, (between 20-50 percent). My expectations were based on results with five similar types of surveys: Soccer, Tennis, Athletics, Basket-ball and Hand-ball (Kramer & Dekker 1986, Bassa & Naafs 1987). For comparison, one of the highest response levels attained by Nielsen Market Research Netherlands in commercial research was 22 percent. In that particular survey respondents were offered money if they returned the questionnaire (van der Flier 1993).
- Availability of a mailing list of sufficient size and quality. (See also "Sources of data".)
- The advantage of eliminating interview bias. The author is both familiar with, and well known within the organisation. This can lead to bias and might influence respondents when using telephone, or personal interviews.

5.3. Questionnaire design

Designing the questionnaire involved two major steps: determining what data needs to be gathered (sub-paragraphs 5.3.1 and 5.3.2) and formulating questions in such a way that respondents will provide the type of data that was intended (sub-paragraphs 5.3.3 and 5.3.4).

5.3.1. The research process

The research procedure I have chosen somewhat deviates from the "traditional" research process (Dibb et al. 1991, Kottler 1984, Cowell 1984). Usually, hypotheses are developed at an early stage of the research. This is possible when the researcher has enough prior knowledge to formulate expected results. In such a case the research questions can be precisely aimed at proving or rejecting the hypotheses.

Unfortunately with the KNAS little prior knowledge is available: no exploratory research into the causes for the turnover has ever been done. Although similar research has been conducted for other sports associations, (Kramer & Dekker 1986), using their findings to develop hypotheses is invalid because circumstances can differ widely. To overcome this handicap I have adapted the research procedure (Figure 5.1) to better fit the needs of the problem.

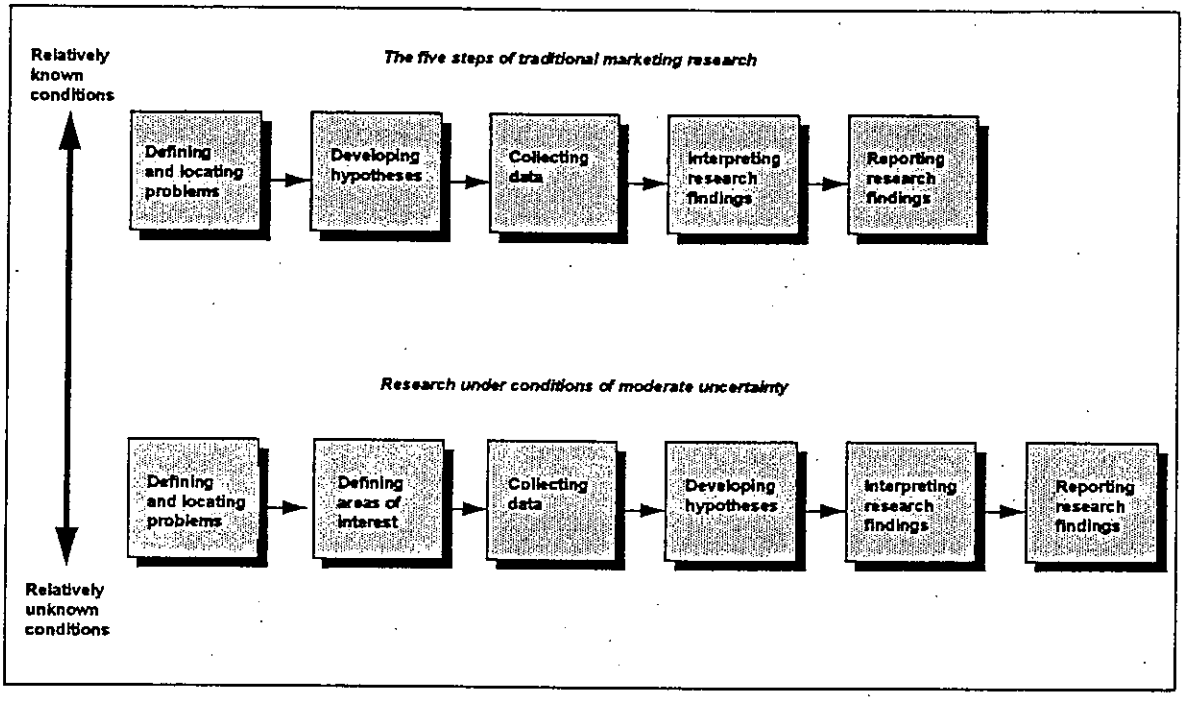

Figure 5.1 Approaches to research under different conditions of prior knowledge
Source: Adapted from Dibb et al., 1991, p. 175

In this alternative approach hypotheses are developed at a later stage in the research procedure. However, given limited resources of time and money, data can only be collected once. Thus, a basis other than hypotheses is needed for the definition of the questions used in the data collection phase. Therefore I have decided to define so-called "Areas of Interest". These are research areas that are likely to contain factors relevant to the problem.

5.3.2. Areas of interest

The areas of interest are based on the services marketing mix, the service concept and the service offer defined (chapter 4). Further I made limited use of causes found in similar research and personal intuition. Together they form the basis for the questionnaire (APPENDIX C) mailed to ex-KNAS members and ex-Club members.

Areas of interest for the research included:

- **Member statistics**
  These include characteristics describing the ex-member or ex-fencer that might be relevant on his or her appreciation of the service offer, such as sex, age or weapon.

- **Club statistics**
  These include characteristics describing the club, such as facilities offered or opening times.

- **Member expectations**
  These questions aim to discover the motivation of people to join a fencing club. In other words: "What are the customer needs that are to be fulfilled?"

- **Appreciation of the service offer**
  These questions all touch on certain areas of the service offer. Some are formulated in conjunction with personal circumstances or characteristics of the respondent.

- **Response to communication**
  This question is aimed at measuring the response to certain promotional activities undertaken by KNAS and certain clubs in recent years. Although not directly relevant to problem, this item was included because the survey is a unique occasion for the KNAS to get some idea of the effectiveness of previous actions. This data will not be analysed in the course of this thesis.

- **Competing sports**
  These questions ask for other sports activities of the respondents during and after their membership. The goal is to assess which sports compete with fencing. This data can be used both for comparison of membership data from other sports organisations, (Paragraph 3.4., "KNAS membership figures compared"), and later by the KNAS to learn from services offered by successful competitors.

5.3.3. Type of questions

For the convenience of the respondents, whenever possible, multiple-choice type questions were used. To prevent loss of information each section of multiple-choice questions is followed by one open ended question.

Whenever questions ask the respondents for an opinion a five-point Likert scale was used (Alexander 1985). This has the advantage that correlation techniques can be applied. I chose a five-point scale because it offers a respondent sufficient nuance to indicate an opinion. A three point scale gives little room to refine answers, whereas a ten-point scale offers a degree of refinement that no longer is meaningful with the type of questions used in the questionnaire (APPENDIX C) because the values are linked two descriptions of feelings such as "strongly agree" or "agree" (Mendenhall & Reinmuth 1982).

Dichotomous questions were used whenever it was suspected that a division of the population in two classes could be useful, e.g., a division of members who have and those who have never participated in tournaments.

5.3.4. Pre-testing

Limited pre-testing was performed on a small group of people, (three), in the age of 12, 18 and 36 years respectively. This revealed that it takes approximately 10 - 15 minutes to complete the questionnaire. No extra instructions, other than those printed on the questionnaire, were needed.

5.4. The surveyed group

Having designed the questionnaire the final step in the survey set-up included the production of the mailing database. First the choice and the accessibility of respondents are discussed. The paragraph closes with elucidating the choice of sampling method and sample size.

5.4.1. Choice of respondents

The objective of the study is to advise on measures to stop the outflow of KNAS members. To attain this objective knowledge of the rating of service offered by clubs is essential. Two categories of respondents could be surveyed: ex-members and members who are still active.

The ex-members are the prime source of information because together they make up the outflow. I also contemplated using the second category as a reference group to check results from the first group. However, this has major disadvantages: first there are limits on time and financial resources; furthermore, and more important, I have severe doubts about the quality and comparability of the answers. Ratings of services currently received tend to be heavily influenced by occurrences at the time of asking (Cowell 1992).

5.4.2. Access to respondents

To reach the ex-members, their names and addresses or telephone numbers need to be available. There are two sources containing this information: the KNAS membership records and the membership records of the individual clubs.

KNAS membership records

Since 1990 the KNAS has custom-built software for membership administration. Of each ex-member at least name and address are registered. In many cases the system also contains the telephone number of the respondent. This facilitates follow-up by telephone if necessary. June 1993 the system contained 1,644 records of people registered as ex-members. The method of registration is such that mutations are immediately entered when received. Even though a member has paid fees for one whole year, he or she is stricken from the records on the date of receipt of the notice.

The KNAS membership records have a number of limitations:

- Records before January 1990 are either not available, or inaccessible.
- For the years 1990 and 1991 only records of ex-members are held, (due to technical problems).
- Before January 1992, switching membership between clubs was registered as one member leaving and a new member joining. This means that not all those registered as ex-member have really given notice. However, those in charge of administration estimate this group to be less than twenty-five. This is 1.5 percent of the ex-member records. Given this percentage and the technical difficulties involved in clearing the records, I decided not to separate this group of twenty-five from the ex-members.
- Not all clubs register all their members with the KNAS (Helwes 1993).

After having eliminated seven ex-members who were known to be deceased and sixteen addresses of people with foreign subscriptions, 1,621 usable addresses remained. The foreign subscriptions were made for administrative reasons, e.g., fencers from Eastern-European countries.

Club membership records

Regulations compel clubs to register their applicants as KNAS-members after they have stayed with the club for six months. This means that those who have tried club membership for a few months, so-called "Shoppers", cannot be reached using the KNAS membership records.

To overcome this problem I have sent a letter (APPENDIX E) to all seventy clubs, requesting them for names and addresses of their ex-members belonging to this category. Club response to this request was poor: by August 1, 1993, only eleven out of seventy clubs had replied (15.7 percent). In similar research conducted in four other sports associations average club response was 38.6 percent (Kramer & Dekker 1986).

From the addresses received sixty-six were usable and dated from the same period (1990-3) as the KNAS data. This means that little data about the "less than six months category" will be available, even when assuming the response percentage for both categories of ex-members will be the same.

5.4.3. Sampling method & sample size

Sampling techniques are used whenever it is not possible, or unnecessary to survey the entire population. Sample statistics are then used to estimate the statistics of the population.

However, I have decided to survey the entire population, this in spite of the higher efforts and costs. The number of questionnaires mailed was 1,687. Several reasons underlay this decision:

- First, the size of the population (1,687) is sufficiently small to enable a full survey in terms of costs and effort.
- A second reason in favour of full survey is to enhance the chances for a meaningful analysis at club level, (Dibb et al. 1991). There are seventy clubs. Sampling would reduce the chances of having a sufficiently large response to infer valid club statistics. Although analysis at individual club level falls outside the scope of this thesis, the data gathered can be valuable for the KNAS its clubs.
- Finally, there was a risk that the period in which the mailing was sent, (at the start of the summer holidays), might have a negative impact on response levels.

6. SURVEY RESULTS

In this chapter the results of the survey are analysed. First, response to the mailing is compared with similar surveys. Response rates are analysed per sex and age class. Second, the method and scope of the analysis of the questionnaires are discussed. Third, a Pareto Analysis is performed on both the reasons indicated for taking up fencing and the reasons indicated for discontinuing. Following, the reasons for discontinuing membership are further analysed. The reasons are clustered using the elements of the services marketing mix. Finally, research questions and hypotheses are formulated, answered and tested.

Before any analysis of the results was undertaken a check was performed to verify the quality of the KNAS membership files (APPENDIX F).

