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A Comparative Financial Analysis of Cross-Country Skiing and Ice Hockey

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Abstract

Today's people are likely to be engaged in physical activities. Depending on what kind of physical activity they are involved in, the contributed financial expenses are different. This work examines, if there were any significant financial differences between two very popular winter sports in Finland; cross-country skiing and ice hockey.

A questionnaire was designed to find out how much, and for what reasons sports enthusiasts should pay for sport. Each particular available expense-segment had its specific list of questions.

From the results it is verified that there is a significant financial difference between the two sport disciplines examined. The total related expenses of cross-country skiing are close to double those arising through participation in ice hockey.

When examining the details it is found that in cross-country skiing equipment expenses and their servicing represent the greatest financial cost for an athlete, therefore correlating expenses are strongly dependent on the level of participation and the frequency of practise. Together with higher level participation, expenses may increase as much as eight times. In contrast, in ice hockey fixed obligated costs are higher at present, with the result that being involved in ice hockey, requires a large investment at any level of participation. The difference of total expenses, however, between different levels of participation is not as large as in cross-country skiing.

Keywords:

Comparative study, Economics, Finance, Expenditure, Cost reduction. Winter sport, Cross-country skiing, Ice hockey

Contents

Abstract	2
1. Introduction.....	6
2. Hypothesis.....	7
3. Purpose of the Research	8
4. Objectives of the Research.....	9
5. Definition of Concepts.....	9
6. Limitations of the Research	10
6.1. Quantitative Limitations	10
6.2. Qualitative Limitations	10
7. Development of the Meaning of “Sport”: a Short History	11
7.1. The Importance of Recreation in Everyday Life.....	14
8. Construction of the Sport Industry	15
9. Economics of Sport.....	20
9.1. Determinants of Demand and Supply.....	21
9.1.1. Demand	21
9.1.2. Supply.....	22
9.2. A Pure Economical Based Model	23
9.3. Cost – Benefit Analysis.....	24
9.4. Investment and Its Return	25
9.5. A Society Based Model	27
9.6. Social Filter Model of Rodgers	28

9.7.	Complex Cost Analysis.....	30
9.8.	The Economic Value of Sport.....	32
9.9.	The Importance of Voluntary Work in Sport.....	35
9.10.	Definition of Professional and Amateur Sport	36
9.11.	Economical Differences Between Recreational and Top Sport	37
10.	Differences in the Sport Environment.....	39
11.	Research Methods and Procedures.....	41
12.	Results	43
12.1.	Results on General Data	43
12.2.	Expenses on Membership, License and Other Similar Fees	46
12.3.	Travel Costs.....	48
12.4.	Costs Connected to Tournaments and Competitions.	49
12.5.	Training camps	50
12.6.	Equipment, Clothes and Accessories	52
12.7.	Other Expenses	54
12.8.	Changes in Expenses During the Past Years.....	55
12.9.	Opinions About Expenses	56
12.10.	Results on the Total Expenses	57
13.	Discussion.....	60
13.1.	Introduction.....	60
13.2.	Differences in Financial Structures of Cross-Country Skiing and of Ice Hockey	61
13.3.	Determination and Comparison of Contributing Elements of the Total Expenses	61
13.3.1.	Comparison of the Direct Costs of the Two Sports.....	61

13.3.2. Comparison of the Indirect Costs of the Two Sports.....	63
13.4. Expenses Risen in Different Levels of Participation.....	64
13.5. Comparison of Different Age Groups.....	65
13.6. Ideas to Restrain Rising Costs.....	66
14. Conclusions	68
References	72
List of Tables	75
List of Figures	77
Appendices	78

1. Introduction

With the development of the industrialised and capitalist world man has left behind nature and natural living circumstances. To compensate for the lack of physical exertion a part of society started to practise sport and recreational activities. Through this, a new kind of expense appeared in one's household expenditures, which has become significant in the last few decades. Because of this, examining the economical perspectives of sport has become more important during the past few years. Identifying the elements that make up the expense and finding out where sportsmen can be helped, thus making sport and recreation more accessible to those who want to be engaged in developing themselves both physically and mentally.

With the development of the sport industry several features became came into existence, which are unique to the sport business, when compared to any other industrial sectors, which are modelled in different ways by many other researchers. Sport (or recreation) is considered to be a superior good and a personal need at the same time. This double sided feature means that the economy of sport is not similar to any other micro economical field.

In this work financial differences will be examined between cross-country skiing and ice hockey, as these sports are very popular and widely practised winter sports in Finland. Notwithstanding the general opinion in Finland, the researcher presumes that cross-country skiing is the more expensive sport compared to ice hockey. This is because the two sports are different by nature, namely that ice hockey is a team sport where administrative staff work in order to provide a team with the best available prospects, when competing with other teams. In cross-country skiing, as an individual sport, there is no such service for the athletes.

Beside the general comparison of the total financial costs in the two sports the rising expenses will be examined according to in different levels of participation. During the research contributing elements of total expenses will be revealed

and compared in the two sports discipline. The research will also cover a general and a detailed comparison of expenses. In fulfilling the objectives of the research, this paper will also discuss some possible solutions to restrain the increase of expenses connected to sports activities.

2. Hypothesis

The research will find a significant financial difference between cross-country skiing and ice hockey due to the differing structure of the whole financial system found between them. In Finland people generally view that ice hockey is more expensive than cross-country skiing. Despite this, I have the hypothesis that cross-country skiing is more expensive sport compared to ice hockey. The hypothesis is based on personal experiences and pre-disquisition in international sport life. The main difference rises from the team and individual type of the two sports.

In ice hockey - as in team sports in general - club management takes care of the welfare of the club, even in lower level (2nd, 3rd league) participation. Due to this, expenses connected to sport activity are partly covered by the clubs budget. This money - as later will shown – comes from different sources depending on the level of participation. The club's participation in covering expenses verified by the features inherent to the team, which require central management. Examples of this are financial contracts or travelling to tournaments, and games. This feature naturally exists, as the TEAM as a whole has privilege, and individual interests are at a second level. To return to the individual offerings team management have to provide allowances to team members, though, naturally not in equal terms for all.

In cross-country skiing there is no such common interest, which would force club management for similar services as in ice hockey. Moreover, it is seldom

that a large group of competitors go to the same competition at the same time from the same club. Also, different age groups, and competitors of different levels have different schedules in the racing calendar, and need different quality of equipment, and service. These features result that there is no such great awareness of club management for an individual athlete.

3. Purpose of the Research

The purpose of this study is first to examine the components that make up the total expenses in cross-country skiing and ice hockey and prove, whether a significant financial difference between these two sports exists. The researcher will verify these differences by comparing the relating financial components. The research concentrates mainly on the differences in expenses in general, but also examines the diversity among different levels of participation and different age groups. This thesis work examines the topic from the sports enthusiasts' point of view. In other words I will examine the expenses, which should be covered by the athlete.

On the basis of the above, the main question of this work will be:

“What contributes to the significant expenditure differences between cross-country skiing and ice hockey?”

In addition to this, I will determine, which particular aspects of the economy of cross-country skiing and ice hockey differ and what contributes to these differences.

4. Objectives of the Research

The objectives can be defined as follows:

1. To find out, if there is any significant financial difference between cross-country skiing and ice hockey.
2. To identify what contributes to the total expense in these sports.
3. To determine the components, which make up the total expenses in the two sports.
4. To identify how these components relate to each other.
5. To examine, how expenses could be lowered.

5. Definition of Concepts

This research was concentrating on cross-country skiing and ice hockey. The received questionnaires were grouped according to the level of participation and the age of the interviewee. Four level of participation was determined. Free-time level athletes were those, who pursuing sport for recreational purpose, without aiming better performance. Local level athletes were those, who are beginners with competitive aims or active sportsmen, who are taking part in competition but pursue sport without serious competitive goals. Regional level athletes, those considered, who practised sport regularly with the aim of better performance and proving their development on competitions, tournaments, but are not top class athletes. Top level athletes, who are playing in the first league in ice hockey, or pursuing serious competitive skiing career, are grouped in the national or above level. Age groups were set up according to the applied steps in both sports. These groups cover the major distinctive age groups in sport in general from the youngest to the "old boys" age. The age groups were as 6-10

years, 11-14 years, 15-18 years, 19-34 years and above 35 years old. Data analysis was executed and the results were analysed on the basis of these groups. Sociological aspects were not examined, and individual financial state was not taken into consideration in this research. It stayed unknown whether the total expenses in sport were representing smaller or greater share in the individuals separate household expenditure. Answer for this question can be found in the research "Mitä liikunta maksaa?".

6. Limitations of the Research

6.1. Quantitative Limitations

Data used for this research was restricted to two sports disciplines, ice hockey and cross-country skiing. The reason for this limitation was, to keep data at a manageable size.

Despite the large amount of questionnaires distributed, the return was rather low and uneven. From cross-country skiing particularly returned a low number of answers.

6.2. Qualitative Limitations

A Part of the returned questionnaires were incomplete. This produced problems in undertaking the analysis. Moreover, in some cases missing values and "0" answers influenced, in different ways, the statistical outcome.

In answering some of the questions, certain individuals provided the total sum only, even though the questionnaire requested a more detailed answer to be given. Therefore, it is hard to identify the reasons for the appearance of certain expense components. Data collection for this work was terminated on the 1st of June 2001.

7. Development of the Meaning of “Sport”: a Short History

Sport - One of the most used words in today's world. It can mean drama, excitement, amusement, anxiety and resolve, victory and fall. These all fit with the deeper meaning of the term “sport”. What does this short word really mean?

Since the beginning of human civilisation, sport has existed. Through all periods of human history the term “sport” has carried a lot of different meanings. These meanings changed, developed via the interests of the actual powers of the given territory and, of course with the advancement of our world. Sport has been a tool, since prehistoric times, to train ourselves to survive. At the very beginning, of course, physical education was not called sport. It was a preparation for “trying to escape from a predator” or “trying to catch prey”. In those times it was the privilege of juveniles to pursue “sport” for self-interest. In daily practice they tried to get acquainted with the skills they needed for adult life.

The Ancient Greek civilisation (ca 1100 BC – 200 BC) gave emphasis to the wealthy mind in wealthy body theory. At this time sport was developed to be regulated by rules and was pursued under the control of impartial judges in special designed sport places, the “Stadia”. The ancient Olympics games took place in every fourth year since 776 BC.

During the times of the Roman Empire (450 BC – 476 AD) sport changed its meaning, and it became entertainment with professional, trained participants, who lived or died for it. Other “disciplines” were for slaves who had to fight until the death of the opponent. The “Circus” was developed during this era and sport was not called sport anymore. The ancient Olympic games were held regularly in the last two centuries under Roman supervision too. When the shrine of Zeus at Olympia was destroyed in 400 AD, emperor Theodosius of Rome formally abolished the Games.

In the middle ages (after the 7th century) and at the beginning of the industrialised age (14th-16th centuries) sport was solely for the nobles; “They were monopolised by a handful of dandies in the upper middle class, who had time, money and physical energy to wear themselves out for no other reason than for the game’s sake” (Renson, 1997). However, commoners also practised and amused themselves in various ways. This resulted that sport had a whole different role in the society. The meaning of sport at this time was quite negative. One remarkable description can be read from the pen of John Stow, concerning the attitude of the public towards “sport”.

’The modern sports of the citizens, besides drinking, are cock fighting, bowling upon greens,... also musical entertainments, dancing,...; they sometimes ride out on horseback and hunt... The lower classes divert themselves at football, wrestling,...,and, what is worst of all, lying at ale houses.’
(*John Stow, 1720*)

No doubt, sport did not carry a positive message at this time. The expression “making sport of something” has survived until today, but not necessarily with a positive meaning. Similarly to this, the sense of expressions such as “game”, “play”, “athlete”, also bring other meanings from the different layers of society. “Game” for example, unambiguously refers to any wild animal amongst hunters.

The first “modern” sports clubs were established after the second half of the 17th century, though, their roots reach further into the past. Urbanisation, technical development and the growing distance between human and nature made this process more vivid. Sports clubs for aristocrats had more formulated rules on how to dress and behave than they did on the games themselves. In golf, for example, a “gimme” is still practised today. Most sporting activities were primarily social meetings.

Today theoretical frames cover every part of our life. It is not different in sport sciences. Renson (1997) describes sport as “a physical activity with a recreational and competitive character, in which one tries to overcome either one’s own physical limits or an external obstacle, in accordance with a previously determined code of behaviour.” In a European context, governments worked for many years on a concept, which ended up with a definition of sport. Within the framework of providing quality level access to physical activity for all citizens of the European Union, a text was finally approved:

“ “Sport” means all forms of physical activity which, through casual or organised participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels.” (*European Sport for All Charter, 1992*)

Depending on the type of activity this general term can be divided into four subgroups, such as:

- Competitive games and sports
- Outdoor pursuits
- Aesthetic movements, and
- Conditioning activities.

7.1. The Importance of Recreation in Everyday Life

With the spread of urbanisation and the evolution of technology, working time has become shorter. At the same time the amount of free time grew and the demand for spending it in a meaningful way also grew.

On top of this, due to technologisation and motorisation, today's people are suffering from a lack of physical exercise. Physiologists, and other researchers confirmed a hundred years ago that physically active people have more and better productivity in working life and less absence from work due to illness. Business managers experienced this in the middle of the 20th century and since that time they have encouraged employees to participate in recreational activities during their free time. Also, recently it has become common for employers to provide "work-gymnastics" during working time, or to give extra holidays for their employees in order to refresh their minds.

