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**Comparative typology about salmon angling as an attraction and interest in salmon rivers of Finnish Lapland and Kola Peninsula**

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The article examines the attractiveness of sport fishing salmon in the rivers of Finnish Lapland and the Kola Peninsula and the classification of such an exercise enthusiasts. To implement the research was gathered extensive experimental material – 1260 biographical form, describing the highlights of sport fishing experience. In processing the data factor analysis was used, where the main factors were considered anglers classification, based on their level of expertise, the success of fishing, fishing destination. Total 13 complex variables were generated and analyzed. The study was conducted on the previously proposed classification anglers (Hobson Bryan, 1977), specializing in trout. The study to 6 groups were added two more. The basic motivation cases such an expensive type of fishing have been found. Results of the study may be useful in forming a new toolkit for organizers of tourist business, in particular sport fishing, as well as specialists of forestry and hunting in terms of methodological approach, the development and validation of the various classifications using multivariate statistical analysis methods.

*Keywords:* catching salmon, fishermen, forestry, hunting.

**Introduction**

Salmon angling in streaming waters has already a steady position as a part of recreational use of nature and fishing tourism. Persons motivated in this field of interest are often considered mainly catch than nature oriented enthusiastic fishermen. Even if this holds true with many of the cases there still appears to be a lot of anglers with other motives while putting a fishing trip into practice. Those motives have an influence on the decisions of fishermen, when planning destinations of their fishing trips. The number of salmon fishing destinations has decreased in Finland during the last century, which has strengthened demands of sustainable use of the remaining salmon rivers. From the viewpoint of a salmon fisherman the situation means less suitable settings for their favorite interest as well as increasing congestion on best pools and more expenses for travelling and license fees.

Anglers have been categorized by several attributes during the past decades after Hobson Bryan made his well known classification with trout fishermen in 1977. A need for segmentations has been argued with a better understanding of a large and miscellaneous group with a variety of opinions about the subject. Bryan's presentation included also a theory (recreation specialization) about fishermen's specialization during their fishing career, which has been criticized during the last

decades in several articles. The paper on hand participates in the ongoing discussion with empirical study material from Finnish and Russian salmon rivers.

The theoretical background of the study bears upon the Bryan's fisherman typology, which has been changed by adding two more ideological fishermen types to the original category. The new groups are setting specialist and a composite type consisting of mixed features from the other types. Altogether there were 6 alternatives, which were chosen by the fisherman himself: 1) occasional fisherman, 2) generalist, 3) technique specialist, 4) technique and setting specialist, 5) setting specialist and 6) a composition from the previous ones. The study also seeks to give a statement to the theory of recreation specialization by comparing different fishermen groups with the startup of salmon fishing and several other attributes linked to fishing interest. Furthermore comparisons are made between the fishermen fishing on three different types of salmon rivers. According to the presumption each river represents a different kind of alternative among the available choices for the fisherman as a fishing tourist.

The study aims to give new tools for fishing tourism entrepreneurs and for the decision makers working with the development of salmon rivers in Finland. It will present an image of the salmon angler from the point of view of the interest in the first phase of the results. However, the emphasis of the study seeks to disclose essential features of salmon fishing destinations with opinions and attitudes of fishermen of the site.

#### **Research material and methodology**

This survey consists of empirical quantitative data material, which is composed from the inquiry made during 2003 and 2004 to the fishermen of Teno and Tornio Rivers in Finnish Lapland and to the anglers of Ponoï River in Kola Peninsula, Russia. The fishermen of Finnish destinations received the inquiry forms after the fishing season 2003 and totally about 1260 forms (approximately 50 % from both destinations) were returned. In Ponoï River the inquiry was made during fishing seasons 2003 and 2004 on site, where 50 fishermen altogether answered the inquiry. The study arrangements were fixed statistically to the different proportions of the study material. Nevertheless because of the statistical restrictions all the analyses used with other data portions were not able to be carried out within the data of Ponoï River. The study problems concerned in this comparative research are examined with sum variables composed by factor analyses. The attributes of interest are compared simultaneously between fisherman categories and fishing destinations with two-sided analyses of variance.

According to the study hypothesis fishermen types distribute in study destinations along their specialization level, whereby the most specialized anglers favor destinations with a qualified setting and a high catch probability all over. Respectively occasional fishermen and generalists are used to accept destinations defined with standard setting and less catch probability. The hypothesis proved to be true in destinations under examination. The next study question focuses on testing the theory of 'recreation specialization' with a few suitable features inherent for specialist fishermen. And in the third question I have aspired to find characteristic attractions

for salmon angling. Actually the results describe the main factors of the experience of salmon angling. In addition to the actual experience with rod in hands a successful angling trip includes a few background issues, which have to be taken into consideration. Those matters are related for instance with social companionship and the reference world in fishing site as well as with multiple services and fishing regulations at the fishing destination. The fishing environment composes an essential part of the experience and as it is built up with many categories it is divided into a few different sum variables.