6.1. Response to the survey

The choice of the survey method was in part based upon expectations of an adequate return rate (paragraph 5.1). Actual response surpassed the author's expectations (Table 6.1). All the 1,687 questionnaires were mailed between July 7, 1993, and July 13, 1993. At the time of writing questionnaires were still being returned intermittently. The overall response rate up to date was 35 percent. The response rate is defined as the percentage of usable questionnaires returned (590) divided by the number mailed (1,687). This result compares favourable to overall response percentages of similar surveys (Kramer & Dekker 1986): ex-tennis players 23 percent; ex-soccer players 30 percent; ex-basket-ball players 37 percent and ex-athletics 30 percent.

Table 6.1 Questionnaires returned

	Received
Returned to sender (address unknown)	49
Postal code missing	4
Questionnaire incomplete	28
Questionnaire inappropriate	8
Usable and entered	590
Total	679

Source: Based on data collected by the author

When counting the incomplete questionnaires as valid response and subtracting the questionnaires with "address unknown" from the amount mailed, this rate would be 38 percent. In view of the limited time available and given the already adequate response rate, the author decided not to engage in any follow-up actions to attempt to correct those questionnaires not fully completed.

To calculate response rates per sex and age class the statistics of the population are needed. Unfortunately only 1,515 of the KNAS and club records contained sex and age data (Table 6.2).

Table 6.2 Outflow statistics per sex and age of KNAS and club members

	Male	Female	Total
Age (0-12)	92	22	114
Age (13-17)	231	52	283
Age >17	771	347	1,118
Total	1,094	421	1,515

Source: Based on data collected by the author

However, it is fair to assume that the entire population mailed has similar statistics, given the sample size n = 1,515 out of the population size N = 1,687. The response rates per sex and age class (Table 6.3) were

computed using the data contained in Table 6.2 and subsequently corrected by multiplying the results with a correction factor:

$$F = \frac{n}{N}.$$

As with a survey held under ex-hand-ball players (Bassa & Naafs 1987), female response was significantly higher than male. The response rate for each sex and age class is sufficiently high to infer conclusions for the entire outflow population (Levin & Rubin 1991).

Table 6.3 Estimated response rates per sex and age category (Percentages)

	Male	Female
Age (0-12)	36%	69%
Age (13-17)	37%	55%
Age >17	31%	38%

Source: Based on data collected by the author

6.2. Method of analysis

This paragraph starts with a brief discussion on the use made of statistic techniques for hypothesis testing. Subsequently, alternative approaches to the analysis are evaluated, followed by an outline of the chosen procedure.

6.2.1. Hypothesis testing

Statistical techniques for hypothesis testing provide a powerful tool for the analysis of research data. These techniques can clarify whether observed differences between results are meaningful or due to chance. However, given the exploratory nature of the survey (sub-paragraph 5.3.1.) this type of quantitative analysis has a limitation when immediately applied.

In my opinion this limitation lies in the fact that these techniques give "true" or "false" type answers to questions. Correlation between two variables that is not explicitly sought is not found. The use of these techniques in itself does not guarantee that the right questions are asked or hypotheses formulated. Above observations may seem evident, but, they have implications for the analysis procedure.

Given the vast amount of data, the possibilities for analysis are staggering. The questionnaire (APPENDIX C) contains *ten questions* referring to attributes of the members, *four questions* referring to attributes of clubs and *two questions* referring to a combination of member and club attributes. Each of these attributes could be used to classify respondents. Some attributes, such as "age" or "weapon fenced", could be used to form more than two classes. Classes could be combined to form new classes, such as "females, aged between twelve and eighteen, fencing epee". Responses to the *fifty-eight statements* in the questionnaire can be compared for each class. Thus, not the availability of sufficient data, but rather *time* and *money* are limiting factors for the analysis.

Therefore, an analysis procedure must be developed that will ensure that a coherent, and relevant set of questions is asked and hypotheses formulated.

6.2.2. Analysis procedure

The purpose of the analysis procedure is to determine which data is relevant for stemming the outflow and thus merits further investigation, and which data need not be further analysed.

In research on the subject of outflow it is not unusual to start with a classification of respondents by sex and age (Bassa & Naafs 1987, NBB 1991). Following, causes are ranked per class and conclusions are

drawn. Monitoring outflow per sex and age class is useful were an association to strive for a particular build-up of its member demography. However, the immediate problem for the KNAS has solely to do with achieving volume in membership levels.

There are two ways to focus on volume. One is to determine which classes of respondents together make up the largest part of the outflow. Following, per class, the causes can be analysed. The second way is to determine which causes are most mentioned across classes and subsequently analysing the top-ranking causes.

The second method has the merit that it focuses on overall causes, instead of narrowing attention towards a particular group. However, should outflow in a particular sex and age class be disproportionate to the demographic build-up of the current KNAS population the second method would not be valid.

To check this the author compared the demography of the current KNAS-members with those of the ex-members. Of 1,937 of the current 1,982 members sex and age are known. Again this number is sufficiently large to infer conclusions for all 1,982 members. It turns out that the demography of the outflow is similar to that of the current members (Table 6.4). Percentages in the table pertain to total members and total annual outflow regardless of sex and age. Apparently the outflow takes place evenly across all sex and age classes.

Table 6.4 Comparison of sex and age current KNAS-members with ex-members

	Male members		Male outflow		Female members		Female outflow	
	Number	Per-cent-age	Number	Per-cent-age	Number	Per-cent-age	Number	Per-cent-age
Age (0-12)	221	11	31	6	37	2	7	1
Age (13-17)	255	13	77	15	65	3	17	3
Age >17	1,012	52	257	51	347	18	116	23
Total	1,488	77	365	72	449	23	140	28

Source: Based on data collected by the author

Chosen procedure

In view of the goal of the project and the fact that sex and age are not prime factors, the author decided to focus directly on the reasons for outflow that were most mentioned by the respondents. To determine the reasons most mentioned first a Pareto Analysis of the responses will be made .

Second, following the Pareto principle, the author will focus attention on those reasons that make up seventy percent of the cumulative reasons mentioned. The reasons will be analysed by linking them to attributes of the clubs and of the respondents. This will be done by formulating a limited number of research questions and hypotheses.

Third, the hypotheses will be tested and the results of the analysis are presented.

6.3. Pareto analysis of response

This paragraphs begins with an explanation of the Pareto Analysis. Second, the expectations towards fencing are analysed. Third, the reasons mentioned for the discontinuation of membership are analysed. The paragraph closes with a brief comparison of some results with those of other surveys.

6.3.1. Pareto Analysis procedure

Pareto, or A-B-C-Analysis is a method used to show which items in a set of data are of the highest relative importance (Fogarty & Hoffmann 1983, Lockyer, Muhlemann & Oakland 1988). The procedure used is explained by immediately relating it to the survey.

In the survey respondents were asked to what degree listed statements were a factor for taking up fencing or discontinuing fencing at their club (APPENDIX C). A statement is assumed to constitute a factor in the respondents decision when replied with "strongly agree" or "agree".

Multiple responses were allowed in both lists of statements.

First, the number of times a statement was mentioned as a factor in the respondents decision was counted. Second, the statements were ranked in descending order of times mentioned. Third, the cumulative times the statements were mentioned are computed. Finally, of each statement the cumulative times mentioned is expressed as the cumulative percentage mentioned.

6.3.2. Pareto Analysis of reasons for taking up fencing

The reasons for taking up fencing are an indication for the expectations an individual had towards the sport. Also, they paint a picture about the image fencing has in the minds of the respondents. Pareto analysis of the reasons to start fencing reveals that eight of the thirteen possible reasons listed on the questionnaire, together, account for over eighty percent of the sum of all reasons mentioned by the 590 respondents (Table 6.5). The results of the analysis are depicted in a so-called "Pareto curve" (Figure G.1, APPENDIX G).

Table 6.5 Pareto analysis of reasons for starting fencing

	Rank	Times mentioned	Cumulative percentage
It is a quick reaction sport	1	414	13.0
I want to (get) keep fit	2	381	25.0
I wanted to try something different	3	372	36.7
I wanted to have a good time	4	357	47.9
I prefer individual sports over team sports	5	345	58.8
A modern duel seemed exciting	6	260	66.9
It has an exclusive image	7	235	74.3
It identifies with my way of life	8	215	81.1

Source: Based on data collected by the author

The choice to focus attention on the eight top-ranking questions is based on the eighty percent criterion. This eighty percent criterion is chosen in order to cover as much volume of the outflow as possible within the time constraints.

A few comments concerning these top-ranking reasons can be made. Reasons number two and four can apply to any sport and are thus of no further interest. Reasons number three, six, seven and eight, all relate to an exclusive image of fencing. Apparently this is the major attraction of the sport. The speed and individual character all also highly rated but, opposed to the image, these attributes cannot be changed or enhanced by actions of the KNAS or its clubs.

However, based on the survey results the author concludes that so far the effects of direct promotion were limited. In answer of question 15 (APPENDIX C) only 10.8 percent of the respondents indicated that the

took up fencing as a result of direct promotional activities. Evidently, the majority of the inflow occurs naturally.

6.3.3. Pareto Analysis of reasons for discontinuing fencing

The reasons for discontinuing membership are the only direct rating of the service offered by the KNAS and its clubs. Thus these ratings form the hart of the survey. The numbers of reasons that will be analysed further are again determined based on the eighty percent criterion. Twenty-eight out of the fourty-five possible reasons together account for eighty percent of the cumulative reasons mentioned (Table 6.6).

The other results of the analysis are depicted in a Pareto curve (Figure G.2, APPENDIX G).

When comparing the results with other surveys there are a number of similarities in response. The studies with sport associations for Soccer, Tennis, Athletics and Basket-ball (Kramer & Dekker 1986) also found that "career or study obligations" is the top-ranking reason to discontinue the sport. This reason was again ranked first in one of the few general studies on sports participation (Prinssen & Kropman 1992).

Table 6.6 Pareto analysis of reasons for discontinuing fencing

	Rank	Times mentioned	Cumulative percentage
Career or study obligations	1	285	7.4
Days or times of training were inconvenient	2	216	13.1
There were not enough opponents of my level	3	183	17.8
Equipment was too expensive	4	160	22.0
Tournaments are too far away to travel	5	149	25.9
There were too few people of my own age	6	147	29.7
There were not enough opponents fencing my weapon	7	145	33.5
I disliked the way of training	8	136	37.0
I wanted to try another sport	9	113	40.0
There was a lack of individual attention during training sessions	10	113	42.9
Fencing was too expensive	11	111	45.8
The Club was too small	12	102	48.5
I moved to another town	13	101	51.1
I no longer enjoyed the sport	14	94	53.5
The club offered too few opportunities to train	15	89	55.9
It took me too long to travel to my club	16	88	58.2
Family obligations	17	85	60.4
I liked other sports better	18	84	62.6
I did not like the way the club was organised	19	83	64.7
I did not like the atmosphere at the club	20	82	66.9
The facilities at my club were inadequate	21	72	68.7
I was injured	22	64	70.4
The club offered too few activities other than fencing	23	62	72.0
Membership was too expensive for the number of training sessions	24	61	73.6
Training sessions were too short	25	60	75.2
Fencing takes too long to learn	26	59	76.7
Fencing lacks a regular system of competition	27	57	78.2
People always left immediately after fencing	28	57	79.7

Source: Based on data collected by the author

A second similarity with both the KNAS survey and the surveys for the other associations mentioned is that "too little opportunity to play" and "competition from other sports" are ranked among the top ten reasons. "Too little opportunity to play" is equivalent to the reasons ranking three and seven in table 6.6; "competition from other sports" is equivalent to "I liked other sports better". A third similarity between these surveys is the low ranking of "family obligations"..

6.4. Analysis of Pareto results

The Pareto analysis enabled to focus attention on the prime reasons for discontinuing fencing. In this paragraph the results will be further analysed to derive hypotheses and research questions. First, the exogenous factors will be separated. Only the endogenous factors will be further analysed. Following, the results of the Pareto analysis will be clustered.