It should be emphasised that recreation is not lower level competitive sport. Recreation is a multi-componential mass which includes a full range of physical activities like gymnastics, games, dance, utilitarian outings, gardening, which use and develop individuality in the most versatile ways possible, including physical, psychical, cognitive, ethical and moral dimensions. (Renson, 1997)

There are, however, some slight contradictions between theory and practise. What are to be considered recreational activities? If we considered leisure time, as the time spent out of work, we have to consider many activities as leisure activities. Some of them do not support the above mentioned positive goal of recreation. (See above: John Stow 1720.) In Great Britain, for example, a questionnaire for a general national survey on leisure activities (Countryside Commission, 1982) involved expenses of tobacco, alcohol, and readings as leisure spending. Another thing, worth remarking is that many recreational

activities do not fit into the definition of sport, though their positive effects on health are indisputable. These are, for example, spa holidays or gardening. Finally, professional sportsmen do sport as work. Therefore, sport is not pursued for pure enjoyment anymore. Though, this does not mean that professional athletes do not enjoy performing their sport.

8. Construction of the Sport Industry

The consumer expenses involved in sport activities are strictly dependent on industrial background, supply and support. Depending on the type of sport one pursues and the level of participation the components are different in importance if total costs are examined.

In general by the term 'industry' we traditionally understand it as a group of companies who fabricate the same type of products or provide the same type of services. In this view we can distinguish between the car, the cosmetics or the tourist industry, for example. A modern way of describing industries is to group companies according to their similarities in economic activities or production. On this basis new international classification systems were built up in different continents. They are compatible or transferable to each other according to the interest of the world market. In this system one industry – in the traditional meaning - is involved in several defined industrial sectors. (Li et al., 2001; Custom office of Finland, Department of Jyväskylä, 2000)

As sport became a world market the sport industry also came into existence. Some attempts have been made to during the past decades to describe the sports industry, as the business of sport and sport industry has grown.

Many of the researchers have drawn a three-segmented structure, but everyone has a slightly different classification among the defined segments. In the view of Dénes (1997) the three sectors in the sport industry are the following:

1. Equipment and appliances
2. Facilities
3. Sport services a) active sport b) spectator sport

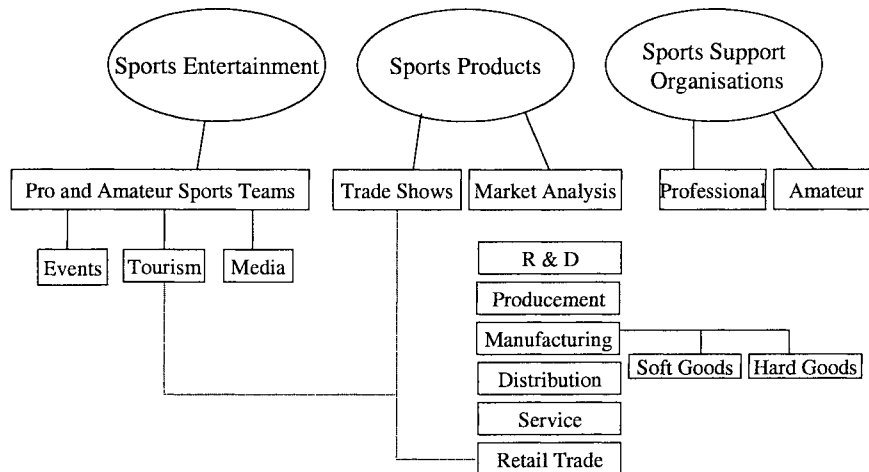
The first sector is equipment and appliances. This can be considered as a supplier to the sport or the sportsmen. Companies in this group produce clothes, shoes, tools, and other necessities for sport fans. There are two main types of these firms. First, the big, multi-oriented companies are loosely banded to the sport and recreation industry. They have wide ranging operations and the sports products are just one branch of their production. Secondly, there are small workshops and manufacturers, who depend on one particular sport, which they are supplying. Among these companies we often can find world market leader for a particular product (for example: 'Empacher' in rowing; 'Struer' in canoe); though strengthening competition in the market forces them towards versatility.

Facilities, the second sector of the sports industry, have stronger relationships with sport. Most of the recreation and sport facilities and buildings were designed with the purpose of practising sport. Their usage for other, commercial purposes is limited, due to the special requirements of sports, which the architect had to take into consideration during the planning. Alternative uses of sport facilities can be, for example, as a location for rock concerts or Christmas bazaars. Recently it has become common to design multipurpose recreational and sports facilities.

In the view of Dénes, the third sector of the sports industry is the sport itself. There are two subdivisions in this sector. One part of the services provides the chance to do, and to practice sport. These are all the sports clubs, fitness centres, and sport travel providers, who encourage active participation in sport. The range varies widely and includes options for both the beginner and for the

world-class athlete. In this case, consumers are an active part of the product. The other part of sport services provides entertainment, and amusement. They offer the possibility to enjoy the viewing of the performances, the beauty of human movement or skilful, tactical co-operation of a team. In spectator sports consumers are a passive part of the product, though undisputedly audiences have a great role producing a good atmosphere.

Figure 1: Meek's Model of the Sport Industry (Meek, 1997)

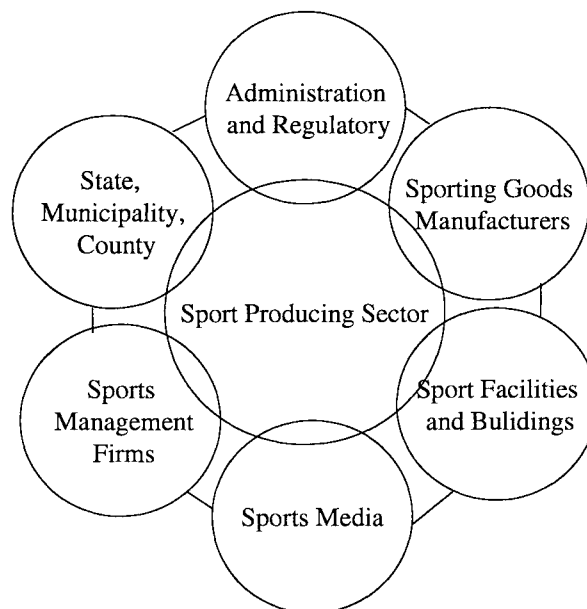


Meek (1997) uses another way to define the sports industry. In his view, the sector of 'sport entertainment' serves for all active and passive sports. 'Sport Products' includes all those firms, which are involved in manufacturing, building, distributing, and servicing sport. Finally, 'sport support organisations' are organisations like club management, leagues, law companies, and marketing agencies, either amateurs or professionals.

Other researchers, such as Li, Hofacre and Mahony (2001) are debating the three-segmented industry model. In their view there is a core production, the

sport itself, around which all the supporting sub-sectors gather. The core is the sport producing sector, which includes event organisers, professional, semi-professional teams and individual sportsmen, governmental and non-governmental sport organisations, trainers, and owners of race participants, like horses, dogs or cars. A common feature of the members in this group is that their main economical activity is the sport itself.

Figure 2: The Two-Sector Model of the Sport Industry
(Li, Hofacre and Mahony, 2001)



The sport supporting sector includes companies, which are manufacturing for or serving out sport production. The authors distinguish six supporting sub-sectors and believe that these six sub-sectors cover the whole range of companies who are working for sport. They remark that there is some overlap between the core production and the supporting sector, because often supporter company also take part in producing sport as owner, sponsor or organiser.

It is worth having a deeper look into the details of the 'Sport Producing Sector'. There is a wide range of different types of companies, who are considered sport producers. Most of them are conventionally accepted, such as competitive teams, leagues, recreational sport clubs and other activity providers, and independent competitors. Besides these, however, we can find participants who have little to do with sport, but their main business activity is connected with sport. These are, for example, medical clinics, or the owners of racehorses, dogs, and cars.

In the sport supporting sector we can find all those organisations, and companies, which are "either providing products and services to support the production of sport activities or selling and trading products that are related to sport activities" (Li, Hofacre, Mahony, 2001). Their prior activity is not necessarily bound to sport.

This model was built especially for professional sport. In case of "amateur" sport services the model has the weakness that as "administrative and regulatory" bodies, sport federations are listed among sport supporters. In fact, the main role of these organisations is providing sport, but their existence depends on sport participants. In other words they are the "conference" of club and team management. Other deficiency of this model is that it was built strictly on the Northern-American sport industry. This is why in some aspects there is no European counterpart for the examples authors have used. Apparently, the sports industry is more developed in the USA than in Europe. On top of this most of the sports, on which the model is based, have a Northern-American-wide structure. This means that, for business interests and because of the great number of participants, divisions are structured on top of one another in four to five layers. The co-ordinating bodies have nothing to do with sport, but fit actions together. A similar trend has started in Europe, for example, with the reformed construction of the European football league system in the 80's.

Another deficiency of this model is that tourism is not included at all. With the busier international sport life a special branch has developed in the tourist

industry. This branch specialises in serving athletes and their staff and satisfying the special needs and necessities of participants in any types of sport.

9. Economics of Sport

Citing other researchers, Li, Hofacre and Mahoney (2001) conclude that “economics addresses the question of how people make decisions about allocating scarce resources to satisfy human wants and desires.” There are two branches in economics. Macroeconomics examines economical activities as a whole, in a comprehensive way. Investment, inflation, cycles and growth are examples of its fields of study. Microeconomics deals with the elements of an economy and examines individuals’ decisions and their interactions. As a special field, sport economics examines why society provides resources to sport, and how these resources are distributed within the sports industry. For studying economics, models are used to describe processes in a simplified way. (Li, Hofacre, Mahoney, 2001)

If we consider sport as an industry, likewise participants should be considered as firms. A firm “is an organisation that combines or organises resources for the purpose of producing goods and/or services for sale”. In the sport industry there are governments and non-profit organisations, which are not considered firms, but play a remarkable role in the field. (Salvatore, 1993) A firm in the competitive market primarily pursues profit maximisation, though, in the lifecycles of a company the strategic goals are changing from survival to growth and sales and so on. In Sport, however, the theory of “winning maximisation” sometimes goes beyond economical rationality. This means that the reason of an investment – for example to buy a star player to a team - is not necessarily for greater economical revenue but to secure a winning position. This model is valid for both professional and amateur sport as well. It has been known to

happen, that a non-profit organisation would even violate its non-profit status if an activity concentrates on profit maximisation. (Li, Hofacre, Mahoney, 2001)

9.1. Determinants of Demand and Supply

9.1.1. Demand

People in any society have demands for different goods. Some of these like food, shelter or health care, are necessities. Other things, which are not included in the necessities of life, are wants. These goods are, for example, entertainment or sporting goods – clothing and equipment or the ‘option demand’ considering any kind of good. In the market there is a basic relationship between price and demand. The higher the price, the lower the quantity demanded on the same item. A hyperbolic curve describes the inverse relationship of the changes in price and the demand. The demand of a certain good is determined by the following factors:

- The price of the good
- The price of other, substituting goods
- The expectation about the future
- The taste of the consumer, and
- The income level of the consumer
- Cognition of the product among consumers

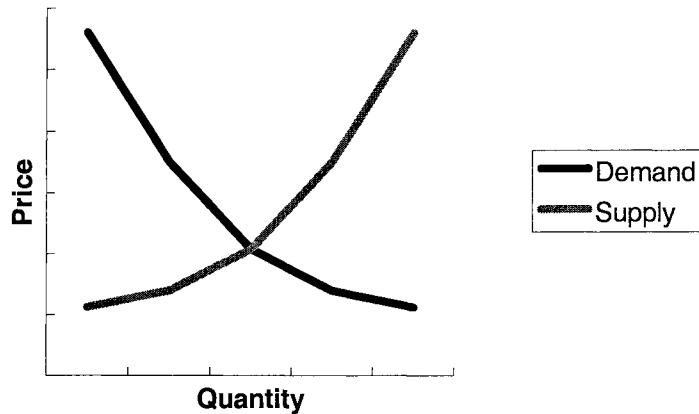
Other elements, which also determine sport consumption, are social filters, which were first proposed by Rodgers (see Figure 6 and 7; page 29). (Li, Hofacre, Mahoney, 2001)

I have to remark that consumer demand is not easily predicted. There is a rather large latent demand. This means that even consumers don't know if they have the desire for a certain product before it arrives in stores. The best example for this can be the Walkman and its success story. Another crazy illustration can be the "Tamagochy". These examples warn that consumers can be taught and fashions generate irrational consumption.

9.1.2. Supply

Supply is the answer of the industry to the demand, "the various quantities of a product offered at a range of prices or the entire range of the demand curve" (Li, Hofacre, Mahoney, 2001). The supply curve is close to the inverse reciprocated of the demand curve. It shows the effect of prices and quantity produced of a certain item or good. Factors, which have impact on supply, are the price of the product, the costs of production, technology, other suppliers, and taxes. If we draw the two curves in a single graph, the cross of the two curves will show the "market clearing point" (Kotler, 1997). This shows the point where the demand and supply are in balance. Underneath the crossing point is the excess demand. In such a situation prices rise due to the greater demand, in order for the balance to return the demand must be satisfied with more production. Above the cross point is found the excess supply, which means that there is more product in the market than is needed, therefore suppliers lower the prices hoping to have larger market share (see Figure 3, page 23). Apparently with the lower price demand will rise, so the balance will return soon. (Kotler, 1997; Li, Hofacre, Mahoney, 2001)

Figure 3: The Curves of Demand and Supply



9.2. A Pure Economical Based Model

Dénes (1997) expressed that sport, as an economical segment, has the same features of consumption patterns as any other economical segments. The product with the better quality, price or marketing will win and gain a larger market share. Especially in sport services, however, it is common that the outcome of the “product” is unpredictable. The product is not ready at the time of the consumption. This is valid for both the spectator sport and the active sport. If one took part in sport activity the output of the product (e.g. the increase in pleasure) depends on the person’s previous experiences in sport in general and in that particular sport, the level of knowledge of the playmates, and also the equipment used. In outdoor activities weather also influences the final outcome. In spectator sports the uncertainty is one of the values of the product. The greater the uncertainty of the outcome is the greater the chance of an exciting game. In other words, if equally good quality teams or competitors are meeting it is hard to predict the result, and this increases the excitement.