### **Findings**

The distribution of salmon anglers into different fishermen categories was interesting particularly because of the findings from new fishermen types. Most of the anglers (35,2 %) considered themselves as generalists, meanwhile approximately every fifth angler felt the description of the new group - setting specialist - fitting best their attitudes and values as a fisherman. The attributes between this type and technique and setting specialists distinguish by the attitude to catch (the amount and species/origin not important) and by fishing method: the former is used to fish with several methods, whereas the latter mainly concentrates on one means.

According to findings the main motives of salmon angling were the challenge and excitement of fishing as well as the attraction of fishing at the setting of streaming water. Occasional fishermen and the anglers, who stressed the setting of fishing, were particularly allured by beautiful river landscapes. Instead the former along with generalists were not excited on streaming water fishing compared to the other groups. After the theory of meaningful experience (Elämys ABC 2008), experiences are a highly subjective matter and a meaningful experience can never be guaranteed. To achieve a meaningful experience one must possess interest, sensing and learning, which all can be linked to the fisherman's main motives. Through these objectives fishing trip has all the necessary prerequisites to perform a meaningful experience for the angler concerned. And even to the change of emotional life, which is the highest point of progression along the theory.

Traditionally in Finland catch has been taken to household's utilization when it concerns hunting or fishing. From this background catch and release -fishing is rather a new method in this country. So we don't have yet too much experience of the method, although it has already been used in some destinations. The opinions from the issue distributed evenly, with equal parts representing fishermen for and against the method as well as those, who couldn't compose their opinion. This finding was analyzed from destinations in Finland altogether. Separately compared there appeared a slightly more positive attitude in Teno River whereas in Ponoj the opinions proved to be clearly positive. Respectively the opinions about argumentation *catch can be taken along* indicated a pattern of the traditional way of utilization of catch in households.

The comparisons between destinations of the study were analyzed by performing sum variables from variables, which measure fishermen's attitudes and opinions about issues straight or indirectly linked to the fishing activity. Totally 13 sum variables were composed and analyzed with two-sided analyses of variance.

They can be regrouped into a few resembling categories which view emotional and physical aspects of the sport or a fishing trip in a wider context. The first is regarded with services, moving and living in destination. The other category deals with social factors of the fishing trip, where the sum variables represent the fisherman's social companionship in general and his special social interest during the fishing trip. The third entirety can be integrated from environmental factors and values like wilderness and setting (including landscape). Separately from those aspects the regulations of fishing, including the attitude to the catch and release –method and the amount and quality of catch are discussed.

The analyses of variance test a pattern, where the dependent (sum variable) is aspired to explain by independents (fishing destination and fisherman type). According to the model the findings indicate a statistically meaningful common impact with the different kind of services. Most of the sum variables have self impact to the model tested. The results mean that most of the sum variables are able to explain the pattern with their self impact in some extent; concerning four sum variables, the model can be explained with both destination and fisherman type. The best sum variable explaining the pattern was "Effortless fishing" with the destination F-value 82,16. It was also one with common impact. The highest F-value (23,63) of the fisherman types arose with the sum variable "Catch & release". In the former case a small but uniform difference in Finnish destinations can be found on Teno's behalf opposite to Ponoï, where these attributes were not appreciated. The same feature appeared in the latter case, when fishermen in Ponoï highly emphasize catch & release fishing, whereas in Finland they had more conservative opinions.

Findings showed that "Services appealed for convenience" with highest common impact value in the GLM model of variance analyses, are most appreciated in the Ponoï destination. Fishermen in Teno valued them higher compared to Tornio River except specialist types 3 and 4, who ranked them at about the same level in both rivers. Ponoï anglers paid clearly more attention to "Fishing services" meanwhile in Finnish destinations the demand was a bit higher among Tornio River anglers, which is a comprehensive result considering the young "reborn" history of fishing tourism of the river. The first finding looks quite alike with the sum variable "By-products of fishing" and the order between destinations conforms to fishermen's household's income, necessary expenses of fishing trip, and performed order of appreciation of the destination. Logical suggestions judging by these conjunctions can be presented as follows: fishermen expect more services, the wealthier they are or the more they have invested in a fishing trip. However, the observation doesn't concern specialist types 3 and 4 in Finnish destinations and the results of Ponoï are not quite reliable, which doesn't give permission to direct conclusions without added findings.

Social factors in a fishing trip were studied on two levels, by viewing the interest to participate in conversations with fishing peers at the fishing site and by investing consistence of favorite companion during the fishing trip. The interest for discussions with reference peers was slightly stronger within the anglers of Teno compared to Tornio ones. The observations refer to Bryan's findings as the interest emphasizes with specialist types 3 and 4. A fishing friend turned out to be the most

popular company during the fishing trip particularly amongst Tornio River anglers. Instead in Ponoï they preferred a group of friends. In Tornio River they are used to fish mostly by trolling with a rowing boat. This method can be done with least effort by a couple of persons, which explains the result. The significance of fishing company accentuated in Ponoï destination and perceived as less important in Tornio River, where they are also used to fish alone most frequently. The reason might be the distance of travelling to the destination, as fishermen of Tornio River make a much shorter fishing trip, particularly compared to the Ponoï ones.