6.4.1. Sorting out endogenous and exogenous factors

Before proceeding with the analysis it is useful to distinguish between those factors that, in principle, could be influenced by the KNAS or its clubs, and those factors that are exogenous (Table 6.7).

The reason ranked number seventeen, "I was injured", is not necessarily exogenous. The question is inconclusive to whether fencing was the cause of the injury. However, in a number cases comment was added by the respondents claiming fencing was not the cause of their injury. Furthermore, of the 317 respondents that were also engaged in other sports, 41 listed "injury" as a major factor. This amounts to 12.9 percent. Of the 273 respondents who were not engaged in other sports while fencing, only 23 listed injury. This amounts to 8.4 percent. Although this does not prove fencing was not the cause for the injury, it does prove that other factors, outside fencing come into play.

Table 6.7 Exogenous reasons for discontinuing membership

	Rank	Times mentioned	Total per cluster
Career or study obligations	1	285	
I moved to another town	13	101	
Family obligations	17	85	
I was injured	22	64	
			535

Source: Based on data collected by the author

Exogenous factors need not be further analysed because, by definition, they cannot result in executable recommendations.

One could argue that these exogenous factors can be totally ignored. I do not subscribe to this view. The number one ranking reason, "career or study obligations", seems totally exogenous. However, note that 33 percent of the respondents who listed this reason as a major factor in their decision, also indicated that they took up another sport after they stopped fencing. The same holds true for "family obligations". In this case 26 percent of the respondents did have time to take up another sport.

Thus, although exogenous factors in itself need not be further analysed, they do provide circumstantial evidence. In my opinion they increase the weight of the other factors.

6.4.2. Clustering of reasons

Having excluded the exogenous factors from further analysis those factors that are within the sphere of influence remain. To aid the process of formulation of research questions and hypotheses the reasons are clustered (Table 6.8) on the basis of elements of the Services Marketing Mix (chapter 4).

Some of the reasons in the *Product cluster* are, in itself, inconclusive. These are "I wanted to try another sport", "I no longer enjoyed the sport" and "I liked other sports better". In all but one case respondents who listed one of these three reasons also listed other reasons as major causes in their decision to discontinue membership. This opposed to reasons such as "injuries" or "career or study obligations" who were frequently listed as sole cause!

Table 6.8 Clusters of reasons for discontinuing membership

	Rank	Times mentioned	Total per cluster
Customer Producer:			
There were not enough opponents of my level	3	183	
There were too few people of my own age	6	147	
There were not enough opponents fencing my weapon	7	145	
The Club was too small	12	102	
			577
Place/ Availability:			
Days or times of training were inconvenient	2	216	
Tournaments are too far away to travel	5	149	
The club offered too few opportunities to train	15	89	
It took me too long to travel to my club	16	88	
			542
Product:			
I wanted to try another sport	9	113	
I no longer enjoyed the sport	14	94	
I liked other sports better	18	84	
The club offered too few activities other than fencing	23	62	
Fencing lacks a regular system of competition	27	57	
			410
Process:			
I disliked the way of training	8	136	
I did not like the way the club was organised	19	83	
Training sessions were too short	25	60	
Fencing takes too long to learn	26	59	
			338
Price:			
Equipment was too expensive	4	160	
Fencing was too expensive	11	111	
Membership was too expensive for the number of training sessions	24	61	
			332
People (personnel/ customer producer):			
There was a lack of individual attention during training sessions	10	113	
I did not like the atmosphere at the club	20	82	
People always left immediately after fencing	28	57	
			252
Physical evidence:			
The facilities at my club were inadequate	21	72	
			72

Source: Based on data collected by the author

6.5. Results

In this paragraph the attributes of the club and ex-members are used to attempt to explain the results of the Pareto analysis. This is done by formulating a limited number of research questions or hypotheses for each of the clusters of Table 6.8. Subsequently, the hypotheses and research questions will be tested and answered using various statistic techniques.

Each sub-paragraph covers one of the areas of the Services Marketing Mix. First, the hypothesis or question is refined to a level that facilitates testing. Second, the method of testing is briefly discussed. Finally, each sub-paragraph closes with a concise summary of the findings.

All calculations were performed by using the statistical functions available in Microsoft Excel version 4.0.

6.5.1. Customer producer

The importance of the customer producer as a provider of service was already stressed (chapter 4). The survey indicates that for many ex-members the lack of availability of suitable other members was a major reason for leaving. Given the amount of small clubs (Figure 2.2) this is probably linked to the club size. This conclusion may seem obvious, however, note that clubs could also be specialised. A club with only foil fencers will get an excellent rating from a foilist, however, a sabre fencer will probably rate the availability of other partners as poor. With the largest club having 120 members, it could well be that all clubs are too small:

Hypothesis:

1. *Insufficient availability of other suitable customer producers is caused by the small size of the clubs.*

"Insufficient availability" can pertain any of the four reasons listed under Customer producer in Table 6.8. There are two different approaches towards proving the hypothesis. The first is to show that there is a sufficiently strong positive correlation between the scores on the question "The club was too small" and each of the questions concerning the availability of other customer producers:

1a. Show that there is a positive correlation between the scores on "The club was too small" and "There were not enough opponents of my level".

1b. Show that there is a positive correlation between the scores on "The club was too small" and "There were too few people of my own age".

1c. Show that there is a positive correlation between the scores on "The club was too small" and "There were not enough opponents fencing my weapon".

The second approach is to classify the respondents by club size and test for significant differences:

1d. Show that small clubs have significantly lower scores than large clubs on "There were not enough opponents of my level".

1e. Show that small clubs have significantly lower scores than large clubs on "There were not enough opponents of my level".

1f. Show that small clubs have significantly lower scores than large clubs on "There were too few people of my own age".

1g. Show that small clubs have significantly lower scores than large clubs on "The club was too small".

To prove statements 1a, 1b and 1c the use of *scatter diagrams* is infeasable. Use was made of the *coefficient of correlation* (APPENDIX H).

The author finds the strength of the correlation for the statements 1a, 1b, and 1c (Table 6.9) insufficiently strong (APPENDIX H) to prove the hypothesis (1). This could be caused by the fact that, when using this method, the relationship between club size and the number of suitable customer producers can only be shown if this relationship is perceived by the respondent themselves.

Table 6.9 Correlation between the perception of club size and availability of customer producers

	Sample size n =	Coefficient of correlation
There were not enough opponents of my level	590	0.44
There were too few people of my own age	590	0.51
There were not enough opponents fencing my weapon	590	0.44

Source: Based on data collected by the author

The second way to prove the main hypothesis is to show that 1d, 1e, 1f and 1g are true.

First, "small clubs" and "large clubs" must be defined. Only the 1993 club membership levels can be calculated from the KNAS-membership files (APPENDIX F). The 1993 membership level of each club was added to those respondent records of which the club was known. Clubs no longer existing due to lack of members were entered as having zero members. The respondent records were classified using three club sizes: (small: 0 - 33 members), (medium: 34 - 66 members) and (large: > 66 members).

To show that significant differences exist an Analysis of variance-test (APPENDIX I) was performed on all four statements (Table 6.10).

Table 6.10 Anova of differences in availability of customer producers between groups

	Group	n =	x	Variance	F-ratio	F-crit	P-value
There were not enough	(0-33)	358	3.402	2.017	0.002	3.012	0.998
opponents of my level	(34-66)	142	3.408	1.818			
	(>66)	51	3.412	2.367			
There were too few	(0-33)	358	3.534	1.895	3.783	3.012	0.023
people of my own age	(34-66)	142	3.704	1.600			
	(>66)	51	4.059	1.456			
There were not enough	(0-33)	358	3.595	2.018	2.103	3.012	0.123
opponents fencing my weapon	(34-66)	142	3.824	1.635			
	(>66)	51	3.902	1.930			
The Club was too small	(0-33)	358	3.607	1.670	15.142	3.012	0.000
	(34-66)	142	4.106	1.088			
	(>66)	51	4.392	1.083			

Significant = P-value < 0.05 (1 = "strongly agree" - 5 = "strongly disagree")

Source: Based on data collected by the author

Conclusions

Lack of availability of suitable customer producers is in itself equivalent to club size. The question whether all current clubs suffer equally can only partially be proven. The Anova-test results indicate that significant differences exist for two of the four hypotheses concerning availability: "There were too few people of my own age" and "The Club was too small".

The reason "There were not enough opponents of my level" is equally rated by all three groups. Because the matter of "level" is a subjective judgement on part of the respondent, it is not surprising that respondents from all three groups of clubs rate the same.

The fact that "There were not enough opponents fencing my weapon" is rated equally is more surprising. However, an explanation could lie in the fact that, relative to clubs of other individual sports such as tennis, even "large" fencing clubs are small. Large fencing clubs are opened more days a week as opposed to small clubs that open one day a week. This means that on three weapons attendance can be spread over more days, having the same effect as a small club.

6.5.2. Place/ availability

Concerning the place and availability of the service large clubs offer better service, due to economies of scale in areas such as money available for rent they have more frequent opening hours. The question is whether customers give a better rating of this availability:

Hypothesis:

1. *Clubs who are opened more than one time a week have a significantly better rating on availability than those opened once a week.*

To prove hypothesis (1) two statements need to be proven:

1a. *There is a significant difference in the rating of clubs opened one time a week and those opened more frequently, on "Days or times of training were inconvenient".*

1b. *There is a significant difference in the rating of clubs opened one time a week and those opened more frequently, on "The club offered too few opportunities to train".*

Comparison of samples from two groups will be performed using the *t-Test* (APPENDIX J).

There was no significant difference between those clubs opened once a week and those opened more frequently on "the convenience of days or times of training". However, clubs opened more than once were significantly better rated on "opportunities to train" (Table 6.11).

The samples do not add up to the total number of usable questionnaires received because not all were fully completed. Asking clubs for their opening days/times was inadvisable for two reasons: first, during the survey set-up the co-operation from clubs proved to be poor (paragraph 5.4.2.); second, clubs might have restrictions for certain classes.

Table 6.11 t-test of differences in rating of service availability between two groups

	Group	n =	$\bar{x}$	Variance	P-value
Days or times of training were inconvenient	(1 time)	279	3.348	1.600	0.309
	(> 1 times)	304	3.286	0.947	
The club offered too few opportunities to train	(1 time)	279	3.602	1.600	0.000
	(> 1 times)	304	4.181	0.947	
Significant = P-value < 0.05			(1 = "strongly agree" - 5 = "strongly disagree")		

Source: Based on data collected by the author

The results on convenience of training at first puzzled the author. Perhaps, the difference in scores only occurs with more frequent opening times? To check this, first, an Anova-test was performed. This showed significant differences existed. Following, because no Duncan-test was available in the software package, several t-tests were performed. It was found the difference only becomes significant with clubs opened

more than three times a week (Table 6.12). Only the medium and large clubs are opened more frequently than one time a week (Helwes 1993).

Table 6.12 t-test of differences in rating of convenience of availability between two groups

	Group	n =	$\bar{x}$	Variance	P-value
Days or times of training were inconvenient	(1-3 times)	521	3.26	2.1962	0.004
	(> 3 times)	62	3.79	2.1356	
Significant = P-value < 0.05			(1 = "strongly agree" - 5 = "strongly disagree")		

Source: Based on data collected by the author

Another aspect of relevance is the travelling time to the club. This is important for assessing the feasibility of recommendations that could overcome the handicap of club size, such as merger of clubs or shared memberships. Such recommendations are likely to increase travel time of some members. This raises following question:

Question:

1. *What travel time to clubs is still acceptable for the respondents?*

To determine this, respondents were classified into two classes: those who indicated "It took me too long to travel to my club" as a reason for leaving (scores 1 or 2), and those scoring 3, 4 or 5. For both classes of respondents a frequency distribution was made of the answers to question five of the questionnaire: "How much time was needed to travel to your club?". Following, for each class of travelling time (minutes), the number of respondents marking travelling time as a reason for leaving was expressed as a percentage of total respondents in that time class (Table 6.13).