This is in harmony with Knowles, Sherony and Hauptert (1992), who state that the attendance, thus the demand, is higher when there is a game with an uncertain outcome to come.

From this point of view there is a clear difference between sport services and any other services. Purchases of services are in most cases in advance. The difference is, that in theatre, museums, or during travel, for example, the high standard of the product makes quality. In sport, in contrast, the uncertainty makes the essence of the game. If the winner is not predictable, the excitement is greater. In describing demands of sport, Dénes applied general economical terms. For materialisation of consumption all the followings should appear:

- Interest in the product – unsatisfied demands
- Knowledge about the product
- Intention for consuming
- Available time
- Available money

If any of the elements in the above list is missing, consumption does not occur. These terms are the mirror counterparts of Kottler's "Marketing Mix", from the consumers' point of view. Dénes did not consider economy of sport to be any different, than that of any other types of economics.

9.3. Cost – Benefit Analysis

Another approach of Dénes (1997) is to define the "Price" of sport. In his view consumers are rational decision makers. Therefore, they will define the price of sport by subtracting their 'incomes', which are received through sport; from their 'outgoings', which they invest in sport. If the anticipated result is "-", so incomes

are greater than outgoings, and the consumer feels that the price is worthwhile. (For this see also Colander, 1998). In general this decision making process occurs at a subconscious level. In this model monetary and non-monetary elements are included in the same row. Outgoings include for example the money spent on an entry fee, travel expenses, refreshment, etc, the time spent (together with preparation and travel), and lost income if, by chance, one has to take days off from work. In the same analogy, incomes in this equation include monetary reward, health and social benefits, amusement, joy, and so on. There is no numerical way of expressing the result. Repetition or refusal to consume appears in an empirical way, whether the consumer was satisfied or not.

Figure 4: The "Total price" of Sport (Dénes, 1997)

$$\text{"Total price"} = \text{Total outgoings}^* - \text{Total incomes}^{**}$$

*Outgoings = spent money, spent time, loss in work, inducted expenses, etc.

**Incomes = monetary reward, joy, amusement, health benefits, leisure, etc.

This model is used also by Colander (1998) who applied this to the economic benefits and costs analysis at firms. "If relevant benefits exceed relevant costs, do it; if relevant costs exceed relevant benefits, don't do it" (Colander, 1998).

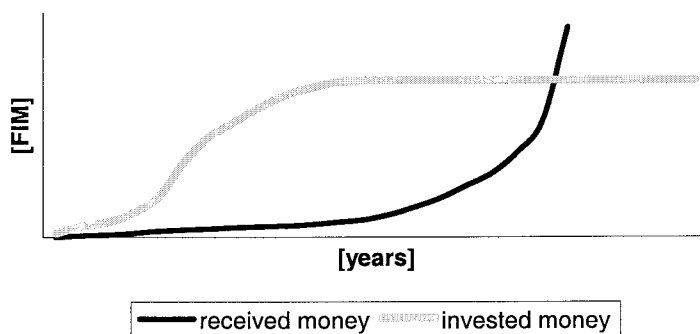
9.4. Investment and Its Return

During a sport career the amount of invested money is not distributed in equal terms. At the beginning, every sports discipline requires a certain necessary investment, which includes the membership fee, required equipment, clothes and so on. After the start this amount constantly rises. A sharp increase occurs in expenses in competitive sport, when one starts to practise regularly and

seriously in order to reach a better sport performance. This happens normally with youth, around the age of 12-18 years and the tendency ends 5-8 years later. There are two reasons for the sharp rise. First, adolescents grow, therefore they need bigger size clothes, shoes, and maybe even equipment. Second, in equipped sports, as the performance become better, there is a need for better quality, and therefore more expensive equipment too. After a certain level there is no more increase in expenses but the price level remains consistent until the end of a sport career.

Naturally, there is no income from sport at the beginning of a career. But this also occurs after the time that investments are already high. The first income occurs, when one becomes a successful competitor. The necessary level of performance for that is depending on the discipline. In football for example, even lower level performance can result in remarkable earnings from sport, while a rower cannot hope for any financial return until international success is achieved. A comprehensive figure drawn by Puronaho (2000a) shows clearly the career long financial investment-earning relationship.

Figure 5: The Relationship between Invested and Earned Money During a Successful Sports Career (Puronaho, 2000a)



Once more, it should be emphasised that any return of the invested money is available only for those few, who become professional or semi-professional athletes.

9.5. A Society Based Model

From another point of view, Gratton and Taylor (1985) classified the consumption of sport and its benefits. They distinguished:

- Durable consumption – physical development, which influences one's quality of life, and working capacity
- Non-durable consumption – esthetical joy and/or fun, which exists only during the practice
- Capital good – as a result from higher working capacity and
- Generated consumption activities – the result of a higher level of quality of life is that one consumes more in other parts of life as well compared to non-active people.

Authors remark that in many countries governments do not realise the community benefits from people having active lives, therefore, they ignore or undervalue the importance of involvement in subsidising and encouraging physical recreational activities. There are several positive effects to the society if people are physically active. One is that a healthy workforce has a higher productivity in its work, and spends less time off work due to illnesses. The direct result of this appears in the industrial profit and in the drop of health care expenses. Another that it is psychologically proven that participation in sport and recreation is an alternative to, or moderator of aggressiveness. In other words, people deviate less from the generally accepted social norms when involved in sport (Gratton & Taylor, 1985). This has been taken to the extreme by criminal psychologists who recommend sport training in penitentiaries. Finally, there is the 'option demand' of the society. This is the advantage that people can choose between different facilities. For example, if there were a few gymnastic halls in the city, one can decide, which has the preferred services. Another aspect of these benefits is the social good and the national pride, which rises with the success of national team in the international sports arena.

According to Gratton and Taylor (1985) the available money and free time determine leisure consumption. In rational consumer behaviour there is a certain level of consumption, which is dynamically balanced. All the changes in the market, such as prices changing or facilities opening or shutting also have an impact on the decision-making process of the consumer. For example, if the person's income level rises, it can have an effect in two ways. One is, that she/he turns to consuming another type of leisure activity, which is more appropriate to her/his new socio-economical status. This results in a change in the market sharing, as consumer preferences change. In another case, with increasing consumption power the same service provider gains the opportunity to sell better service for a higher price to the same consumer in the same place. These opportunities are in harmony with the discussed benefits of 'option demand'.

9.6. Social Filter Model of Rodgers

Other researchers have built models specifically on sport. Rodgers' (1977) "social filter model" gives one of the most comprehensive overviews on consumer demand analysis.

In Rodgers' view through a several-layered system, population is filtered at a social and individual level. At a personal level, factors like age, sex, educational background or social classification filters the whole population and shows us the "potential market". At this level one of the strongest selecting factors is personal income. He argues that the listed factors determine, which sport, if any, are chosen to do. Participation in sport activities, however, is affected by a very complex system of other factors. At the societal level the policy, which the governments follow makes another type of selection. The level of physical education, construction, finances and promotion of sports facilities are the

strongest influencing factors. All these influence consumer's decision making. For more details see Figure 6 and 7.

Figure 6: Participation – the Social Filters (Rodgers, 1977)

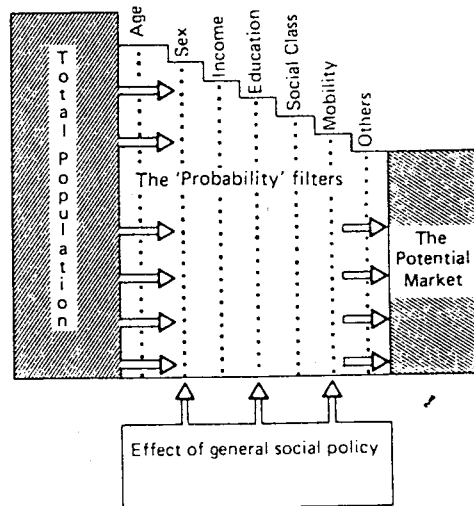
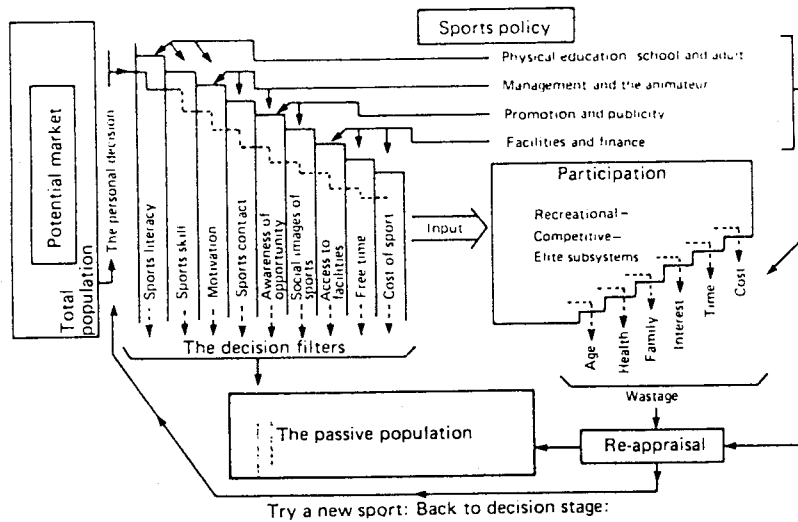


Figure 7: The Participation System (Rodgers 1977)



Rodgers built his model to explain, why people do not participate in sport, but did not research the reasons being involved in sport participation. The two

figures, in practice, provide an answer to this question too. If we compare the constraints of the demand on consumption to above examined factors (Dénes, 1997; Li, Hofacre, Mahoney, 2001) it turns out that these social filters, as Rodgers named them, are the same as those “other elements of demand for sport activities”, which were described at Li, Hofacre and Mahoney (2001)

9.7. Complex Cost Analysis

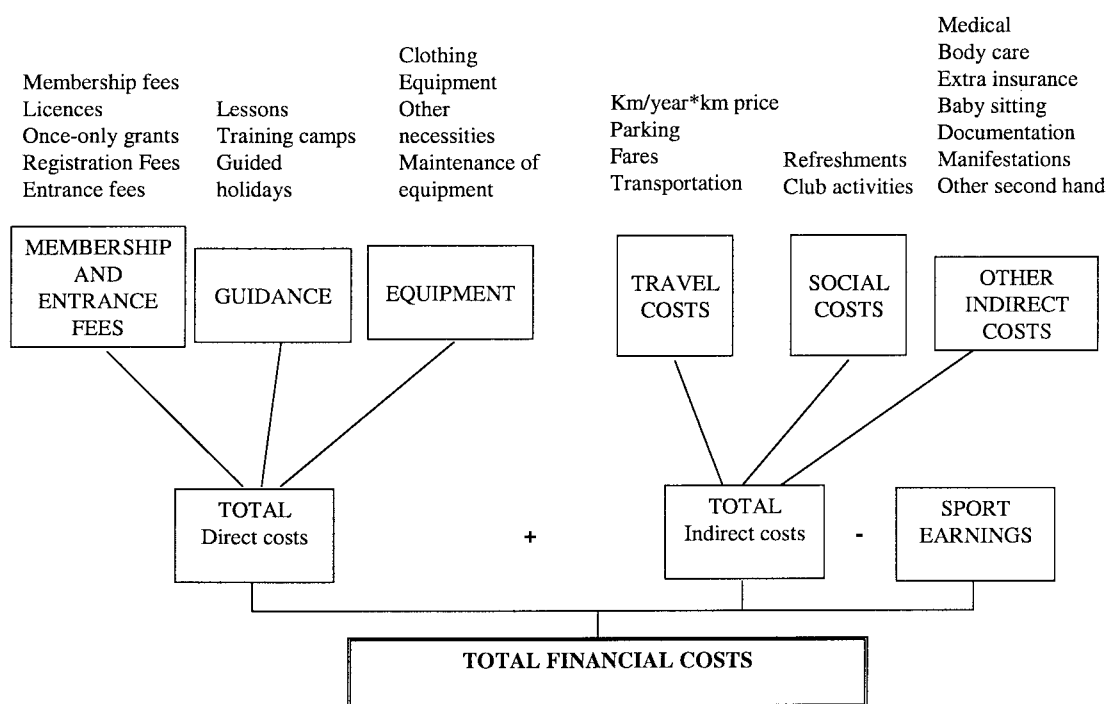
In a recent complex research project Taks (1994) and her colleagues built a model for examining what contributes to the total expenses of sports participation. In their view, sport is not a single product that we consume as a whole. The entire price of a sport is constructed as the sum of the prices of goods, services, time and so on spent on it. In the model, however, sport earnings were included as a reducing factor of total expenses.

Researchers distinguish between direct and indirect costs in the broader category of expenses. Direct costs are unavoidable in the pursuit of sport or they are in close relationship with it. These costs include membership fees, equipment and its maintenance, coaching, sport holidays, and so on. Among indirect costs, authors calculated all those related expenses, which had less to do with the sport itself, but yet were generated by it. These include travel costs, social costs, like refreshment and club activities, and 'other indirect costs' such as medical and nutritional expenses. In this model the total financial costs are calculated with the sum of the direct and indirect costs, reduced by sport earnings. The subtraction of sport earnings from the money spent, when calculating total costs, bears some similarity to the costs - benefits model, which I have already mentioned earlier (Dénes, 1997; Colander, 1998)

On the base of this model the research of Taks and her colleagues in 1994 analysed expenses in a total of fifteen sports in detail. The fifteen sports

included both individual and team sports. The authors found that both direct and indirect costs have wide stratification in different sports. One sport requires greater investment in equipment, another in coaching, while a third requires lots of social activity, and expenditure from its fans. At the same time, related data have a large standard deviation. In general they stated that membership fees and guidance fees represent a great share of the direct costs. While examining indirect costs they found that travel expenses represented a great share of the total expenses. Golf and windsurfing appeared to be the exceptions in both cases as their equipment and social costs were overwhelming.