Table 6.13 Travelling time as reason for leaving (percentage)

	no reason	reason	total	percentage
T=(0-20):	399	23	422	5.5
T=(20-40):	87	40	127	31.5
T=(40-60):	8	19	27	70.4
T > 1 hr:	1	6	7	85.7

Source: based on data collected by the author

It follows that a travelling time up to 40 minutes is still acceptable for 68.5 percent of the respondents.

Conclusions

With respect to the convenience of opening days and hours this only becomes significant with clubs opened over three times a week. This gives the larger clubs an advantage over the smaller. However, this is likely to disperse the available customer producers (paragraph 6.5.2.)

6.5.3. Product

Two of the reasons headed under "product" are conclusive. Both "The club offered too few activities other than fencing", and "Fencing lacks a regular system of competition" give a precise indication of the wishes of the respondents. The other three reasons mentioned are inconclusive (paragraph 6.4.2.). These do raise the question after which period respondents turn away from the sport:

Question:

1. *Is there a specific time after which people get "bored" with the sport?*

To answer this question a frequency distribution was made based on the membership lengths stated by all the respondents (Figure 6.1). Fifty percent of the outflow occurs after only three years of membership. The average length of membership is 4.65 years, with a standard deviation of 5.49 years.

Conclusions

There are a number of uncertainties in answering question (1). First, there is no sufficient guarantee that the sample is representative for the population. With respect to age and sex it was possible to check the response with the mailing database. We saw that response differed significantly per class (Table 6.3). However, data on membership duration contained in the database is unreliable, thus checks are unreliable. Second, the proportion of questionnaires mailed to the "less than six months-class" was small (paragraph 5.4.2.).

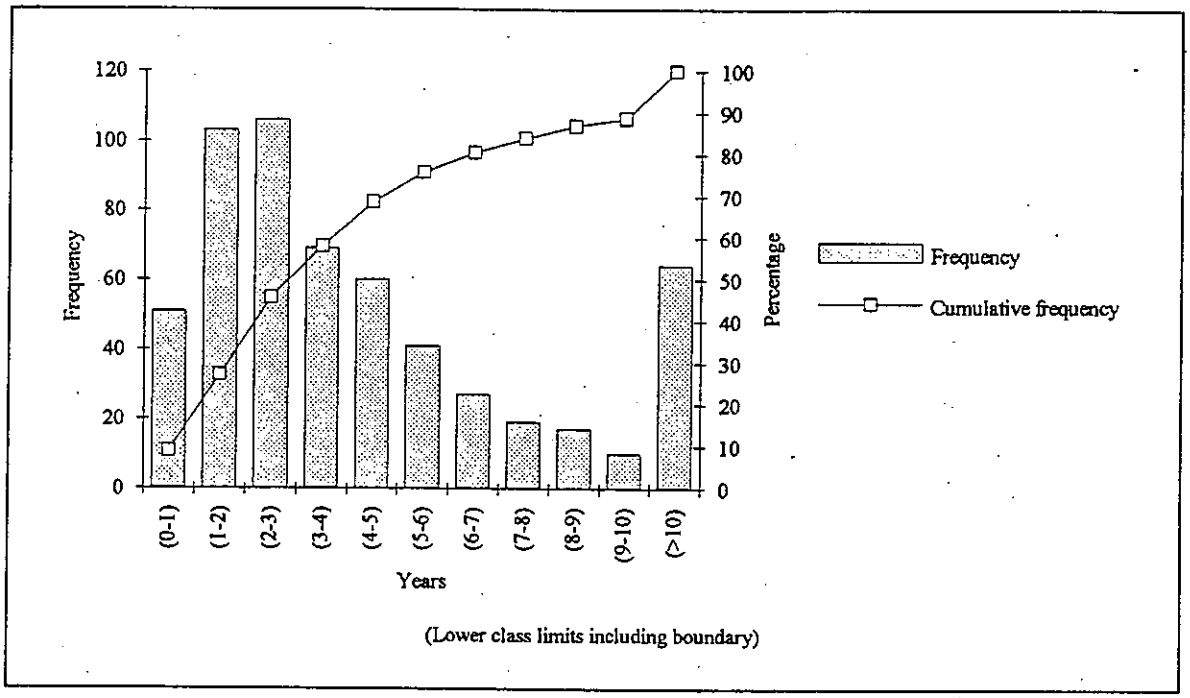

Figure 6.1 Frequency distribution of respondent's length of membership
Source: Based on data collected by the author

Hence, question (1) can only be answered based on an assumption. Assuming that response rates increase with membership duration and given the few questionnaires mailed to the "less than six months-class", more than 50 percent of outflow occurs in the first three years of membership.

6.5.4. Process

The reasons listed in this cluster pertain to the way of training. The questions in itself are of a too general nature to facilitate further analysis. This does not diminish the value of the respondents' rating, but, use of this signal should be made at club level. There are useful analysis tools available to help clubs implement the marketing concept (S.S.N.B. 1993). However, it is of interest to know which group has most problems with learning to fence:

Question:

1. *Is there a specific time after which people "give up" learning the sport?*

To answer question (1) respondents were classified into two classes: those who indicated "Fencing takes too long to learn" as a reason for leaving (scores 1 or 2), and those scoring 3, 4 or 5. For the first class a relative frequency distribution per class of duration of membership was constructed (Figure 6.2).

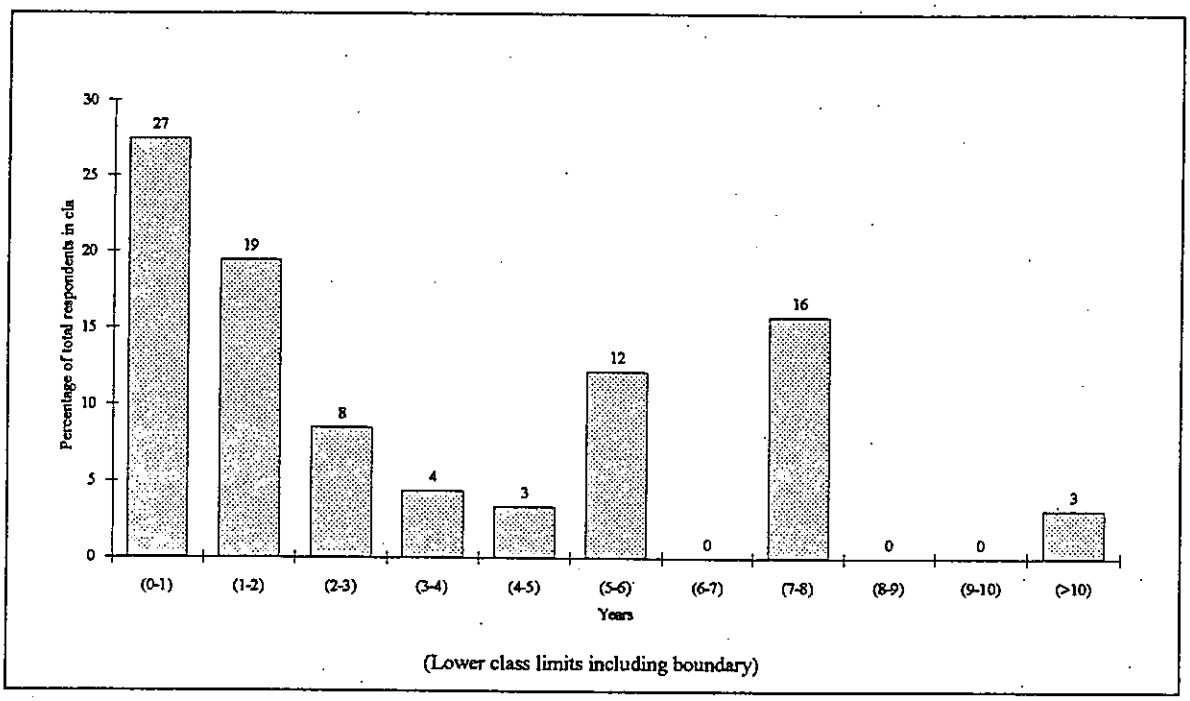

Figure 6.2 Relative frequency of "Fencing takes too long to learn" classified by membership duration
Source: Based on data collected by the author

From the distribution it follows that further investigation of respondents that have fenced (0-2) years and those having fenced over two years is warranted. To test for significant differences a t-test was performed (Table 6.14) indicating that indeed a significant difference exists.

Table 6.14 t-Test of differences in rating of "Fencing takes too long to learn" between two groups

	Group	n =	$\bar{x}$	Variance	P-value
Fencing takes too long to learn	(0-2 years member)	235	3.766	1.565	0.000
	(>2 years member)	350	4.357	0.786	
Significant = P-value < 0.05				(1 = "strongly agree" - 5 = "strongly disagree")	

Source: Based on data collected by the author

Conclusions

The first two years of membership a major effort is needed to teach the sport. This is hardly surprising given its technical nature. However, it does prove clubs have problems with the reception of new members.

6.5.5. Price

Price in relation to service offered might again be linked to economies of scale. The author suspects that large clubs will get a better rating than small clubs.

Hypothesis:

1. *Large clubs offer more value for money with respect to training sessions than small clubs.*

To test this hypothesis the scores on "Membership was too expensive for the number of training sessions offered" of large clubs (> 66 members) were compared with those of other clubs (Table 6.15). No significant difference existed. Thus the hypothesis is rejected.

Table 6.15 t-Test of scores on membership cost versus training sessions between two groups

	Group	n =	$\bar{x}$	Variance	P-value
Membership was too expensive for	(>66 members)	51	3.686	1.860	0.066
the number of training sessions	(<67 members)	498	3.988	1.143	
Significant = P-value < 0.05				(1 = "strongly agree" - 5 = "strongly disagree")	

Source: Based on data collected by the author

Within the KNAS it is believed that the price of equipment, approximately £ 350, constitutes a barrier to continue with the sport, especially for newcomers. In the beginning equipment is borrowed from the clubs at no charge. After an unknown period, varying per club, equipment must be bought.

Question:

1. *Does the price of equipment constitute a barrier to continue with the sport after a certain period of time?*

To answer this question, first, a relative frequency distribution was made of those respondents who had indicated "Equipment was too expensive" as a reason for leaving, classified by membership duration (Figure 6.3). From the distribution the author concluded that no classes of interest emerged.

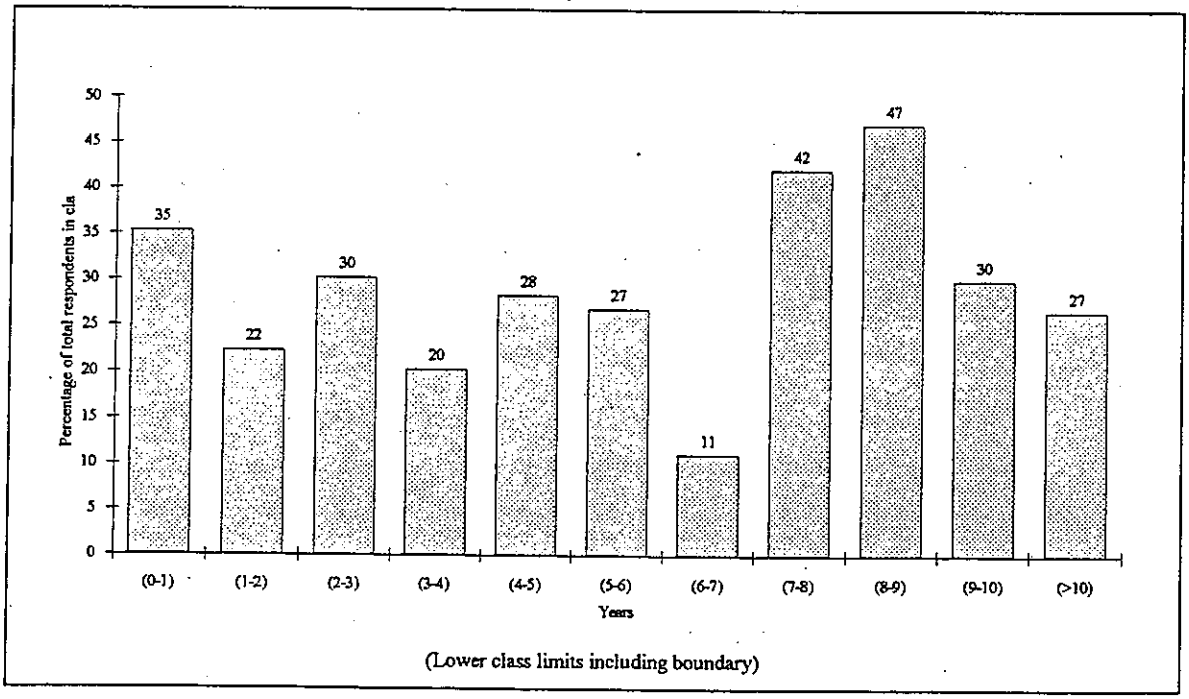

Figure 6.3 Relative frequency of "Equipment was too expensive" classified by membership duration
Source: Based on data collected by the author

To investigate the KNAS' assumption, two tests were performed: an Anova-test (Table 6.16) on the scores of three groups, classified on the basis of membership duration (0-1 years, 1-2 years and 2-3 years); and a

t-test (Table 6.17) between two groups (0-3 years and > 3 years). Both tests showed no significant differences. Thus it follows that the price of equipment is not a barrier to continue after a certain period of time.