Figure 8: Consumer Expenses in Sport: a model (Taks, 1994)



Gratton and Taylor (1985) observed, similarly, in this topic that the price of sport includes several components such as equipment used, entry fees, travel costs, and time costs. The contribution of the total costs differs from one activity to another. Outdoor activities usually require no entrance fees, but expensive

equipment or clothing; while in swimming, for example the equipment, in practice, costs nothing compared to the other cost constituents.

The cost constituents are different in composition not just in different sports but also in the same sport at different levels. Free-time sportsmen have fewer expenses in 'equipment' and 'guidance', because they use lower quality equipment, which is used for longer period of time and encounter lower maintenance costs. Free-timers do not participate in training camps. It is rare that they have insurance, and medical expenses are incurred only in emergencies. In contrast, the expenses on 'social costs' and on accessories probably exceed the amount, which a top athlete encounters.

9.8. The Economic Value of Sport

There is no doubt that sport and recreation contributes great money to the economy. It shares 3% of the world trade (British Sport Council, 1995). Europe and the USA together control more than two-thirds of the world sports market. Sport and recreation affects several other industrial segments. The service sector and the tourist industry are especially pleased with a vivid international sports circus.

When estimating the value of a certain industry there are some methods available for use. For this purpose a basic method is determining Gross National Product (GNP) or, nowadays, determining the more often used Gross Domestic Product (GDP). There is a difference between the two data. GNP means products and services produced, over a certain period of time, by companies owned by citizens of a particular country, regardless of the place of production. Production of subsidiaries and plants in foreign countries are also included in this figure, though the product, sales, tax or profit might never reach the parent country. GDP, in contrast, represents the total production, which was

made inside the borders of a defined country, regardless of the ownership of the companies. When calculating GDP the following are taken into consideration:

- Personal consumption expenditures,
- Gross private domestic investment,
- Government purchase of products and services, and
- The net export of goods and services.

Meek (1997) estimated the size and the value of the sports industry in the USA using the methodology of Gross Domestic Sports Product. Besides the above-mentioned components of GDP, Meek included the advertisement expenditures in sports industry. This result shows the sum of all the correlating production and service output, which was done in the USA, in the sports industry. According to Meek's data in 1995 the sport in the USA was a 152 billion USD industry, and with this value the sport industry as a whole reached eleventh place in the 'US Industry Ranking'.

Calculating a specified segment of the GDP is more problematical work than measuring it as a whole. The greatest challenge is that usually there is no statistical list that specifies sports consumption, for example in the tourist or the entertainment industries. (Li, Hofacre, Mahoney, 2001)

Another method for researching economical value is to select a representative share of the sports industry, research it, and on the basis of the received data to estimate the value of the whole industry. In Canada, Zalatan (1981) carried out research using this method. The "economic value of sport" was appointed through ten selected sports. In the data collection the number of participants, the frequency of participation, and the average weighted expenditure in the particular activity were taken into consideration.

On the basis of the collected data, calculations were corrected to 44 recreational activities. These were considered being the market of sport. Corrections to the changes in population and inflation between 1976 and 1980

in Canada were also calculated. As result an amount of 8,6 million CAD was received, as being the total economical value of sport in Canada in 1981.

ACTIVITIES	NUMBER OF PARTICIPANTS (Thousands)	AVERAGE WEIGHTED EXPENDITURE (Dollars)	TOTAL EXPENTITURE (Thousands)
Swimming	5558	113	128.054
Ice Skating	2930	36	105.480
Tennis	2175	108	234.900
Golf	1911	333	636.363
Ice Hockey	1459	191	278.669
Cross-Country Skiing	1336	107	142.952
Alpine Skiing	1199	408	489.192
Curling	826	145	119.770
Alley Bowling	652	112	73.024
Baseball	427	53	22.631
Total	18473	-	2.731.035
Average	-	148	-

Table 1: Participants Expenditures for Selected Physical Recreation Activities in Canada in 1976 (Zalatan, 1981)

This research, however, did not include many of the supporting segments of the sport industry. It deals only with the value contributed by active participation in sport. Another drawback of this method is that multiplying factors cannot provide a genuine value measurement.

In this research the interesting point is that Zalatan examined both cross-country skiing and ice hockey. According to his findings ice hockey is remarkably more expensive than cross-country skiing, regarding the average weighted expenditures.

It should be emphasised that the research was done in the 70's, in Canada, where ice hockey was already a favourite media sport, while cross-country skiing was for "fanatic amateurs" at that time.

9.9. The Importance of Voluntary Work in Sport

Sport is, in most part of the world, a bottom to top built system. People start to practise a sport discipline and created a club. Then clubs formed federation which resulted in the nation wide, later the international sport organisations and sport life. This self-active feature marks that work has began with free willingness for the "own sake". This is why it is not a surprise that people, who are involved in sport, are mostly willing to do voluntary work for the common welfare. Another reason is, that through voluntary work, club and club members substitute for financial sources. This statement is especially valid in Finland. More than 90% of the Finnish sports clubs operate mainly on a voluntary base. The voluntary work in sport contributes more than 740 million USD/year in Finland. (Stronger Through Physical Activity and Sport, 1993). There are other, non-financial reasons, why people are engaged in giving their time and talent to the local club. Voluntary work, at the same time, is a good opportunity for animating club life. We are social creatures and the "get together" stimulated social life, is congenital with everybody. Moreover, by the active work, members come to feel the club as being their 'own' property. Through this the sport results achieved have more emotional value.

9.10. Definition of Professional and Amateur Sport

In the view of Dénes (1997) “a professional athlete is the one, whose yearly main income source is connected to sport performance”. This income is at the level that easily covers the living expenses of an athlete and other financial sources are not considerable in her/his personal economy. Amateur athletes pursue sport on a regular or occasional basis without having any financial or material return, except for the fortunate prizes received. Dénes described a third type of sportsmen, the “competitive amateur”, who practises sport on a frequent and regular base with the intention of achieving better sport performance in competitions, but the financial or material return from sport activity does not cover the invested sources.

In Finland the definition of professional sport is bound to a certain amount of money. Anyone, whose annual income is above 56 640 FIM through sport activity is considered to be a professional, regardless of the comparative proportion in an athlete's whole financial earnings (source: Finnish Olympic Committee). This definition, however, can lead to misunderstanding. In Finland top athletes receive official support in two ways. First, the Finnish Sports Federation (SLU) provides them with a found type grant. The money of this found is personal, and can be used for any consumption connected to sport practice, like equipment, nutrition supply, or clothing. The size of the found varies depending on the sport discipline because the money comes mainly from the sponsors of that sport. Second source of the athletes is in cash income. This was set to be the mentioned 56 640 FIM, due to taxation reasons. Regarding the explanation above, it is clear that an athlete, who is regarded as professional has not have to live of this money, but there is an additional source which can even exceed the cash income in value.

9.11. Economical Differences Between Recreational and Top Sport

Sport disciplines in different parts of the world develop in different strengths. Skiing is more popular in the Nordic countries and in the Alps, sailing at the seashores. This is determined by geographical circumstances. Through the decades many countries have developed some discipline to be a “success sport” of that country. Traditionally successful sports receive more state subsidies. At the same time they receive higher media attention in that region and through this greater sponsorship support too. These sports locally have a better chance for development, via more sources for researching new equipment and coaching methods, and so on. No doubt about it, however, the management of these sport disciplines did a great job to reach the position they have in the domestic field.

Also there are differences in how different levels of activities have received support. National governments are mostly involved in supporting elite sport activities, because they are considered being the forerunner and the best marketer of recreational activities (Gratton and Taylor 1985). Li, Hofacre and Mahoney, (2001) agree with this, because the “governments receive far more attention for their support of elite sport and more opportunity to demonstrate the success of their subsidies to the larger communities.” The investment returns later in the increasing recreational consumption and the positive effects of the earlier mentioned “social benefits”. At the same time top sport is the one, which gains great media attention, and therefore, attracts sponsors. There is no direct revenue from recreational sport but the above-mentioned “social good”. In a given time period the expenditures of operating recreational facilities, organising activities with recreational purpose are in the same level with compared to top sport. In the case of a swimming pool, for example, there is no difference if the world’s best swimmers have their training in the pool or the local people, the staff must be in place and energy is used in the same amount. Sports facilities used nearly exclusively for competitive participation are those, like ski jumping

hill, motor cross track or high diving platforms. Local governments are eager to finance recreational facilities and activities. The subsidy can be realised in various ways from the direct money support, through cost reducing opportunities to tax advantages. The tax advantages, for example, results in reduced operating costs of the facility or the sport organisation, which then causes a decrease in the prices of entry fees and equipment rental. The lower price allows a wider public to participate. (Li, Hofacre, Mahoney, 2001)

Another distinctive difference between recreational and elite sport is that prices of equipment rise steeply as the quality of the specified products rises. The price of a high quality pair of cross-country skis, for example, is six times higher than a pair for active skiers. Similarly, ice hockey skates have a price range of 549-3 598 FIM in winter 2001 (source: Intersport Näppi). On top of this the quality deteriorates very fast with the usage. The most important and most sensitive part is the gliding surface of the cross-country skis, which is easily destroyed by a small piece of rock on the track. This price gap features most the other necessary equipment such as boots, poles or clothes.

In a session of the course of “Sport and economy” (Puronaho; 2000a), the financial structure of top-level sport in Finland was explained. Puronaho stated that top-sport in Finland is financed by a complex system.

	Olympic level cross-country skier	Ice hockey player	A beginner
National Olympic Committee	Great	Ø	Ø
Municipality	Some / Ø	Some / Ø	Some / Ø
National Special Association	Great	Ø	Ø
Sport Club	Some / Ø	Great	Some / Ø
Business Enterprises	Great	Great	Ø
“Own Pocket”	Great / Some	Some / Ø	Great

Table 2: Importance of Different Suppliers in Covering Expenses in Different Levels of Physical Activity in Finland (Puronaho, 2000)

From sports organisations and from business enterprises financial support comes directly, when athletes receive sponsorship or financial support. From the public sector, support arrives in an indirect way. These are in the form of subsidies, and foundations that provides resources. In analysing the breakdown of the budget of a top-level skier, ice hockey player and a beginner level sportsman, we discovered the status, which is described in Table 2.

Of interest in the table above is, that cross-country skiers and ice hockey players receive different types of financial support, even though performing at same level. The data is from the research "The economy of top sport" (Huippu urheilun talous), which was carried out among Finnish top athletes. (Lämsä, Lanki, Puronaho, Järvinen and Rusko (1995))

10. Differences in the Sport Environment

Indoor and outdoor facilities provide a wide range of variety of leisure activities. One fourth of the human population lives in urban areas, where there is no close contact with nature. This proportion is much higher in the societies of the developed world, where people have more time and money for leisure activities. In the past decades indoor facilities were built for leisure purposes. Rock climbing, surf, sunshine, or motor-cross are all available indoors. At the same time there is a growing demand for natural facilities, because people also would like to go out of doors.

Vuolle (2000) uses three major groups to describe recreational facilities. "Genuine natural environment" means an untouched, rarely visited natural area. This group includes national parks, reservoirs and protected areas and also remote forests and lakes. Human influence is hardly visible in these areas

except paths and shelters built from local wood. The “Developed natural environment” is all the bicycle and running track, football field, and so on. These fields are mostly located around urban or built-up areas. These modified natural areas provide services like illumination, toilets, changing rooms and restaurant in the vicinity, but people can feel like they are ‘out there’. The third group is the “built environment”. This contains all urban located sport facilities like sport halls, swimming pools, gyms and athletics stadiums.

When comparing the environment of cross-country skiing and ice hockey, in Vuolle's (2000) description cross-country skiing uses a natural environment, both genuine and developed, depending on the main purpose, and the level of activity. In Finland it is "the Right of Common Access" to use natural sources without charging any fee. Across the country many thousand of kilometres of prepared skiing tracks are waiting for the public and competitors every year. In late winter the ice on the lakes and deep forests become accessible with skis, providing the excitement of reaching remote places. Ice hockey is pursued in a man made environment or developed natural area, where entrance fee, and rental of the ice rink is a natural concomitant of the facilities. Today, in Finland in 168 ice stadium there are 198 ice rinks and another 38 artificial ice rinks are in use without roof, and occasionally additional natural ice surfaces are used for practice (source: Finnish Ice Hockey Federation). In Finland mainly ice stadiums are used for practising and playing organised ice hockey. For non-organised ice hockey there are thousands of natural ice surfaces in use around the country. The prepared surfaces are protected by fence, and therefore users have to pay entry fee or “rink-fee” to have the right to enter. Though maintenance is necessary in both cases, for the ski track and the ice rink, fees are charged only for ice hockey.

11. Research Methods and Procedures

This work is a part of the Finnish national research "Mitä liikunta maksaa?" (How much does sport cost?). This larger project runs under the umbrella of the Finnish Sport Federation (SLU), fourteen national sports federations, and many municipalities of Finland, in the years 2000-2002. The purpose of this large research project is to find out the expenses of practising sport 1) in different sport disciplines, 2) in different parts of Finland, 3) in different age groups, 4) in different sport clubs and 5) the changes that have occurred in the past year in expenses.

The data collection for my thesis work was carried out as a part of this larger research. Using the quantitative data of the above mentioned research framework a financial comparison was carried out between cross-country skiing and ice hockey to expose what contributes to the financial differences. The work is a descriptive analysis.

The sports disciplines were chosen, as they are two very popular and widely practised sports in Finland, with two different types of management, widespread popularity among Finns and having adequate supply-education for the new generation of sports enthusiasts. The additional reasons they were chosen were that both sports disciplines are pursued in the winter season, and that, because of their popularity at the top level, they are competing with each other for sponsorship and managerial knowledge. Participants of the research, pursued sports as well as at a very low level as at the top, covering the whole range of different levels in both sports.

Data collection was performed through a personally distributed questionnaire and via the internet. Completed forms arrived from around the country. Due to the higher density of population, a greater share of the replies arrived from the southern and western part of Finland. In places where there is a low density population, organised sports activity – especially team sports activity – is often not available. In spite of this, sufficient data was received from Lapland and

eastern Finland as well. It is surprising, however, that though the questionnaire was on the internet for only a short time many more responses arrived from this version than by personal distributed questionnaires.

The questionnaire was designed to find out in what way sports enthusiasts have to pay for their hobby and on what different basis these expenses are emerging. Each particular segment of the expenses has a specific list of questions. Questions were grouped as: general information about the sportsman and her/his sporting life; expenses connected to sport participation; and opinion poll about correlating expenses in sport participation. The English translation of the original questionnaire is found in Appendix 1.

Quantitative data was handled with the SPSS program. Results were grouped into tables and figures to give an insight into the particular segment of the questions, and to give the possibility to compare the two different types of sports activities. In this work the "Consumer expenses in sport: a model", described first by Taks and her colleagues (1984), was used as the theoretical framework and was applied with regards to sport earnings not being taken into consideration and expenses connecting to competitions are calculated as part of guidance. For an overview of the model see Figure 8: Consumer Expenses in Sport: a model (Taks, 1994), page 31.

The Selection of the sports disciplines, the objectives of this study and the handling of the data was in accordance with the agreement with the supervisors of the research "Mitä liikunta maksaa?".

12. Results

12.1. Results on General Data

Altogether 342 questionnaires, 295 from ice hockey and 47 from cross-country skiing were returned. With regards to the level of practise, from cross-country skiing an equally great share of the answers arrived from both regional and national level sportsmen (42,6%) and a smaller amount from the lower level of participation. Of the ice hockey players close to 60% responded from the regional level participation and a little over 20% from the top level. Athletes at the local level and free-time participation returned close to an equal share of the remaining responded questionnaires in both sports.

Sport discipline	Frequency of activities per week	Level of practice				Total
		National or above	Regional	Local	Free-time	
Cross-Country Skiing	Less than 1	1	7	1	1	10
	1-3 times	2	7	2	2	13
	More than 3	17	6		1	24
	Total	20	20	3	4	47
		42.6%	42.6%	6.4%	8.5%	100%
Ice hockey	Less than 1		3	4	8	15
	1-3 times	5	129	26	15	175
	More than 3	57	43	3	2	105
	Total	62	175	33	25	295
		21.0%	59.3%	11.2%	8.5%	100%

Table 3: Distribution of Level of Practice and Frequency of Activities among Participants of This Research.

Most of the participants practising the examined sports disciplines had done so for at least eight months per year. This naturally follows from the previous observation. For regional or more serious level sport participation one should be

in regular training. In ice hockey, for example the competition season alone lasts for 6 months. A very low rate, 8% of the total sample had been training for the examined sports disciplines less than 6 month. These are the “free-timers”. In practice these people are in training during the rest of the year too, but not training for the sport in question. They can be considered as true recreational sportsmen. Interesting to see in Table 3 that a part of athletes with high level participation conversely has no training every day.

The gender share from the total sample was: 88% of the participants were male and 12% female. In ice hockey the distribution was 93% and 5%, while in cross-country skiing it was 55% and 45%, in both cases in favour of male sportsmen.

With viewing location, there was a wide range of variance. Questionnaires were returned from all the regions of Finland, from 89 different cities or municipalities, and close to 140 different sports clubs (Appendices 2 and 3). I have to remark that the names of clubs were marked according to the form, the participants filled. Corrections were made only if sameness was clear (e.g. Etelä-vantaan Urheilijat > Etelä Vantaan Urheilijat). Therefore it might occur that the same club has two or more rows as its name was mentioned in different ways in different questionnaires.

Other sports, which participants widely practised, were football, salibandy, athletics, golf, and Finnish baseball, but there was a wide range of sports, which were practised as secondary or as a third discipline or "just for fun".

		% within Sport discipline		
		Sport discipline		Total
		Cross-Country Skiing	Ice hockey	
age group	6-10 y	10,6%	19,8%	18,5%
	11-14 y	34,0%	39,2%	38,5%
	15-18 y	29,8%	30,0%	30,0%
	19-34 y	14,9%	7,4%	8,5%
	above 35 y	10,6%	3,5%	4,5%
Total		100,0%	100,0%	100,0%

Table 4: Distribution of Age among Participating Athletes

Regarding age distribution 11-18 years old junior sportsmen represented above 2/3 of the whole sample. Another 18,5% of answers were returned from the youngest age group and only a small proportion of the responses was from older age. For more details look at Table 4 above.

A greater part of the participants lived in a “normal” family, where two adult and one, two or three children made up one household. Families with one adult member numbered 30. Most of these households were single, young persons, but there were some participating lone parents with one, two, or even four children. A small proportion, 5% of the participating families had more adult members. These were grandparents or adult children who still lived with their parents.

Regarding income level from Table 5 it turns out, that ice hockey players were wealthier compared to cross-country skiers. Close to one third of the participant ice hockey players lived in upper class and another 40% in upper-middle class households. Among skiers 40% of the participants lived in middle class and another 40% in upper-middle class households. Seventeen percent of cross-country skiers lived in upper class level. Single, young participants had the lowest income level personally. The small share of the participants, who lived in the lower class households (e.g. lowest income level per capita) consisted of big families or the lone parents with more children.

		% within Sport discipline		
		Sport discipline		Total
		Cross-Country Skiing	Ice hockey	
Total income of the family (FIM/year)	Under 50 000	2,2%	2,5%	2,5%
	50-100 000	2,2%	4,0%	3,7%
	100-200 000	39,1%	20,9%	23,5%
	200-300 000	39,1%	40,6%	40,4%
	Above 300 000	17,4%	32,0%	29,9%
Total		100,0%	100,0%	100,0%

Table 5: The Distribution of the Income Level of the Families in the Two Sports

Here, in the general part of the results, I have to remark, that in both sports disciplines there were some supposedly professional athletes who had a much noticeable higher expense level than the other sports participants. In some cases these large figures influenced the statistical outcome strongly.

12.2. Expenses on Membership, License and Other Similar Fees

There was a great variation in the amount of membership fees paid. Around 100-200mk seemed to be the most accepted amounts paid as a membership fee in both of the sports disciplines, because about half of the participants paid around these sums. Viewing maximum amounts in cross-country skiing the highest membership fee paid was 550mk, while in ice hockey the figure was more than twenty times more. Altogether thirteen reports state membership fees above 1000mk. Unfortunately, from ice hockey close to half of the reports did not provide us with data of membership fees. In those cases membership fees were included in license fees.

	N	Minimum	Maximum	Mean
Membership fee (FIM/Year)	164	0	12000	522,51
License fee (FIM/year)	185	15	12500	982,77
Insurance (FIM/year)	61	20	1000	251,48
Other monthly payments (FIM/year)	224	50	15000	3662,74
Other obligated costs (FIM/year)	39	50	10000	2456,41
Valid N (listwise)	8			

Table 6: Obligated Costs Paid to the Club or Federation in Ice Hockey

The received data concerning license fees also varied greatly. Similar to membership fees, in cross-country skiing, license fee values were moderate

and balanced. In ice hockey the mean value shows again that there were some extreme high figures. There were fifteen reported cases where 3000mk or above is paid, but all of them were unique in nature. There is a large amount of missing data. It is important to remark that in Finland clubs determines the sum and the contents of license fees. Membership fee, competitive license, insurance, equipment and its service, ice rink, travel can be included. Naturally, parallel with the higher level participation most of these costs rise, effecting consequently the larger expense of license fee. Athletes paid license fee in ice hockey from 35 to 12 500mk, in cross-country skiing from 50 to 590mk per year. The minimum fees were rather even at any level in both sports. Concerning the maximum values, they were higher by magnitude as performance level rose. The statement was especially valid for ice hockey.

Insurance was, in many cases, a part of the membership or the license fee. Only 22% of the answers informed us of separate insurance expenses. The amount varied to a moderate degree and showed a balanced amount. In both sports disciplines values were at a similar level.

	N	Minimum	Maximum	Mean
Membership fee (FIM/Year)	42	20	550	90,95
License fee (FIM/year)	37	30	590	183,78
Insurance (FIM/year)	14	15	600	244,43
Other monthly payments (FIM/year)	10	70	800	407,00
Other obligated costs (FIM/year)	3	300	15000	5766,67
Valid N (listwise)	0			

Table 7: Obligated Costs Paid to the Club or Federation in Cross-Country Skiing

Reasons for other monthly payments and other obligated costs were: equipment, rental of training hall or ice, ticket for complementary training in gym, team fee, travel abroad, season pass and detergent. Many of the reports did not mention the reason, just the amount, which made it difficult to allocate

why these expenses appeared. It is worth mentioning, however, that the mean value of other monthly payments is double to all other regular payments together.

In cross-country skiing it was unusual for sportsmen to pay “other monthly payments” to the club, while in ice hockey this represented a large part of the total amount of fees. In contrast, non-regular “other” expenses occurred in higher amount in cross-country skiing. Summing up “other monthly payments” and “other obligated costs” in the two sports, the amount was found about the same.

12.3. Travel Costs

When analysing the travel costs, it was found that nearly all of the participants used their own transportation to go to daily training. Mainly young sportsmen, less than 18 years used public transport for this purpose. A great number of these participants were living in smaller cities.

The mean values in Table 8, page 49, show that travel expenses were higher in ice hockey than in cross-country skiing in free-time-, local- and national or above level. But at regional level participation the total travel costs of a cross-country skier were remarkably higher than of an ice hockey player. It is interesting, however, that from ice hockey we received 0mk data at all levels of participation, while from cross-country skiing just free timers reported this. This shows again that the high level of license fee in ice hockey, in certain cases, covers even travel expenses, while cross-country skiers generally have to pay separate travel costs. It is worth to remark that a few participants reported travel expenses above 10000mk – there were 2 from cross-country skiing and 10 from ice hockey.

Mean

Sport discipline	Age groups	Travel costs together (FIM/year)				
		National or above	Regional	Local	Free-time	Total
Cross-Country Skiing	6-10 years	.	1592	1000	200	1195
	11-14 years	4267	1764	1650	.	2219
	15-18 years	4275	14320	.	.	7145
	19-34 years	3410	2000	.	1700	2964
	above 35 years	2750	1000	.	250	1400
	Group Total	3905	4223	1433	600	3601
Ice hockey	6-10 years	.	1787	2097	1540	1861
	11-14 years	2400	2385	2491	1427	2368
	15-18 years	4825	3401	1300	5000	4183
	19-34 years	1333	2909	.	1363	2017
	above 35 years	.	.	1917	1125	1283
	Group Total	4380	2494	2121	1490	2749
Table Total		4203	2650	2064	1367	2852

Table 8: The Regular Travel Expenses in Cross-Country Skiing and Ice Hockey in Different Age Groups and in Different Level of Participation

12.4.Costs Connected to Tournaments and Competitions.

With regards to the above costs, questions were focused on entry fees, travel costs to and from, food expenses and other correlating expenses at tournaments and competitions. A great difference can be observed between the minimum and the maximum values. In Table 9, page 50, the contributing elements of related expenses to competitions and tournaments in the two different sport disciplines are shown. Athletes in cross-country skiing had much greater expenses in competitions, and their expense rate was more even than ice hockey players. Travel costs and "others" represented a greater amount. Under "others" all the expenses of accommodation, used services of athletes and of equipment were included. The contributing values in cross-country skiing

were regularly higher than in ice hockey, which results in the overall expenses being more than four times higher in this sport discipline than in ice hockey. The lower expense ratio in ice hockey is explicable that relating costs being covered by the higher license fees in this sport.

Sport discipline		Competitions and tournaments (FIM/year)	Travel costs (FIM/year)	Food expenses (FIM/year)	Others (FIM/year)	Competitions and tournaments together (FIM/year)
Cross-Country Skiing	Mean	1341,18	2312,16	755,36	2272,00	4186,74
	N	17	37	28	20	46
Ice hockey	Mean	729,59	645,23	447,36	520,86	924,85
	N	97	107	129	76	294
Total	Mean	820,79	1073,54	502,29	885,68	1366,16
	N	114	144	157	96	340

Table 9: Expenses Connected to Tournaments and Competitions in Cross-Country Skiing and Ice Hockey

12.5. Training camps

The breakdown of the expenses connected to training camps was similar to the one at tournaments and competitions, in that cross-country skiing indicated higher expenses. Here training camp participation fees showed the greatest value, where the costs of cross-country skiing were around 50% higher than in ice hockey. It was interesting that again travel costs in cross-country skiing were four times higher than in ice hockey. In the other components there was no large difference between the expenses of the two sports. In cross-country skiing a large standard deviation was observed in reported costs. This is explainable with the necessity of travelling for early season training to the snowy Lapland from different parts of Finland. Food and other expenses at training camps contributed a smaller part of the total and those had a more moderate

distribution. Again the more moderate level of costs appeared in ice hockey because license fees covered some of these expenses.