Table 6.16 Anova-test of scores on cost of equipment between three groups

	Group	n =	$\bar{x}$	Variance	F-ratio	F-crit	P-value
Equipment was too expensive	(0-1 years)	131	3.504	1.960	1.571	3.025	0.210
	(1-2 years)	103	3.379	1.708			
	(2-3 years)	76	3.737	1.663			

Significant = P-value < 0.05 (1 = "strongly agree" - 5 = "strongly disagree")

Source: Based on data collected by the author

Table 6.17 t-Test of scores on cost of equipment between two groups

	Group	n =	$\bar{x}$	Variance	P-value
Equipment was too expensive	(0-3 years member)	310	3.519	1.810	0.248
	(>3 years member)	249	3.442	1.780	

Significant = P-value < 0.05 (1 = "strongly agree" - 5 = "strongly disagree")

Source: Based on data collected by the author

Conclusions

That there is no difference in the rating of large and smaller clubs with respect to membership fees cannot be explained by the data available: the author has no information membership fees per club.

The price of equipment is in part exogenous. The fact that price is no barrier to continue after a certain period has an advantage: clubs need not invest heavily to make equipment available to newcomers. However, this does not rule out the possibility of equipment rental, suggested by respondents, common in some sports.

6.5.6. People: personnel & customer producer

Part of the problems is related to a small club size. However, larger clubs need not be a "panacea" for all the problems. An increase in club size might exacerbate some of the problems mentioned by respondents. Those who object to larger clubs claim that "social aspects" suffer.

Questions:

1. *Is there a significant difference in personnel attention between large clubs and smaller clubs?*
2. *Is there a significant difference in the "social atmosphere" between large clubs and smaller clubs?*
3. *Is there a significant difference in the "social behaviour" between large clubs and smaller clubs?*

To answer these questions the respondents were classified using two club sizes: small and medium sized: (0 - 66 members) and large: (> 66 members). Three t-tests were performed (Table 6.18, Table 6.19 and Table 6.20).

Table 6.18 t-Test of scores on "lack of attention" between two groups from different club sizes

	Group	n =	$\bar{x}$	Variance	P-value
There was a lack of individual	(>66 members)	51	3.353	1.833	0.006
attention during training sessions	(<67 members)	500	3.860	1.547	
Significant = P-value < 0.05				(1 = "strongly agree" - 5 = "strongly disagree")	

Source: Based on data collected by the author

Table 6.19 t-Test of scores on "social atmosphere" between two groups (club size)

	Group	n =	$\bar{x}$	Variance	P-value
I did not like the atmosphere	(>66 members)	51	3.804	1.521	0.224
at the club	(<67 members)	498	3.942	1.415	
Significant = P-value < 0.05				(1 = "strongly agree" - 5 = "strongly disagree")	

Source: Based on data collected by the author

Table 6.20 t-Test of scores on "social behaviour" between two groups (club size)

	Group	n =	$\bar{x}$	Variance	P-value
People always left immediately	(>66 members)	51	3.863	1.401	0.117
after fencing	(<67 members)	498	4.070	1.136	
Significant = P-value < 0.05				(1 = "strongly agree" - 5 = "strongly disagree")	

Source: Based on data collected by the author

From the tests it is concluded that respondents indicate that large clubs indeed seem to give less personal attention than small club. Concerning questions (2) and (3) there was no significant difference between large clubs and smaller clubs.

Notes made by respondents on the questionnaires gave cause to suspect that especially newcomers suffer from lack of individual attention:

Hypothesis:

1. *Lack of attention is a significant factor felt by new members (0-3 years of membership).*

To test this hypothesis a t-test was performed on two groups of respondents, classified by membership duration (Table 6.21). No significant differences were found and thus the hypothesis is rejected.

Table 6.21 t-Test of scores on "lack of attention" between two groups (membership duration)

	Group	n =	$\bar{x}$	Variance	P-value
There was a lack of individual	(0-3 years member)	311	3.849	1.484	0.325
attention during training sessions	(>3 years member)	250	3.800	1.687	
Significant = P-value < 0.05				(1 = "strongly agree" - 5 = "strongly disagree")	

Source: Based on data collected by the author

Another indicator that there is room for improving overall personal attention is the response to question 12 (APPENDIX C). After notice had been given, only 31 percent of the respondents indicated that their club had made inquiries into the reasons. This might not seem bad performance compared to others, such as the Hand-ball Association's 15 percent, however, remember that the fencing clubs are very small.

Conclusions

Large clubs offer less individual attention than small clubs. This might be caused by the fact that only one large club employs more than one professional trainer. Thus, with more members personal attention is

likely to suffer. Lack of attention felt is irrespective of membership duration. No differences in the social aspects of club life were found between large and smaller clubs. In fact, some might even improve by better "social facilities (subparagraph 6.5.7.).

6.5.7. Physical evidence

The question "Facilities were inadequate" is of a general nature. There is reason to assume that respondents mean "fencing facilities". Respondents from clubs having a "dedicated fencing hall" have a significantly better rating of facilities than those lacking such facilities (Table 6.22).

Table 6.22 t-Test of scores on "facilities" between two groups (presence of dedicated facilities)

	Group	n =	$\bar{x}$	Variance	P-value
The facilities at my club were inadequate	(dedicated facilities)	170	4.318	0.999	0.000
	(non dedicated facilities)	415	3.790	1.335	
Significant = P-value < 0.05				(1 = "strongly agree" - 5 = "strongly disagree")	

Source: Based on data collected by the author

As mentioned in subparagraph 6.5.6. it is of interest to see whether the presence of facilities influences the social aspects of club life.

Question:

1. *Do clubs possessing "social facilities", a bar, have a better rating of the social aspects of club life than* clubs that lack such facilities.

To answer this questions respondents were classified by the presence or absence of a bar or canteen. Following their scores on "People always left immediately after fencing" and "I did not like the atmosphere at the club" were compared using a t-test (Table 6.23 and Table 6.24).

Table 6.23 t-Test of scores on "social behaviour" between two groups (facilities)

	Group	n =	$\bar{x}$	Variance	P-value
People always left immediately after fencing	(bar/cantine)	230	4.187	0.904	0.005
	(no bar/cantine)	353	3.963	1.286	
Significant = P-value < 0.05				(1 = "strongly agree" - 5 = "strongly disagree")	

Source: Based on data collected by the author

Table 6.24 t-Test of scores on "social atmosphere" between two groups (facilities)

	Group	n =	$\bar{x}$	Variance	P-value
I did not like the atmosphere at the club	(bar/cantine)	230	3.983	1.336	0.471
	(no bar/cantine)	353	3.975	2.479	
Significant = P-value < 0.05				(1 = "strongly agree" - 5 = "strongly disagree")	

Source: Based on data collected by the author

It can be concluded from the test that the presence of a bar or canteen does invite members to stay after training. However, no significant difference was found in the rating of the atmosphere.

Conclusions

A dedicated fencing hall significantly improves the ratings of facilities. It is also likely to tie in well with the exclusive image of fencing, stated as an important reason for the attraction to the sport (Table 6.5). Social facilities enhance the time the customer is present.

7. CONCLUSIONS & RECOMMENDATIONS

The objective of this thesis was to determine and analyse the main reasons for the outflow of KNAS-members and to offer recommendations on how to stem the exodus.

In this chapter the conclusions from the analysis presented in chapter 6 are summarised. Based on these conclusions and the actors in control of the different elements of the services marketing mix (Figure 4.2) recommendations are formulated.

Because the Clubs are in control of most of the elements of the mix and they have the most frequent customer contact, first the recommendations to clubs are presented. Second, the recommendations to the KNAS, both at national and at regional level, are given.

This thesis closes with suggestions on how to raise more funds necessary to finance the recommendations made.

7.1. Conclusions

The fact that only 10.8 percent of the respondents indicated that they took up fencing as a direct result of the KNAS' promotional activities adds weight to the premise mentioned in the introduction, that possibly money is better spent on curbing the outflow than on promotion. Of course, this does not diminish the value of publicity which is free of cost. Ninety percent of the annual inflow, approximately 400 people, occurs "natural".

The survey results indicate that people are attracted to fencing because it is perceived as an individual sport with an exclusive image. The KNAS marketing plan indicates that "the image of exclusiveness of participants in fencing should be removed as soon as possible". Based on the perceived image the author would judge such a course as unwise. Trying to strip fencing of its exclusive image means removing one its major attractions.

Contrary to widespread belief within the KNAS, the outflow occurs irrespective of sex and age. Another, less surprising fact is that the majority of the outflow occurs after two to three years of membership. Based on the premise that such decisions are not taken over-night, the author concludes that the first and second year of membership is the crucial period to retain the member.

The main reason why clubs remain relatively small is because they are small! The lack of suitable opponents constitutes the major cluster of reasons for giving notice. The absence of a regular competition and the long travelling time to tournaments also relate to the need having more choice in adversaries.

The relationship between club size and performance could not be established for all reasons. Lack of attention is felt to a lesser extent with small clubs than with large clubs. However, the fear for large impersonal clubs is unjust. Large clubs do not have significantly different ratings on the social aspects than small clubs. Probably this is due to the fact that "large" is a relative indication of size: one hundred members is not much compared to clubs in other sports.

One of the attractions of individual sports is the lack of obligations to be present at pre-set dates and times (Vanreusel 1992). The poor performance of smaller clubs on "opportunity to train" ignores this trend. All clubs offer insufficient flexibility in dates and times of training. The author does not argue that the solution lies in simply increasing opening days. The individual clubs are just too small. Increased flexibility in opening days and times is at odds with the availability of suitable opponents. Too much flexibility in opening times would "dilute" the available club members and thus exacerbate the felt lack of "customer producers". The problem requires careful matching of the needs per sex, age and weapon category, with the available resources. The author doubts whether this problem can be solved by small and medium sized clubs. I would argue that the way towards a solution lies in co-operation between clubs.

The ratings given by respondents on the process, such as organisation of the club and the way of training, indicate that adjustments are necessary. However reasons are of a too general nature to formulate policy. This matter should be researched at individual club level.

Finally, some of the problems indicated by the respondents can only partially be influenced by the clubs or the KNAS. These include "the high cost of equipment" and the "travelling time to the club".