Sport discipline		Training camps (FIM/year)	Travel to training camps (FIM/year)	Food in training camps (FIM/year)	Others in camps (FIM/year)	Training camps together (FIM/year)
Cross-Country Skiing	Mean	1834,40	1695,38	889,47	630,00	3246,19
	N	25	26	19	10	42
Ice hockey	Mean	1277,11	461,60	548,18	489,43	746,67
	N	97	53	22	35	275
Total	Mean	1391,31	867,66	706,34	520,67	1077,84
	N	122	79	41	45	317

Table 10: Descriptive Table of Expenses Connected to Training Camps

From Table 11, page 52, it is clearly visible that even at the lowest level of participation there were some expenses connected to training camps. It is interesting that no relationship was found between the change of level of participation or the change of age group and the change of expenses. In ice hockey the local level more than 35 years old athletes paid the largest amount, whereas in cross-country skiing the 19-34 years old top athletes did so. Participants from the youngest age group, 6-10 years old, had noticeable higher expense level in ice hockey than in cross-country skiing. In the second age group (11-14 years) the relationship was balanced, except at high level participation, where in ice hockey expenses still close to double as it was paid in cross-country skiing. Among 15-18 years athletes, however, in cross-country skiing high level athletes paid 12 times more, regional level athletes 3 times more than ice hockey players. In the age group of 19-34 years, a clear relationship was found between level of participation and changes in expenses, but in converse relation regarding the two sports. Cross-country skiers paid more, ice hockey players paid less together with the rising participation. This is due to the fact that in ice hockey in higher level of participation license fee also

higher, which covers the greater share of the lessening. In cross-country skiing the license fee does not cover training camp related expenses.

Mean

Sport discipline	Age group	Training camps together (FIM/year)				
		National or above	Regional	Local	Free-time	Total
Cross-Country Skiing	6-10 years	.	825	100	.	583
	11-14 years	1050	1108	50	.	965
	15-18 years	5375	1733	.	.	4535
	19-34 years	11080	1000	.	.	9400
	above 35 years	2000	0	.	900	950
	Group Total	6016	1113	67	900	3246
Ice hockey	6-10 years	.	967	728	760	864
	11-14 years	1900	850	241	833	824
	15-18 years	429	643	0	0	489
	19-34 years	60	250	.	2040	694
	above 35 years	.	.	5050	286	1344
	Group Total	450	803	810	881	740
Table Total		1928	824	745	883	1078

Table 11: Total Expenses of Training Camps in Different Age Groups and at Different Level of Participation in Cross-Country Skiing and in Ice Hockey

12.6. Equipment, Clothes and Accessories

Viewing the distribution of expenses by age groups participants from cross-country skiing reported noticeable higher amounts in any age group compare to ice hockey. In both sports 15- 18 years old, national or above level performing athletes had to pay the most and from the same age group the regional level athletes had to pay the second most. In cross-country skiing this amount was about four times higher than in ice hockey. Regarding the distribution of mean values by level of participation results shown a linear increase parallel to the rising level of participation. Taking, however, into consideration both variables Table 12 show that in the age groups of 11-14 years and 19-34 years old the

largest expense rose at regional level participation in both sports. The price gap between the cheapest and the most expensive segments was a little larger than 3000 FIM in ice hockey, whereas that was 16 000 FIM in cross-country skiing.

If we break the results down to different level of participation it became visible that how strongly equipment demanding these sports were. The inevitable protective equipment in ice hockey forces low level participants to make greater investment. In free time level expenses of equipment itself in ice hockey were close to double in size compare to cross-country skiing. In local level participation the expenses were in balance in the two sports. From regional level participation up expenses in cross-country skiing rose much stronger than in ice hockey, and at national level performance skiers had two and a half times higher expense on competitive equipment compared to ice hockey players.

Mean		Equipment together (FIM/year)				
Sport discipline	Age groups	National or above	Regional	Local	Free-time	Total
Cross-Country Skiing	6-10 years	.	2600	4300	800	2580
	11-14 years	5733	6509	2000	.	5800
	15-18 years	16960	14125	.	.	16150
	19-34 years	11340	12500	.	800	10000
	above 35 years	6750	8000	.	2000	5100
	Group Total		12850	7820	2767	1400
Ice hockey	6-10 years	.	1417	1355	1757	1438
	11-14 years	2550	2581	2850	1133	2563
	15-18 years	4384	3291	1233	3000	3872
	19-34 years	1967	2350	.	1792	2053
	above 35 years	.	.	1694	1000	1139
	Group Total		4070	2481	1772	1498
Table Total		6260	3024	1855	1484	3557

Table 12: Total Expenses of Equipment, Clothes, and Accessories in Cross-Country Skiing and in Ice Hockey in Different Age Groups and Different Level of Participation

Other equipment that was needed include jogging clothes, waxes and services for skis, and equipment for complementary sports such as roller skiing or

cycling. These expenses were at a moderate level and had a pretty even distribution in both sports. The higher performing athletes were in the most need for these. The costs of “equipment and clothes mainly for training purposes” had relative high share of the total costs of equipment among lower level performing athletes. This can be considered as normal, because these athletes have no separate equipment for competitive purposes.

12.7. Other Expenses

Among the other expenses in the questionnaire were listed books and magazines, fan expenses, health care and insurance expenses. These costs do not represent large amounts of the total expense. There were no high maximum values and mean was expressively low. Fan expenses had greater variance, which can be interpreted that athletes were not necessarily sports fans. In these two issues there were no disparity between the two examined sports disciplines. However, medical, health care and nutrition expenses in cross-country skiing were reported to be at a much higher level, while extra insurance is more expensive and more common for ice hockey players. Surprisingly, regional level sportsmen reported 52% of all insurance expenses. Local level sportsmen 28%, and national or higher level athletes represented only 13% in extra insurance.

Sport discipline		Books, magazines (FIM/year)	"Fan" expenses (FIM/year)	Health care, nutrition (FIM/year)	Insurance (FIM/year)
Cross-Country Skiing	Mean	223.93	466.67	956.06	235.00
	N	28	12	33	7
Ice hockey	Mean	281.16	508.78	611.13	340.92
	N	110	156	88	48
Total	Mean	269.55	505.77	705.20	327.44
	N	138	168	121	55

Table 13: Other Expenses in Sport

12.8.Changes in Expenses During the Past Years

Responses reported that expenses had increased slightly during the past years. Regarding the differences between cross-country skiing and ice hockey, it turned out that cross-country skiers were more likely to feel that their expenses had risen. Close to half of the reports from cross-country skiing announced that the expenses rose strongly and another great share of the participants feel that they rose slightly. In ice hockey the majority felt that expenses rose slightly, and an equal share reported no changes in the expenses and strong increase. Decreases were reported only from ice hockey.

Sport discipline		% of Total					Total
		Changes of the expenses in the past years					
		Increased strongly	Increased slightly	Steady	Decreased slightly	Decreased strongly	
Cross-Country Skiing	National or above	21,3%	19,1%	2,1%			42,6%
	Regional	25,5%	12,8%	4,3%			42,6%
	Local	2,1%	4,3%				6,4%
	Free-time		6,4%	2,1%			8,5%
	Total	48,9%	42,6%	8,5%			100,0%
Ice hockey	National or above	6,2%	11,0%	3,1%	,7%	,3%	21,4%
	Regional	9,7%	39,3%	9,0%	,7%		58,6%
	Local	1,4%	6,6%	2,8%	,7%		11,4%
	Free-time		5,5%	2,4%	,7%		8,6%
	Total	17,2%	62,4%	17,2%	2,8%	,3%	100,0%

Table 14: Changes of Price of Sport; Divided by Sports Discipline and Level of Practise.

From cross-country skiing close to half of the reports mentioned the noticeably more expensive equipment as the reason for the increase in expenses. This was followed by the transportation costs, the competition expenses and the rise of the general price level. In ice hockey, transportation and equipment expenses had grown the most. This was followed by the rent of ice rink or hall and the

competition expenses. The higher expenses of training camps and the increase of the license fees were still on the list as reasons for the more expensive sport. A small amount of the reports mentioned growth of the children as the reason.

Those, who succeed to decrease their sport-correlated expenses, mentioned voluntary work, "receiving more help from the club or sponsors" and the "recycling" of equipment.

12.9.Opinions About Expenses

More than half of the answers evaluated sport related expenses as rather high and 20% thought that expenses are extremely high. Another 24% saw them as being correct. A minority, 2.3% and 0.9% felt that sport is a cheap hobby. Not surprisingly, these results are reflections to those we received from the opinions of the changes of price of sport.

Suggested methods	Proportional share in cross-country skiing (N=43)	Proportional share in ice hockey (N=302)
More support from federation, club or sponsors	33%	30%
Decrease in price of the rent of ice	-	25%
Decrease in price of the equipment	33%	6%
"Travel community"	16%	15%
"Recycling" of equipment	10%	4%
Decrease of license and other fees	8%	9%
Larger share from lotto incomes	-	11%

Table 15: Methods Suggested by Participants for Decreasing Expenses

In cross-country skiing 80% participants reported that costs could be lowered somehow, in ice hockey 70%. The list was similar in both sports concerning the methods of how to decrease the related expenses. Greater support from club, federation or sponsors remained at first place. It was followed by the reduction of prices of equipment in cross-country skiing and of the rent of the ice rink or hall in ice hockey. Participants had opportunity to give five suggestions in the questionnaire, but they rarely used it.

12.10. Results on the Total Expenses

When a young athlete is engaged in sport the appearing total expenses show a rising tendency through the years. There are two reasons for this. First, the natural growth of the young requires the change of clothes, shoes, and equipment according to the change of the size of the body. Second reason is that parallel to the rise of the level of participation there is a similar required renewal of clothes and equipment to fit them to the appropriate quality level. In addition to the steep rise of price, the time of deterioration shortens because of the high frequency of usage.

Total expenses in sport were the highest at the age of adolescence (15-18 years) on higher level participation in both sports. In cross-country skiing this amount is close to double than in ice hockey. The four highest numbers were found in cross-country skiing at regional and national or above level participation in the age groups between 15-34 years. In ice hockey the same values were fallen into the groups of national or above level 11-18 years, local level older than 35 years, and regional level 15-18 years old athletes. Examining the same age groups in different level of participation, it was found that parallel to the level of participation the relating total expenses in sport are gradually rising in any age. Decreases in the rows appear in ice hockey at the

local level 15-18 years athletes and at top level 19-34 years age group; and in cross-country skiing at regional level, 6-10 years young athletes. The group total rows show that total expenses in sport strongly depended on the level of participation. The large amount of missing data obstructed a more detailed analysis considering the relationship of expenses to age or level of participation.

Sport discipline	Age groups	Total expenses in sport (FIM/year)									
		National or above		Regional		Local		Free-time		Total	
		Mean	N	Mean	N	Mean	N	Mean	N	Mean	N
Cross-Country Skiing	6-10 years	.		7154	3	7710	1	1100	1	6054	5
	11-14 years	19102	3	13692	11	4196	2	.		13519	16
	15-18 years	38760	10	36053	4	.		.		37986	14
	19-34 years	34006	5	22850	1	.		4800	1	28240	7
	above 35 years	15133	2	15135	1	.		5125	2	11130	5
	Group Total	32260	20	17713	20	5367	3	4038	4	21951	47
Ice hockey	6-10 years	.		7824	30	7156	19	6735	7	7461	56
	11-14 years	16535	2	11264	97	10508	9	8202	3	11215	111
	15-18 years	20658	50	14714	31	3950	3	8140	1	17753	85
	19-34 years	7450	6	10171	9	.		8269	6	8850	21
	above 35 years	.		.		15085	2	6094	8	7892	10
	Group Total	19149	58	11228	167	8259	33	7130	25	12143	283
Table Total		22727	82	11791	195	8018	36	6704	29	13585	342

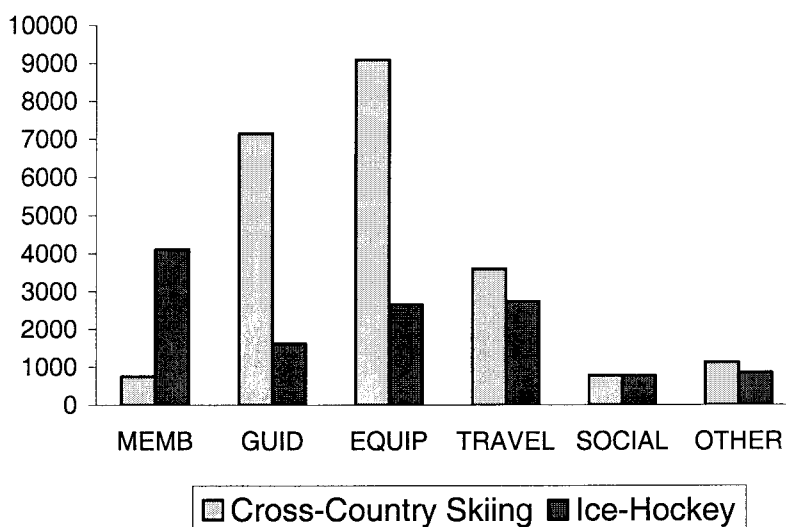
Table 16: Total Expenses in Sport According to Age Groups and Level of Participation

Interesting to see that in ice hockey at free-time level the required investments were even distributed in all the age groups and those were from six to one and a half times higher than in cross-country skiing. In cross-country skiing the expenses were gradually rising with the age. There is a minimum of expenses that are necessary, which one must pay for having the right to take part in her/his chosen sports activity. Maximum expenses, in contrast, much more depend on the financial welfare of the sportsman, than the definite necessities for the sport in question. In both types of sport there was a great difference between minimum and maximum values in expenditures at any level of practise.

When practising ice hockey the minimum requirements were relatively high, but the difference was moderate between the different levels of participation. Maximum values were very high and it is clearly seen that higher performance needs more investment.

In cross-country skiing the necessary investment was smaller for a free timer and local level skier, but at a higher level of participation expenses grew exponentially. In both sports it is clearly visible that there is a border for expenses at regional level participation. Above this border expenses rapidly grow. In lower level participation ice hockey required a higher investment from the sportsman, while at a more competitive level, cross-country skiing required more assets. For a general overview see Figure 9, where the comprehensive comparison of mean values in the different segments of expenses is shown. The meanings of abbreviations on the category axis are according to the applied theoretical framework from Taks (1984), which can be found on page 31 of this work.