7.2. Recommendations to Clubs

Based on the conclusions the author offers the following recommendations to individual clubs:

- *Overcome the restrictions of small club size by merger or co-operation with other clubs.* Co-operation can take many forms, the most extreme being club merger. One form, shared membership, is covered separately. Opportunities for co-operation are plentiful: joint purchasing, sharing of facilities, exchange programs.

- *Offer shared membership.* Shared membership with several clubs in a region has major advantages. It increases flexibility in opening times for members without the negative effect of dilution. Also, through pooling of members, availability of suitable opponents, fencing the same weapon, of similar age and capability, is increased. An increase in travelling time need not be a barrier, provided the average time does not exceed *forty* minutes (subparagraph 6.5.2).This will not be possible in every region due to the existing distances between clubs. In any case careful planning of costs and benefits will be needed.

- *Rental of fencing equipment.* Currently, to the author's knowledge, no rental of equipment is possible at clubs. Clubs do offer some equipment for the first few months of membership, but the quality and safety of material are poor. Rental of equipment for a longer period of time has several advantages. Quality of material offered is increased. The investment for new members in the first two years is negligible. This advantage is of special value for youth. For clubs it means that, as opposed to offering material free for a short period, it can be done at a neutral cost level. Should clubs co-operate, purchasing advantages can be made.

- *Bench marking through measurement of customer response.* With few notable examples no effort is made by clubs to monitor the requirements of their members and the club ability to satisfy those requirements. There are excellent aids available to implement this recommendation (Hildebrand 1987, S.S.N.B. 1993). Repeated measurement of performance offers opportunities to constantly improve the service offer and gives the member a sense of being "cared for". Measuring customer requirements pertains to several areas indicated as problems by respondents, such as, "lack of attention", "system of training", "convenience of opening times" and "organisation of the club".

- *Uphold an exclusive image of fencing.* Exclusive is not equivalent to expensive. Expectations indicated by respondents point towards an exclusive image of fencing (paragraph 6.3). The whole physical evidence of the service environment should be tuned to this expectation. This means that dedicated facilities, even when shared with other sport, such as ballet, are to be preferred over cheaper general sports halls.

The author recognises that implementing some of these recommendations, especially co-operation with other clubs, requires a major change of attitude on behalf of club committees and club trainers. However, it should be remembered that the consequences of inertia, discussed earlier (chapter 3), are even less pleasant. Services other than club lessons and training will decrease by lack of funding.

7.3. Recommendations to the KNAS

As can be read from figure 4.2 the KNAS has little direct control over those elements of the services mix where the majority of the problems occur. However, two contributions can be made:

- *Set up regional competitions.* Complaints uttered by respondents are lack of suitable opponents and the travelling time required to participate in tournaments. These competitions should augment, not replace, the tournaments organised by clubs. These tournaments are best catered to the need of the recreational fencers: they make up the larger part of the outflow.

- *Assist clubs in building a service organisation.* The bench marking referred to in paragraph 7.2 is unlikely to take root if left to individual clubs. Acquiring expertise for setting up marketing programs for individual clubs is best centralised. Currently such a program is executed with outside aid at one single club. This means knowledge will leave the organisation.

It is further recommended that membership registration software is improved. Current software is a major step forward from the previous card files. However, the registration is insufficient for marketing purposes. Data registered in such a system at start of membership should enable measurement of response to promotional activities, publicity and introduction programs.

7.4. Raising funds

To increase the service offered by the KNAS current funds are insufficient. To organise one tournament approximately £ 750 is needed. Thus an increase in discretionary funds (paragraph 3.2) is essential. So far, attempts to attract funds from sponsors have proved futile. The only available sources of discretionary funds are the structural subsidies from the Department of Health and Culture (W.V.C.) and membership fees. Increasing the membership fee is inadvisable: The cost of fencing is one of the prime reasons mentioned for discontinuing membership. The way forward is to both increase the number of registered fencers and to increase the period of registration.

To increase the registration as KNAS-members of people already fencing four measures are proposed:

- *Offer membership to students at the minimum rate required by W.V.C.*(paragraph 3.2). The number of students fencing at universities is estimated to be near 200 people. Estimates are based on the number of participants in tournaments for students.

- *Offer membership to the military at the minimum rate required.* Estimates of the number of military personnel currently not KNAS-member amount to 150 people.

- *Change the current rules for registration of club members as KNAS-members.* It is recommended that membership is compulsory after only three months of club membership. Offer the KNAS-membership at the minimum rate for the first year only.

- *Induce clubs to increase registration of their members with the KNAS.* Offer special KNAS-membership to club members no longer fencing at reduced rates.

To increase the registration period it recommended to change the system of membership administration. W.V.C. subsidy grants are based on the membership level per December 31 of each year. Currently, even though a member has paid for a whole year, the member is stricken from the KNAS-records immediately after notice has been given (paragraph 5.4). By effectuating the notice on January 1, the KNAS-membership level per December 31 will increase with an amount equal to the annual outflow! This change will not increase fees received, however, it will increase the structural subsidy. The increase in structural subsidy will, approximately, be equal to the ratio of the outflow to the 1992 membership level multiplied by 1992 subsidy (paragraph 3.2), all other things remaining equal.

Note that above recommendations are intended to immediately raise the funds necessary to increase the service offered to members. The measures are not presented as a solution to increase the number of KNAS-members. For the fiscal year 1994 further cuts in subsidies are expected (Keij 1993): the rules of the "subsidy game" may change rapidly.

The only sure way to survive is to achieve natural growth. Natural growth stems from meeting expectations from current and future members.

APPENDIX A/1

THE KNAS IN PERSPECTIVE: ADMINISTRATIVE SUPPORT

Table A.1 Administrative Support of Sports Associations, 1992

	Number of members	Full-timers	Part-timers	Volunteers
KNVB (Soccer)	999,599	200		
KNLTB (Tennis)	721,954	30	2	
KNGB (Gymnastics)	272,269	30		
KNZB (Swimming)	164,330	22	19	
NSV (Skiing)	161,405	27	8	
NVB (Volleyball)	158,314	21	2	
KNSB (Skating)	144,807	11		
KNHB (Field Hockey)	126,964	14	8	
KNWV (Watersport)	94,153	19	9	
NBB (Badminton)	88,619	16	6	
NBB (Bridge)	88,320	10	5	
KNKV (Korfball)	83,441	17	2	
KNAU (Track and field)	73,641	19	4	
SNHS (Steeple chase)	70,889	15	2	
NHV (Handball)	67,864	19	9	
JBN (Judo)	56,354	10		
NGF (Golf)	54,886	5	5	
NBB (Basketball)	44,665	9	2	
NTB (Table tennis)	43,586	7	2	
KNBB (Billiards)	35,162	5	5	
KNSA (Shooters)	31,075	6	2	
NTFU (Recreational cycling)	30,034	4	1	
KNBSB (Baseball/Softball)	29,618	7	2	
KNSB (Chess)	28,801	3	3	
NWB (Walking)	26,944		2	
NBV (Mountain sport)	24,763	4	1	
NBF (Bowling)	23,819	4	2	
KNMV (Motorcycling)	21,495	20		
KNRB (Rowing)	20,566	1	3	
KNWU (Cycling)	19,578	10	4	
NSRB (Squash)	17,100	5	2	
KDBN (Karate Do)	15,342	1		
KNKB (Fives)	14,391	1	1	
NOB (Diving)	14,369	4		
KNVL (Airsport)	14,143	30		
NDF (Darts)	12,000		2	
NJBB (Jeu de Boules)	11,162	1	2	
KNKB (Kegelen)	10,010			x
NKB (Canoeing)	9,584	1	1	
KND (Checkers)	9,414	2		
NDK (Ladies Korfball)	9,410	3	1	
NWB (Water-skiing)	9,250	2	1	

x = No data on number of volunteers available

Source: Pruin, 1993.

APPENDIX A/2

THE KNAS IN PERSPECTIVE: ADMINISTRATIVE SUPPORT

Table A.1 (Continued) Administrative Support of Sports Associations, 1992

	Number of members	Full-timers	Part-timers	Volunteers
NTB (Triathlon)	9,079	4	2	
NHB (Archery, long-bow)	7,226	3	2	
NRB (Rugby)	6,323	4		
KNCB (Cricket)	5,907	1	1	
NIJB (Icehockey)	3,806	2	2	
VKK (Klootschieten)	3,485			x
ANS (Shovel boards)	3,132			x
KNAB (Autosport)	3,082	2	1	
NBB (Boxing)	2,150	1	1	
KNAS (Fencing)	1,951		1	
FOG (Fighting sports)	1,920			x
NKB (Archery, cross-bow)	1,765			x
FNMB (Midget Golf)	1,081			x
KNKB (Body Building)	985		1	
NGB (Go)	967			x
NRB (Roller Skating)	916			x
SMV (Pentathalon)	786			x
NAFB (American Football)	675			x
KNKB (Kolf)	632			x
NCF (Casting)	181			x
NCB (Curling)	125			x
BSN (Bob-sledding)	56			x

x = No data on number of volunteers available

Source: Pruin, 1993.

APPENDIX B

FUNDING: THE STRUCTURAL SUBSIDY SYSTEM

The structural subsidy granted to an association in 1993 consists of two components (d'Ancona 1991, Kramer 1993, Keij 1993):

> Structural subsidy = 50 % of the historical structural subsidy (A) + 50 % of the calculated structural subsidy (B)

In 1994 and onwards, different percentages will be used:

> Structural subsidy = 25 % of the historical structural subsidy (A) + 75 % of the calculated structural subsidy (B)

(A) The historical structural subsidy:

The historical structural subsidy is the subsidy that was granted in a previous year. Determination of the year used for the historical structural subsidy is at discretion of the Department of W.V.C. Up till now the policy has been to use the subsidy granted in 1990. Starting 1995, the historical part of the subsidy will be based on the subsidy granted two years earlier. The historical structural subsidy is incorporated to prevent major disturbances in funding, should membership levels rise or fall sharply.

(B) The calculated structural subsidy:

This part of the subsidy is calculated using following formula:

$$\frac{TS}{SSB} \times 100\% \times ISB$$

TS = Total Departmental Budget for Structural Subsidies, (e.g., 16,649,362 NLG in 1993)

ISB = Individual Subsidy Base. This is the base amount of subsidy for an association. This amount is dependent on the number of members of an association.

SSB = Sum of Subsidy Bases. This is the sum of the individual subsidy bases of all associations.

The individual subsidy base is derived by multiplying the number of members of an association with the subsidy per member. The day of counting the amount of members is December 31. The amount per member is not fixed but varies per range, (e.g. 1 - 2,500 members, 2,501 - 25,000 members). This makes it impossible to estimate the subsidy for a following year. Even if the Departmental budget remains unchanged it is infeasible to calculate the sum of subsidy bases: not only are the future membership levels of the other associations unknown, but also the membership range in which their decrease or increase in members would fall.

It should be noted that, starting January 1995, only associations with membership levels of 2,500 and more will be eligible for this subsidy.

Within the subsidy regulations "members" are defined as individuals who pay a minimum yearly fee of 10 NLG (adults) or 5 NLG (youth) to an association. The KNAS charges approximately four times the minimum amount.

APPENDIX C/2

QUESTIONNAIRE: MOTIVATION OF EX-FENCERS

1. Year of birth: .. ..
2. Sex: ☐ (m) ☐ (f)
3. Postal code/Town: .. .. /.....
4. Club name: .....
5. How much time was needed to travel to your club? ☐ (20-40) ☐ (40-60) ☐ ☐ over one hour
6. How long were you a member of your club? .....
7. Which weapon did you fence? ☐ Foil ☐ Epee ☐ Sabre
8. Did you enjoy Fencing? ☐ Yes ☐ No
   Why?: .....
   .....
9. Did you participate in any tournaments? ☐ Yes ☐ No
   If yes, how many times a year? ☐ ☐ ☐ (6-10) over ten times a year
10. At that time, did you participate in any other sports? If yes, please list them: ☐ Yes ☐ No
    .....
    .....
11. How many hours a week do you spend on sports? .....
12. After you gave notice, did your club try to persuade you to stay? ☐ Yes ☐ No
    If yes, how? ☐ Personal interview
    ☐ Other, namely:
    .....
    .....
13. Please indicate which facilities were available at your club:
    ☐ Dedicated fencing hall
    ☐ General sports hall
    ☐ Showers & dressing rooms
    ☐ Bar or canteen
14. How many days a week was your club opened? ☐ day ☐ 2 days ☐ 3 days ☐ over three days a week

APPENDIX C/1

QUESTIONNAIRE: MOTIVATION OF EX-FENCERS

Zoeterwoude-Rijndijk, July 7, 1993

Dear ex-Fencer,

We regret your decision to stop fencing (at your club). Within the Fencing Association many different opinions are held on the reasons for your leaving, e.g., some think that fencing has become too expensive, while others believe that you quit due to lack of time.

All these opinions have one thing in common: they are based on guesses. Only one person knows the true reason: You!

To be better prepared to cater to the needs of future fencers I am investigating, on behalf of the KNAS, into the reasons why you quit fencing. This research is financed from private sources of capital.

I urgently request you to help us by completing the questionnaire and to return it, using the enclosed, (postage paid), envelope.

The questionnaire was designed to take as little of your time as possible. Most questions can be answered by simply crossing the response of your choice.

I thank you for your co-operation in this matter.

Should you have any questions I can be reached in the evenings as listed below.

With kind regards,

Robert A. den Hartog
Beukenlaan 2
2382 ER ZOETERWOUDE-RIJNDIJK

Phone: 071-419107

APPENDIX C/3

QUESTIONNAIRE: MOTIVATION OF EX-FENCERS

15. How did you become actively interested in fencing? Through:
- ☐ Sport news in the media
- ☐ Demonstrations
- ☐ School or university
- ☐ The military
- ☐ Friends
- ☐ Other, namely:

.....
.....

16. Did you participate in any other sports after you stopped Fencing? ☐ Yes ☐ No
If yes, please list them:
.....
.....

Following statements contain possible reasons to TAKE UP fencing. Please mark to what extent you agree or disagree with a statement.

17. I took up fencing because:	Strongly agree	Agree	Indifferent	Disagree	Strongly Disagree.
Joining a club gives me an opportunity to meet other people	☐	☐	☐	☐	☐
Because my friend(s) joined	☐	☐	☐	☐	☐
I prefer individual sports over team sports	☐	☐	☐	☐	☐
It identifies with my way of life	☐	☐	☐	☐	☐
I wanted to have a good time	☐	☐	☐	☐	☐
It is a non-contact combat sport that leads to few injuries	☐	☐	☐	☐	☐
It is a quick reaction sport	☐	☐	☐	☐	☐
Fencing in white suits has a classical image	☐	☐	☐	☐	☐
I want to (get) keep fit	☐	☐	☐	☐	☐
It is an indoor sport	☐	☐	☐	☐	☐
It has an exclusive image	☐	☐	☐	☐	☐
I wanted to try something different	☐	☐	☐	☐	☐
A modern duel seemed exciting	☐	☐	☐	☐	☐

APPENDIX C/4

QUESTIONNAIRE: MOTIVATION OF EX-FENCERS

Following statements contain possible reasons to STOP fencing. Please mark to what extent you agree or disagree with a statement.

18. I gave up my membership because:	**Strongly agree**	**Agree**	**Indifferent**	**Disagree**	**Strongly Disagree**
I no longer enjoyed the sport	☐	☐	☐	☐	☐
I was injured	☐	☐	☐	☐	☐
Fencing takes too long to learn	☐	☐	☐	☐	☐
I liked other sports better	☐	☐	☐	☐	☐
I disliked the way of training	☐	☐	☐	☐	☐
There was a lack of individual attention during training sessions	☐	☐	☐	☐	☐
There was a lack of collective (class) training	☐	☐	☐	☐	☐
I disliked the coach	☐	☐	☐	☐	☐
Lack of attention by other (more experienced) fencers towards the less experienced	☐	☐	☐	☐	☐
Coaches displayed too much favouritism when giving lessons	☐	☐	☐	☐	☐
There were not enough opponents fencing my weapon	☐	☐	☐	☐	☐
There were not enough opponents of my level	☐	☐	☐	☐	☐
I did not like the way the club was organised	☐	☐	☐	☐	☐
During training one spent too much time waiting	☐	☐	☐	☐	☐
Training sessions were too short	☐	☐	☐	☐	☐
Fencing lacks a regular system of competition	☐	☐	☐	☐	☐
There were too few tournaments for my weapon	☐	☐	☐	☐	☐
There were too few tournaments at my level of expertise	☐	☐	☐	☐	☐
Tournaments are too far away to travel	☐	☐	☐	☐	☐

APPENDIX C/5

QUESTIONNAIRE: MOTIVATION OF EX-FENCERS

18. (CONTINUED) I gave up my membership because:	Strongly agree	Agree	Indifferent	Disagree	Strongly Disagree
I disliked the knock-out system at tournaments	☐	☐	☐	☐	☐
The facilities at my club were inadequate	☐	☐	☐	☐	☐
There was no opportunity to socialise after training sessions	☐	☐	☐	☐	☐
There were too few pistes	☐	☐	☐	☐	☐
It took me too long to travel to my club	☐	☐	☐	☐	☐
I moved to another town	☐	☐	☐	☐	☐
Days or times of training were inconvenient	☐	☐	☐	☐	☐
The club offered too few opportunities to train	☐	☐	☐	☐	☐
I did not like the atmosphere at the club	☐	☐	☐	☐	☐
There was no opportunity to talk with people after training sessions	☐	☐	☐	☐	☐
There were too few people of my own age	☐	☐	☐	☐	☐
My friends stopped	☐	☐	☐	☐	☐
I did not like the people I met	☐	☐	☐	☐	☐
People always left immediately after fencing	☐	☐	☐	☐	☐
The club offered too few activities other than fencing	☐	☐	☐	☐	☐
I wanted to try another sport	☐	☐	☐	☐	☐
Family obligations	☐	☐	☐	☐	☐
Career or study obligations	☐	☐	☐	☐	☐
The Club was too small	☐	☐	☐	☐	☐
There was too much emphasis on achievement	☐	☐	☐	☐	☐
There was too little emphasis on achievement	☐	☐	☐	☐	☐
Fencing was too expensive	☐	☐	☐	☐	☐

APPENDIX C/6

QUESTIONNAIRE: MOTIVATION OF EX-FENCERS

18. (CONTINUED) I gave up my membership because:	Strongly agree	Agree	Indifferent	Disagree	Strongly Disagree
Membership fees were too expensive	☐	☐	☐	☐	☐
Equipment was too expensive	☐	☐	☐	☐	☐
Participating in tournaments was too expensive	☐	☐	☐	☐	☐
Membership was too expensive for the number of training sessions offered	☐	☐	☐	☐	☐

In order to persuade you to take up fencing again, what things should change in your opinion?

.....
.....
.....
.....
.....
.....

APPENDIX D

SPORTS PARTICIPATION OF EX-FENCERS

Table D.1 Sports participated in by ex-fencers during and after their KNAS or club membership

	Times mentioned
Fitness	85
Tennis	70
Running	59
Swimming	53
Horse-riding	43
Squash	31
Cycling	30
Badminton	23
Hockey	22
Fighting sports	20
Volleyball	18
Soccer	18
Sailing	17
Skiing	16
Athletics	15
Ballet	14
Rowing	12
Karate	11
Canoeing	10
Dancing	10
Shooting	10
Baskett-ball	9
Judo	9
Pentathalon	9
Skating	8
Body-building	8
Triathlon	7
Surfing	7
Diving	6
Mountain sport	6
Golf	6
Jiu-jitsu	6
Water-polo	5
Yoga	5
Gymnastics	5
Walking	4
Korfball	4
Others	37
Total	728

Source: Based on data collected by the author

Note that comparing running and swimming with membership data of sports associations is useless because these sports are often engaged in outside official clubs. The questionnaire did not ask respondents to indicate whether these sports were pursued at clubs.

APPENDIX E

LETTER: REQUEST FOR CO-OPERATION OF CLUBS

Utrecht, June 21, 1993

Dear committee,

In partial fulfilment of the requirements for the degree of Master of Business Administration I am currently engaged in a research project into the reasons for the member turnover at KNAS. The project is conducted with full approval of the KNAS administration.

Studies of the Dutch Sports Federation (N.S.F.) indicate that the number of participants in organised, individual sports has risen substantially since 1980. However, membership of KNAS has remained more or less at the same level during that period. In other words: We were unable to benefit from the growth in market potential.

In order to be able to change this situation first two questions need to be answered:

Why do people take up Fencing?
Why do people stop Fencing?

The Dutch Handball Association conducted a similar type of research. Also for Fencing Clubs it is of interest to know the answers to these questions. In Fall 1993, the results of my research will be made public in an anonymous format.

Of special interest to the research are those people who "tasted" fencing for only a few months and then left. This group of ex-fencers does not show in any of the KNAS membership records. Therefore, I request you to supply me with names, addresses, and telephone numbers, of people who have fenced at your club for a period of less then six months.

I urge you to react at the shortest possible notice by sending your reply to the address given below. By answering this letter you also indicate you are interested in the results of the research. Should you have any questions I can be reached as listed.

Thank you for your co-operation.

With kind regards,

Robert den Hartog
Beukenlaan 2
2382 ER ZOETERWOUDE-RIJNDIJK

Phone: 071-417109

APPENDIX F

CHECK PERFORMED ON THE KNAS MEMBERSHIP FILES

The membership records from the KNAS were received in four database files:

- One file containing the records of people registered as ex-members in 1990.
- One file containing the records of people registered as ex-members in 1991.
- One file containing the records of people registered as ex-members in 1992 and 1993.
- One file containing both the records of people registered as members in 1993 and the records of people registered as ex-members in 1992 and 1993.

The determine the exact size of the outflow the four files were merged. Over 3,600 records were compared. The author decided checking the files was necessary following five messages received from people claiming still to be KNAS-members. The KNAS-membership Administration had estimated that after 1991 administration had been correct (chapter 5). The people who had contacted the author claimed not to have changed club in 1990 or 1991. This shed doubt on the estimate made by the KNAS-membership Administration.

Three bases are available to compare the records: postal code, name and date of birth. The author decided to use date of birth as criteria for comparing records. Using the postal code was contemplated but discarded because people can move. Moving is a probable reason two switch clubs. Name was also discarded as a comparison criteria because female members can change their name following marriage.

It was found that the original 1,644 KNAS-records contained:

- 9 double entries.
- 29 records of persons who were either still a member or had switched club and then left.

Total outflow of registered KNAS-members thus amounts to 1,606 people. One could argue that the 16 foreign subscriptions lost are not "real club members " lost. However, since they were counted as members in the official statistics of the Department of Health and Culture the also constitute official outflow.

APPENDIX G/1

RESULTS PARETO ANALYSES

The results of the Pareto analyses performed on the reasons for taking up fencing and the reasons for discontinuing fencing are depicted in so-called "Pareto curves" (Figure G.1 and Figure G.2). The curves are read as follows: e.g. in figure G.1 reasons S7, S9, S12 and S5, together account for nearly fifty percent of the cumulative reasons mentioned.