Figure 9: Comprehensive Comparison of Total Expenses in Cross-Country Skiing and in Ice Hockey



13. Discussion

13.1. Introduction

Right at the beginning of the discussion, it must be stated that the results are valid in Finland at the beginning of 2001. This is important to emphasise because in international sport decisive events occurred during the competitive season 2000-2001. In cross-country skiing, as a result of the doping scandal in Lahti, the management of the national federation was replaced. In ice hockey the silver medal in the world championships was a great achievement, though a sour taste was left in the mouth knowing what drama had gone on on the ice. Consequently changes will come, which are at this moment still not visible. How these changes will affect the financial and economical aspects of the two sports only time will tell.

No doubt, the two chosen sports represent Finland's two very popular and very successful sport disciplines. According to their types, the two sports disciplines have differences but have the features, which are required for media-sport business. Amusement, drama, information (Dénes, 1997) are compressed into both of them. In the past season everybody in Finland experienced these. The two disciplines also fulfil the requirements of sport and recreational activity according to any description cited at the beginning of this work (Rodgers, 1978; European Sport For All Charter, 1992; Renson, 1997). In this sense the chosen sport disciplines are also representative, as at any level participants can point out their own goals, reaching achievements, and through this, can develop themselves.

13.2. Differences in Financial Structures of Cross-Country Skiing and of Ice Hockey

From the results it turned out that there exists a significant financial difference between the two examined sport activities (see Figure 9, page 59). Results reinforced the hypothesis that centralised management in ice hockey, which works on the common welfare, provides a higher level – economical – efficiency. The work of the central management effects primarily on direct costs. To utilise the advantages of the central management, participants must pay relative large obligatory fees at the beginning of their sport career, regardless of the level they are participating. In cross-country skiing participants being involved with a considerably lower investment, but this later reflects that current expenses rise much higher in this sport than in ice hockey. Among indirect costs, travel costs were effected the most by the mentioned work of central management. All other contributors of indirect costs are similar and show no difference in the two examined sport disciplines.

13.3. Determination and Comparison of Contributing Elements of the Total Expenses

13.3.1. Comparison of the Direct Costs of the Two Sports

Direct costs are determining in the contribution of total financial costs in both sports. The difference is that in ice hockey more investments are needed for the entry right when practising starts. This is because obligatory membership fees,

license and other expenses present the greatest share of direct costs in ice hockey. There is no way to avoid paying these fees, as they are preconditions of being registered in the game. The reason for this is that with coaching, and managing there is a need for a whole supporting administrative staff, without which a team does not exist. This personnel consists, for example, of a secretariat, a team manager, and a head coach. Nevertheless, the large license fee covers a lot. During the analysis of the results it was found that license fees have the largest share of the total expenses in ice hockey. Club management can determine the content and the amount of license fee. This resulted in ice hockey that clubs centralised into license fees many of the expenses, which would occur separately. The fee includes many elements of other direct costs, which show later in a noticeably lower level of expenses on coaching, training camp, and equipment and its maintenance. Through this the total expenses can be reduced. In cross-country skiing membership fees and licenses are at a very reasonable level. The other contributing elements of direct costs (guidance and equipment), however, are meaningfully higher compared to that.

Both cross-country skiing and ice hockey require proper equipment and clothing. Among the contributing elements of the total expenses of equipment the equipment itself represented the greatest share. Cross-country skiing is an outdoor winter sport where top performance strongly depends on the quality of the equipment, and the proper clothes provide more comfort to aid performance. For free time level participation, in practice, this is the only investment that has to be made. Other factors are that equipment often requires to be changed and that the maintenance of the equipment (e.g. waxing) is also very expensive at the top level. Parallel to the rising performance not just better quality equipment is needed but also its maintenance becoming more expensive. Proper clothing and equipment is essential in ice hockey too, for the protection of health, however, it requires very little maintenance. The necessity of this protecting armature requires a rather high investment in lower level participation too. The divergence of equipment costs between different levels of participation is not as large as in cross-country skiing.

Coaching and guidance expenses are lower, again, in ice hockey, because of the mentioned feature of the high license fees. Coaching expenses are also included. The team needs to be trained as a whole. The more players the coach serves the less proportional expense appear in any level of participation. In cross-country skiing coaching is not necessary up to a certain level, though it is worth it to have a supervisor to acquire the basic technique, and prevent injury. But for this there are plenty of volunteer coaches in this sport. Expenses rise later, when one is falling in love with cross-country skiing and the sport enthusiast feels the need for better technique, and more training. Coaching expenses also rise when one wants to progress in her/his competitive performance.

13.3.2. Comparison of the Indirect Costs of the Two Sports

With regards to the indirect costs the appearing difference in the contribution of travel costs is also the result of the differing financial structures between ice hockey and cross-country skiing. In both cases travel expenses represent the majority of indirect costs. In the case of ice hockey this consists mainly of regular transportation to and from training. The team covers the frequent travel to competitions and tournaments. Reports show low costs for this, because mostly these expenses are integrated into the license fee. Skiers have greater travel costs connected both to training camps and competitions. This is partly due to the fact that during autumn some skiers must travel several hundred kilometres to the snow.

The composition of the other two components of indirect costs - social expenses and other indirect costs - shows no significant difference between the two examined sports. The generally wealthier background of ice hockey players explains the slightly higher expense rate in ice hockey. These expenses are the less bound to the sport participation. Occurring expenses are much more a

question of personal taste, habit and financial position (see more at Taks, Renson, Vanreusel (1995)).

13.4. Expenses Risen in Different Levels of Participation

The following statement is valid for both cases: Expenses are strongly dependent on the level of participation. There is a board line of expenses at regional level participation, above which expenses rise sharply. This is due to two reasons. First, this level of participation already presumes that sports enthusiasts are in permanent and regular training, which in itself causes increased expenses. With the more intensive participation guidance costs rise, and there is a need for better quality equipment, which often needs to be serviced or changed. Secondly, indirect costs - primary travel, and health care and insurance expenses - also rise parallel to this. Some of the sportsmen clearly face financial difficulties, especially at this stage of their sport career, because expenses are already high, but still they have no chance earning any money from sport (Figure 5, page 17).

Due to the fact that fixed expenses are at a higher level in ice hockey, and accidental costs occur less often enables us to deduce that team sports have greater administrative service around the team. The inference is valid vice versa, that because of the existing administrative staff, fixed costs are high. The cause and effect is not important at this moment. As was discussed above, the administrative staffs deal with relevant questions around the team, which focus on travel, sponsorship or coaching, but they belong to the team. In other words, their work is needed and is unavoidable. Participants, however, in lower level cannot use most of the benefits of this administrative board. There is, for example, very small amount of sponsorship involved in lower level participation.

This results in a higher level of expenses for new entrants, which we can observe on the expense ratio for the lower level participation in ice hockey (Table 16, page58). At the same time beginners also have to possess the relative expensive protective equipment, which then endure long before it requires replacing. A high proportion of irregular expenses in cross-country skiing shows that there is a different type of financial structure. The main part of the total costs is connected to equipment and to the costs of guidance as training camps. This came about due to the fact that competitive cross-country skiing requires high-tech equipment, which requires regular service and often needs to be changed. The high costs of training camps rise, because of the need to travel to where the snow is, especially at the beginning of the season.

13.5. Comparison of Different Age Groups

Earlier it was described that the natural growth of the young athlete, the change of performance level, and the deterioration of the kit are the reasons of the need for new equipment. Among these the fastest change is the natural growth, when a young athlete is in the age of adolescent, 12-20 years old, depending on the biological maturity. This concentrates for a short period of time and the effect is stronger than seems at first glance. During these years most needs of the individual are rising. Parents are facing with larger educational expenses, greater food consumption, and new social expenses of the young. On top of these the teenager group is the most sensitive to the trend. In several cases the “need” of a new dress or equipment is solely the new mode. These details show how great a part parents take in the success of a sport career. The majority of expenses are rising in the age, when the athlete is still living together with the parents and have no or minimal personal income. In adult age, when the athlete already has some kind of income of work or sponsorship, the total expenses in sport participation decrease. The changes of total costs in different age groups

are not parallel in different levels of participation. The expenses of recreational sport are constant in any age group. The peak of expenses is on the highest performing level, naturally resulting that the differences are the largest in national or above level participation. The majority of athletes never become a top athlete and have no income from sport but the expenses. The few, who reach high level performance, might have return of the invested money (see Lämsä (1995)).

13.6. Ideas to Restrain Rising Costs

Ideas, naturally, have emerged to try to compensate for the increase of expenses. Many of the factors, which are influencing the total costs of sport participation, are connected to the general inflation and the rise of living expenses in general. These factors are out of the research area. The attempt, however, to restrain the rising expenses often succeeds. The research revealed some of the applied methods. These are the voluntary work for the club, the "recycling" of equipment, and forming "travelling communities".

The greatest majority of athletes are from the school age (see Table 4, page 44). Today in the educational curriculum the sport and physical education play a secondary role and its favourable impacts on young disregarded. When the sport activity is integrated part of the curriculum of a certain institute the travel and time adjustment problems are solved in once. Raising the amount of physical education hours provides both children with sufficient motion and supervised exercises on a particular sport technique for the sport club. The program is implemented in several countries and in different sports such as in the Netherlands in football, in Hungary in canoe, or in the USA in basketball. The examples also cover private and public educational organisations. During the implementation of the program, however, the general developing feature of

physical education should not be ignored. The method is known and also applied in Finland. Further development of this program with the participation of cross-country skiing and ice hockey would depress the connecting costs.

Travel expenses, especially in cross-country skiing, represent a remarkable share in the total expenses. This is partly due to the competition system that Finnish Championships are held throughout the winter in different locations of the country. In one weekend there are only 1-2 disciplines arranged out of the six contests in different techniques, distances, and relays. Today's practice has several advantages for the sport itself, such as the higher sponsorship attractiveness or the wider publicity through appearance in diverging locations of the country. Among the negative aspects, however, we have to count the rising travel expenses, because of the return journeys of the sessions. Another point is that accommodation also costs more. In any hotel it is easier to negotiate lower prices if the group (sport club) stays a week long as it would be the case at a complete championships. Lodging expenses appear in guidance costs among the direct costs of the sport. Out of these, event organisational expenses decrease too. It cost more to mobilise and set up all the necessary facilities – toilets, office, media stands, etc. – for several weekend events than once for a week.

In ice hockey the largest outlay in the sport participation is the license fee. This covers many expenses, which otherwise would appear separately and sum up a higher amount. These are for example travel costs to tournaments, insurance, coaching, etc. The high level of young player education ensures the permanent source of high level performance of the national team. In younger age, however, the nation-wide competition system does not necessarily provide more benefits compare to a regional based competition scheme, but generate expenses. The wide popularity of ice hockey provides sufficient participant team for a regional-wide championship. In this model clubs have lower level expenses connected to tournaments, which effects then on the decrease of license fee. This, however, is applicable also to cross-country skiing, where travel and accommodation costs would lower. Other part of the license fees goes straight to insurance

companies. Ice hockey is a full contact sport. The chance to be injured is high. Insurance companies adjust their price list to this. With the reform of the rules the game could be turned into a more technical and less power play. As soon as the number of injuries decreases insurance companies can reduce their charge too.

Further option to restrain costs is to make up an effective co-operation among event organisers in a region. A well designed seasonal event plan help to avoid that more events are arranged at the same time in the same sport. This prevents competition among organisers for participants, media attention, and also sponsorship support. Likewise, the “over-supply” of events results that attendance will decrease (see chapter 9.1, page 21). Examining the demand of the local population can help to set the optimal level of event-supply for the best result both organisers and participants.

14. Conclusions

The research revealed that there exists a significant financial difference between the two examined sports. From the contributing elements direct costs represent a substantial part of the total expenses. In ice hockey regular payments represent the greatest financial load on sportsmen while in cross-country skiing the current expenses are the determining. The fact, that direct costs representing the greatest part of the total expenses, shows that in competitive sports there is less possibility to restrain the total costs.

The money involved in sport is noticeably increased in the past couple of years. Worldwide, there is a changing process from voluntary based towards professional sport organisations, services. This change effects primarily on competitive sport and naturally brought that prices were rising. Cross-country skiing and ice hockey are two focused sports in Finland. This is why the process

was faster than in those sports, which are not so much in the public attention. The observed tendency, however, warns that price will soon increase in other sports too, which today are regarded as cheap. Together with the rising costs people with less welfare are excluding from competitive sport, which demolishes the equality on the field.

The costs of participation increased both in ice hockey and in cross-country skiing. Primary reason for this is the competition. The enhanced competition forces sport participants to use the latest technology in equipment, better coaching, proper medical services, optimal nutrition, and so on. On top of these seasons became longer, trainings, competitions are more often, and more travel required to keep in racing. Many of these contributing elements were breaking the limit where voluntary power is not adequate anymore. For example, it is difficult to find volunteer trainer for five times a week. Consequently services must be paid. These together then distinctly influence the total price.

It is also confirmed that expenses are strongly dependent on the level of participation and the age of the athlete. The highest costs were observed at high-level participation at the age group of 15-18 years old in both sports discipline. This rises further difficulties for those prosperous young athletes, who are living in less wealthy family. Teenagers cost more for the family in general, due to their fast changing body shape. In addition expenses are high on the field of education for secondary or higher level training too. No question where the cost-cut starts.