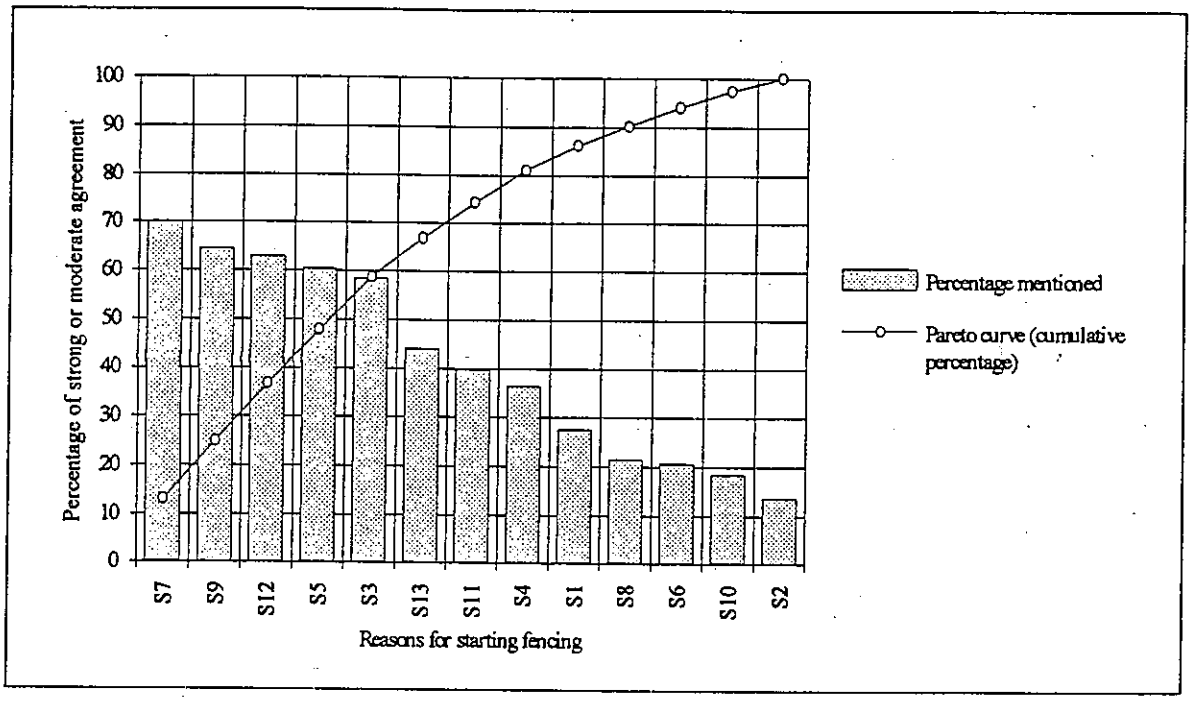

Figure G.1 Pareto analysis of reasons to take up fencing
Source: Based on data collected by the author

S1: Joining a club gives me an opportunity to meet other people
S2: Because my friend(s) joined
S3: I prefer individual sports over team sports
S4: It identifies with my way of life
S5: I wanted to have a good time
S6: It is a non-contact combat sport that leads to few injuries
S7: It is a quick reaction sport
S8: Fencing in white suits has a classical image
S9: I want to (get) keep fit
S10: It is an indoor sport
S11: It has an exclusive image
S12: I wanted to try something different
S13: A modern duel seemed exciting

APPENDIX G/2

RESULTS PARETO ANALYSES

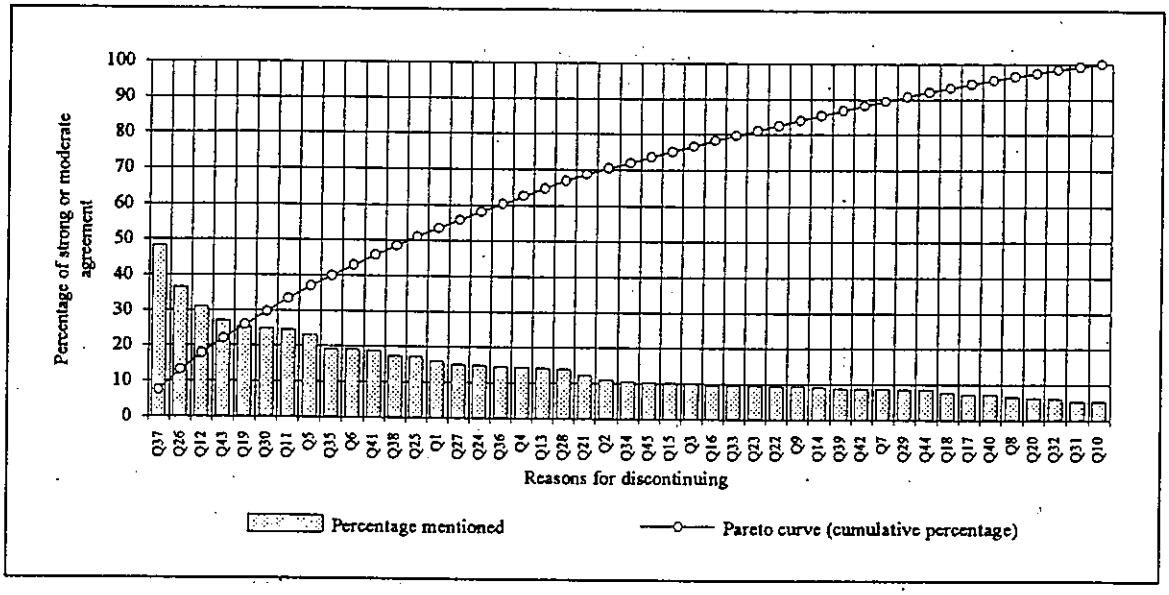

Figure G.2 Pareto analysis of reasons to discontinue membership

Source: Based on data collected by the author

Q1: I no longer enjoyed the sport
Q2: I was injured
Q3: Fencing takes too long to learn
Q4: I liked other sports better
Q5: I disliked the way of training
Q6: There was a lack of individual attention during training sessions
Q7: There was a lack of collective (class) training
Q8: I disliked the coach
Q9: Lack of attention by other (more experienced) fencers towards the less experienced
Q10: Coaches displayed too much favouritism when giving lessons
Q11: There were not enough opponents fencing my weapon
Q12: There were not enough opponents of my level
Q13: I did not like the way the club was organised
Q14: During training one spent too much time waiting
Q15: Training sessions were too short
Q16: Fencing lacks a regular system of competition
Q17: There were too few tournaments for my weapon
Q18: There were too few tournaments at my level of expertise
Q19: Tournaments are too far away to travel
Q20: I disliked the knock-out system at tournaments
Q21: The facilities at my club were inadequate
Q22: There was no opportunity to socialise after training sessions
Q23: There were too few pistes
Q24: It took me too long to travel to my club
Q25: I moved to another town
Q26: Days or times of training were inconvenient
Q27: The club offered too few opportunities to train
Q28: I did not like the atmosphere at the club
Q29: There was no opportunity to talk with people after training sessions
Q30: There were too few people of my own age
Q31: My friends stopped
Q32: I did not like the people I met

APPENDIX G/3

RESULTS PARETO ANALYSES

Q33: People always left immediately after fencing
Q34: The club offered too few activities other than fencing
Q35: I wanted to try another sport
Q36: Family obligations
Q37: Career or study obligations
Q38: The Club was too small
Q39: There was too much emphasis on achievement
Q40: There was too little emphasis on achievement
Q41: Fencing was too expensive
Q42: Membership fees were too expensive
Q43: Equipment was too expensive
Q44: Participating in tournaments was too expensive
Q45: Membership was too expensive for the number of training sessions offered

APPENDIX H

TECHNIQUES FOR CORRELATION

The first step usually applied to show correlation between two variables is the plotting of *scatter diagrams* (Mendenhall & Reinmuth 1986, Levin & Rubin 1991). With the questionnaire used this is infeasable due to the non-continuity of the response scales (APPENDIX C) The five choices of the respondents are coded as values ranging from "1" = "strongly agree" to "5" = "strongly disagree". Plotting two non-contineous variables as *x-values* and *y-values* renders only twenty-five possible points on the diagram. With near to six-hundred respondents soon all the points on the diagram would be occupied, thus rendering such a diagram useless.

The author decided to use another method to show correlation. This involves calculating the *coefficient of correlation:*

$$\rho_{x,y} = \frac{Cov(X,Y)}{\sigma_x \cdot \sigma_y} \quad \text{with } -1 \le \rho_{x,y} \le 1$$

$$\text{and } Cov(X,Y) = \frac{1}{n}\sum_{i=1}^{n}(x_i - \mu_x)(y_i - \mu_y)$$

A positive value of $\rho_{x,y}$ indicates that if variable x increases, variable y increases, a negative value indicates a reverse relationship.

The *coefficient of correlation* is an indication for the strength of a *linear* relationship between to variables.

When using this measure it must be remembered that high values of ρ are necessary to prove a significant relationship. A value for $\rho_{x,y}$ of .5 implies that when using variable x to predict variable y reduces the sum of squares of deviations in the line predicting y as function from x with $\rho_{x,y}^{2}$ = .25 (25 percent). To prove a strong correlation $\rho_{x,y}$ must exceed .9.

APPENDIX I

ANALYSIS OF VARIANCE

Application:
Analysis of variance (Anova) tests the hypothesis that the means from several samples are equal. This technique expands on the tests for two means, such as the *t*-test. An Anova-test can tell whether the samples come from different populations or not. It can not tell which of the samples are different when more than two samples are used (Mendenhall & Reinmuth 1986, Levin & Rubin 1991).

Assumptions:
To use the technique we must assume that each of the populations that the samples are drawn from have equal variance. In our case we are testing opinions of people. As such, there is no reason to believe that the assumption is incorrect. However, cultural differences could exist, but these fall outside the scope of this thesis. A second assumption is that the populations are normally distributed when using small sample sizes. However, with the sample sizes concerned we can ignore this assumption.

Procedure:
The technique consists of three steps:

1. Estimating the population variance from the variance *between the sample means.*
2. Estimating the population variance from the variance *within the sample means.*
3. Comparing the two estimates. If they are *approximately equal*, the hypothesis is accepted. Equality is tested using the *F-test* for comparing variance.

Reading the tables:
The tables presenting Anova-test results are read as follows:

n = *the sample size of each group*

$\bar{x}$ = *the sample mean*

variance = *the average of the squared distances of the observations from the sample mean*

F_{ratio} = *the calculated F-statistic from the sample groups*

P-value = *the level of significance: chance that the observed differences between the sample means occurs if the population means are the same.*

F_{crit} = *the tabulated F-statistic*

A "significant difference" is defined as a *P-value* < 0.05. This indicates that the chance that the observed differences between the sample means have a five percent chance of occurring and therefore the samples are not from the same population. The smaller the *P-value*, the more significant the difference!

APPENDIX J/1

t-TEST FOR COMPARING SAMPLE MEANS

Application:
This technique is used to test the hypothesis that the means from two samples are equal or that the one is larger than the other (Mendenhall & Reinmuth 1986, Levin & Rubin 1991).

Procedure:
The tests consists of three steps:
1. Choosing the test statistics.

2. Determining whether a two-tailed test or a one-tailed test should be performed.

3. Executing the test and reporting the findings.

Choosing the test statistic:
To determine which the test statistics following decision rules were applied:
- If the variance of the population is known always the z-test is used.

- If the variance is unknown the t-test is used.

Although the z-test is preferred with sample sizes > 50, the fact that the variances are unknown and often different supersedes this consideration.

Deciding on a two-tailed test or a one-tailed test:
A two-tailed test is used to infer from the samples that the two population means are either equal or not equal. A one-tail test is used to infer from the samples that one population mean is smaller or larger than the other. The tests performed are all one-tailed tests.

Reading the tables:
The tables presenting t-test results are read as follows:
n = *the sample size of each group*

$\bar{x}$ = *the sample mean*

variance = *the average of the squared distances of the observations from the sample mean*

P-value = *the level of significance: chance that the observed differences between the sample means occurs assuming .*

For purposes of simplicity, presentation and discussion of acceptance regions are omitted. Results are presented only using the "one-tailed P-value". A "significant difference" is defined as a *P-value* < 0.05. This indicates that the chance that the observed differences between the sample means have less than five percent chance of occurring and therefore one population mean is smaller or larger than the other. again, the smaller the *P-value*, the more significant the difference!

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