When participants detach from competitive performance the sport related costs are not as significant as it would withhold from participation. In free time level everybody adjust relating expenses to the own pocket and wishes. The participation in unorganised sport has no minimal costs. However, the broaden participation in unorganised sport forecasts that people, who switch to there will do less physical activity in general. In long run society will pay for this, through the loss of social benefits of sport (i.e. rising health care expenses, absent of work, etc) as earlier in this work it was examined. Nevertheless, management of recreational sports facilities are also forced to produce income and depress the

need of public funds. The official aim is not to produce profit but to reduce deficit. This pressure then results that new and more expensive services emerge, parallel with the vanishing of cheap services. Poorer people are less able to keep the pace with the new wind.

Cross-country skiers evaluate their sport as "extremely expensive" while ice hockey players more likely regard their hobby as "expensive" sport. That is because of two reasons. First, according to the collected data, ice hockey players are from more wealthy families. Even the same sum of sport related costs would represent smaller ratio in their whole monthly expenses. Second, cross-country skiing has a fast developing period behind. Equipment revolutionary changed, media became interested in, which intensified costing. The fast change feels and effects stronger. Beside the real monetary difference between the total expenses of the two sports, the higher socio-economical status of ice hockey players also weight their opinion.

Significant majority of participants in this research thought that costs could be lowered. During the research it was found that applied methods to retrain rising expenses are the voluntary work done in favour of the sport club, the "recycling" of equipment and the "travel communities", e.g. helping each other with transportation. Athletes and their parents believe that receiving more support from the federation, the club or sponsors, receiving a subsidised price for the ice rink or hall, and by making "travel communities" can lower costs. Several athlete and/or parents suggested that a higher proportional share from lotto incomes could decrease the costs in ice hockey. Expenses additionally could be lowered by more effective work on part of the management of sports clubs.

It is important to say that membership fees, license fees and other administrative costs are counted for twelve months in most sports. However, there are plenty of examples that athlete pursues two sports according to the season. For example cross-country skiers are often track athletes, ice hockey players often play football during the summer season. Besides this, many sports have two or three seasons in one year (e.g. out-door and in-door season). According to today's practice athletes paying fees also during those months,

when pursuing the other sports. The introduction of season or tournament cards, when athletes have right to compete in the definite season or the tournament could be help for those, who pursue more than one discipline. Existing good example the ice hockey – football co-operation and the “Sport pass”, which allows the owner to take part in different sport activities during the validity of the card. The more active co-operation between clubs, and co-operation with local government and of club members gives similar opportunity. The researcher furthermore proposes changes in competition system and in the rules of the games in the interest of lowering total financial costs.

On the basis of the research it is predictable that the volume of participation in organised activities in these sports, especially in cross-country skiing, will decrease. Total expenses in the examined sports rose strongly in a short period of time. This already makes the effect felt that children with less wealthy background drop out from participation of competitive sport. The real application of the objective of Finland’s sport policy – “advantages to children– adults can pay” – comprehends the opportunity to return to the ideal path.

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List of Tables

Table 1: Participants Expenditures for Selected Physical Recreation Activities in Canada in 1976 (Zalatan, 1981)	34
Table 2: Importance of Different Suppliers in Covering Expenses in Different Levels of Physical Activity in Finland (Puronaho, 2000)	38
Table 3: Distribution of Level of Practice and Frequency of Activities among Participants of This Research.....	43
Table 4: Distribution of Age among Participating Athletes	44
Table 5: The Distribution of the Income Level of the Families in the Two Sports	45
Table 6: Obligated Costs Paid to the Club or Federation in Ice Hockey	46
Table 7: Obligated Costs Paid to the Club or Federation in Cross-Country Skiing	47
Table 8: The Regular Travel Expenses in Cross-Country Skiing and Ice Hockey in Different Age Groups and in Different Level of Participation.....	49
Table 9: Expenses Connected to Tournaments and Competitions in Cross-Country Skiing and Ice Hockey.....	50
Table 10: Descriptive Table of Expenses Connected to Training Camps	51
Table 11: Total Expenses of Training Camps in Different Age Groups and at Different Level of Participation in Cross-Country Skiing and in Ice Hockey	52
Table 12: Total Expenses of Equipment, Clothes, and Accessories in Cross-Country Skiing and in Ice Hockey in Different Age Groups and Different Level of Participation	53

Table 13: Other Expenses in Sport.....	54
Table 14: Changes of Price of Sport; Divided by Sports Discipline and Level of Practise.....	55
Table 15: Methods Suggested by Participants for Decreasing Expenses.....	56
Table 16: Total Expenses in Sport According to Age Groups and Level of Participation.....	58

List of Figures

Figure 1: Meek's Model of the Sport Industry (Meek, 1997)	17
Figure 2: The Two-Sector Model of the Sport Industry (Li, Hofacre and Mahony, 2001)	18
Figure 3: The Curves of Demand and Supply.....	23
Figure 4: The "Total price" of Sport (Dénes, 1997)	25
Figure 5: The Relationship between Invested and Earned Money During a Successful Sports Career (Puronaho, 2000a)	26
Figure 6: Participation – the Social Filters (Rodgers, 1977).....	29
Figure 7: The Participation System (Rodgers 1977)	29
Figure 8: Consumer Expenses in Sport: a model (Taks, 1994)	31
Figure 9: Comprehensive Comparison of Total Expenses in Cross-Country Skiing and in Ice Hockey	59

Appendices

Appendix 1: English translation of the questionnaire, which was used in this research

Appendix 2: List of participating cross-country ski clubs by name

Appendix 3: List of participating ice hockey clubs by name

Appendix 1: English translation of the questionnaire, which was used in this research

WHAT DOES SPORT COST?

Questionnaire

The purpose of this research is to find out the expenses of practising sport 1) in different sport disciplines, 2) in different parts of Finland, 3) in different age groups (8-, 12- and 16-years add seniors), 4) in different sport clubs and 5) the changes happened in the past year in these expenses. The goal of the work is to develop club administration in the way that it reduces expenses and that it gives more attention to everyone than before. **We hope that you fill the attached questionnaire and you will return it to the trainer of children/juniors at one of the forthcoming practice times.** This research is financed, among others, by the Ministry of Education, Finnish Recreational-sport Federation, Finnish Sports Federation and 12 city and sport federations. **This questionnaire belongs only to that sport discipline, to whom it was sent.**

in Jyväskylä 1.5.2000

Kari Puronaho,
Researcher
University of Jyväskylä

Ilari Näckel
research co-ordinator
University of Jyväskylä

Background data

1. Age _____ and gender _____

2a. Size of the family

Adults _____, Children _____

2b. Total income of the family per year

() under 50.000 mk () 50-100.000 mk () 100-200.000 mk () 200-300.000
mk () above 300.000 mk

3a. Practised sport _____

3b. Lengths of practice (month/year) _____

3c. Amount of training, training or competition meetings (times/year)

4a. Sportsman's team/club, in which he/she pursues sport

4b. Actual level of competing or practising
() national level or above () regional level () local level () free time activity

4c. Other sports you practice

Compulsory costs

5. Membership fee
mk/year _____

6. License fee
mk/year _____

7. Insurance _____

mk/year _____

8. Monthly payments to the team / club

mk/year _____

9. Other compulsory costs

Reason _____;

mk/year _____

Travel expenses

10. Measure travel expenses you spend on sport practice.

ATTENTION! If you use your own car, count 1mk/km.

(Example 1: Distance from home to training 8 km, you have practise 200 times/year, and 1 mk/km, then = $2 \times 8 \times 200 \times 1 = 3200$ mk/year)

Private car

mk/year _____

Bus, train or other public transport

mk/year _____

Sum (mk/year)

Competitions, tournaments and training camps

11. Competition and/or tournament expenses, which are paid separately and do not included in license fee/monthly payments. (Total sum is important, but make it detailed if possible)

a) Competition and tournament fees (mk/year)

b) Travel costs (mk/year)

c) food expenses (mk/year)

d) Others (mk/year)

Sum (mk/year)

12. Training camps, which are paid separately, and are not included in license fee/monthly payments

(Total sum is important, but make it detailed if possible)

a) Training camps (mk/year)

b) Travel costs (mk/year)

c) Food expenses (mk/year)

d) Others (mk/year)

Sum (mk/year)

13. Pocket money/cash for competitions, for tournaments and for training camps

mk/year _____

Sport equipment and clothes

14. Officially compulsory competition equipment

mk/year _____

15. Officially compulsory competition shoes/clothes

mk/year _____

16. Equipment primarily used for practice

mk/year _____

17. Shoes/clothes primarily used for practice

mk/year _____

18. Other equipment or clothing expenses

a) Other, what _____

mk/year _____

b) Other, what _____

mk/year _____

Other expenses incurred by practice

19. Literature, news and video

mk/year _____

20. "Spectator sport" expenses

mk/year _____

21. Medicine and nutrition

mk/year _____

22. Extra insurance

mk/year _____

23. How have expenses changed in the past year?

1. Increased strongly ()

2. Increased slightly ()

3. Steady ()

4. Decreased slightly ()

5. Decreased strongly ()

24. Which expenses were increase in your opinion, what were the main reasons for this?

(1= remarkable, 2= second remarkable...)

1. _____

2. _____

3. _____

4. _____

5. _____

25. How can you reduce expenses, which were increasing through practising sport?

(1= remarkable tool, 2= second remarkable ...)

1. _____
2. _____
3. _____
4. _____
5. _____

26. In your opinion expenses, related to sport practice are: (mark in brackets)

1. Extremely high ()
2. Rather high ()
3. Correct ()
4. Rather low ()
5. Extremely low ()

27. Could expenses be lower in your opinion?

Yes () No ()

28. If expenses could be lower, how would you lower them?

(1= remarkable, 2= second remarkable ...)

1. _____
2. _____
3. _____
4. _____
5. _____

THANK YOU FOR REPLYING!

Appendix 2: List of participating cross-country ski clubs by name

Name of the cross-country ski club	Number of returned questionnaires
Haapaveden Urheilijat	1
Iisalmen visa	1
JHS	3
Joensuun Hiihtoveiko	1
Joensuun Kataja	8
Jämsänkosken Ilves	1
Kiuruveden Jänne	5
KontU	1
Kurikan Ryhti	1
Kymin Koskenpojat	8
Lahden Hiihtoseura	2
Lapin Veikot	2
Lohjan Louhi	1
MH	1
PHS-Allppi	1
Saloisten Salama	1
SalomSeura	1
Siilijärven ponnis	1
Tampereen Yritys	5
Vahdon Tuisku	1
No club name mentioned	1
Total	47

Appendix 3: List of participating ice hockey clubs by name

Name of the ice hockey club	Number of returned questionnaires
A-J	
APV	2
EJK	3
EPS	5
Espoo Blues	2
Espoon Kiekkoseura	3
Etelä-Portimo-72	2
Etelä-Vantaan Urheilijat	3
GrIFK	2
Harjavallan Ruutipoj	3
Heinolan Kiekko	2
Helsingin Kiekko Tiimi	3
Helsinki Rebels	1
HIFK	5
HPK	3
HT Tesoma	1
Hyvinkään Ahmat	1
IF Kraft	1
Iisalmen Pelikarhut	1
Ilves	8
Itä-Helsingin Kiekko	3
Jeppis Hockey	1
Joensuun Jokipojat	1
Jokipojat	7
Jukurit	1
JyP	23
Jyväskylän Hockey Cats	3
Jämsän Kiekko-Sudet	1
Järvenpään Haukat	3
Jäähonka	9

Name of the ice hockey club	Number of returned questionnaires
K-L	
K-ketut	1
Kajaanin Hokki	1
KalPa	6
Kanavan Pallo-80	1
Kangasalan Kisa	2
Karhu-Kissat	4
Kellokosken Alku	2
Kemin Lämärit	1
Keupa HT	1
Kiekko-2000	1
Kiekko-67	1
Kiekko-Ahmat	1
Kiekko-Karhut	3
Kiekko-Nikkarit	1
Kiekko-Reipas	2
Kiekko-Vantaa	5
Kiekkoseura Noux	2
Kiekkoympyrä-80	1
Koo-Vee	1
Kotkan Reipas	6
Kouvolan Kiekko-65	4
Kuhmon Kiva	1
Kurra Juniorit	2
Kärpät	9
Lapinlahden Luistin	1
Laser Ht	1
Lempäälän Kisa	1
Lluja	1
Lohjan Kisa-Veikot	1
Loimi-Kiekko	1
Länsimäen Kiekko	1

Name of the ice hockey club	Number of returned questionnaires
M-S	
Mätsälän Jää-Tiikeri	5
Nastolan Kiekko	1
Niiralan Old Stars	1
Nivala Cowboys	2
Novo Group	1
Nups-hockey	2
Oulun Kärpät	2
Oulunkylän Kiekko	1
Paimion Jääpulut	1
Panther Hockey Lahti	1
Pelicans	1
Perttelin Peikot	1
Pieksämäen Pallo-Sep	1
Pitäjänmien Tarmo	1
Porin Ässät	3
Porvoon Hunters	1
PUK	1
Rauman Lukko	2
Red Wings	2
Rovaniemen Kiekko	2
Ruutipojat,Harjavalt	1
S-Kiekko	10
SaiPa	11
Sallan Palloseura	1
Salo Hockey Team	8
Salon Palloilijat	1
Shakers	3
SHT	2
Sipoon Wolf	1
SR team	1

Name of the ice hockey club	Number of returned questionnaires
T-Ä	
Taivalkosken Kuohu	1
Tampereen Jääkiekkot	1
Tampereen Pyrintö	1
Tappara	4
Tarvasjoen Urheilijat	1
Team IFK	1
Tikkurilan Jääveikot	1
Tornion Ice Hockey Club	2
TPS	17
Turun Kisa-Veikot	1
Turun Toverit	2
Urjalan Sisukiekkot	1
Vaajokosken Pelikaan	1
Vaasan Sport Juniori	2
Vantaan Kiekko	1
Warkis	6
VG 62	1
Viikingit	4
Ähtärin Kiekko-Hauka	1
No club name mentioned	6
Total	295