The values of sum variables concerning fishing environment and the meaning of wilderness varied between the destinations, as the first mentioned was respected very highly in Ponoï River. In Teno River the setting values were ranked higher than in Tornio River to some extent. Instead wilderness values had quite similar assessments from all the destination groups with a slight more weight among Teno fishermen. Surprisingly wilderness attraction was not considered higher in Ponoï although the destination is located far away in pathless wilderness. Wilderness as a part of the fishing trip was most appreciated within technique and setting groups 3, 4 and 5. Although the regarded sum variables sound to be close to each other, they include some remarkable differences, which explain the changes observed in Ponoï findings. A finding about the differences between Finnish destinations indicates a slightly higher environmental and wilderness valuation of Teno fishermen compared to the peer group in Tornio River.

The salmon angler groups distributed clearly from each other by their opinions about the regulations of fishing in destinations. Groups 1 and 2 did not ascribe importance to regulations vice versa to the other groups. Perhaps those groups consider regulations partly unnecessary causing diminishing of catch. The other groups, to whom the interest of fishing is deeper, may be more worried about surviving of the stock (and for the future of their hobby), and thus have a more positive attitude of the fishing constraints. The attitudes were most positive in Ponoï, meanwhile the fishermen in Tornio River had less enthusiasm on the matter in every group.

An essential part of fishing regulations concerning recreational angling is catch & release fishing method, which is quite a usual method nowadays in fishing destinations around the world in spite of large criticism. The attitudes conformed to mainly the same tendencies as the fishing regulations above both between fishing peers and destinations. There was also a discrete question about whether to approve or refuse the use of the method. In Finnish destinations the findings were almost alike, when with approximately as many against and for the method. A slight majority (36 %) takes up a neutral attitude. Ponoï anglers have either a neutral or positive attitude – incidentally fishing tourism is based on this method at the site. Seemingly the issue will arouse a large discussion and distribute the opinions strongly as several justifiable opinions persist of the matter.

A question about origin of the catch ponders attitudes whether the origin – wild or planted fish – will have an effect on the allure of fishing. The answerers of Teno and Tornio Rivers had quite similar attitudes except group number 4, who had more critical opinions, as they also had about environmental and wilderness issues. The same effect appeared between the rivers, as the fishermen of Tornio River -

opposite to Teno peers - seemed not to be hindered, whether the catch was planted or wild. As part of salmon stock running to Tornio River may consist of planted salmon, the difference of opinions is apprehensible. Excluding occasional fishermen, the findings from Ponoï were most critical, which is also understandable considering both fishing site and also its marketing, and the answerer's origin – quality-conscious international anglers.

Another factor connected to the attraction of catch is a certainty to catch a fish. This seems to be of great concern to the anglers of Ponoï River, meanwhile in Finnish destinations the issue is not so important, while the opinions of the peer groups are quite similar in both rivers except the group of technique specialists. International fishing clients appreciate certainty of catching fish, and preferably a big one, which is rather self-evident after the costly journey.

### **Discussion**

After Bryan introduced his model based on the theory of recreation specialization in 1977, it has been practiced in several studies largely within nature recreation activities. According to the theory specialization is a lifelong process, which can be estimated by the development of attitudes and commitment to the sport. By this inquiry it was not able to follow development of fishing interest of the anglers. However, it is possible to compare the ideal fishermen types with each other by asking them the starting time of their fishing hobby and also, considering their opinions about the importance of the sport and time spent around it. The comparison substantiates slightly the recreation specialization development after Bryan with restrictions. Most distinctly this can be noticed within the results from technique and setting specialists. On the other hand the finding is notable, because the last phase of Bryan's continuum theory of recreation development emphasizes specially the quality of setting and its rising value for the fisherman.

A majority of occasional fishermen made their first trials on fishing later than other groups and thus it is possible for them to get further development – or stay on the phase of continuum they are. However, as a remarkable portion of anglers did not get close to the ending part of the continuum even with a long career of recreational fishing, this result affirms the idea that only part of the fishermen will develop in their interest due to continuum theory, which leads to quality-conscious setting stressing specialist at the end of the process. The results were statistically meaningful ( $p < 0,001$ ) and comparable in both Finnish study areas. They give support to the findings of Scott and Shafer (2001) as they also found similar observations.

The attraction of recreational fishing is based on a meaningful experience, which is composed from the fishing activity itself and from diverse composition of different factors, particularly nature and setting. According to Tourism and Experience Management Cluster (2008) a positive and powerful emotional response to a unique experience may lead to an experience of personal change, bringing about fairly permanent modifications to the subject's physical being, state of mind or lifestyle. Through a meaningful experience, one can adopt a new hobby, way of thinking or find new resources within oneself. This definition suggests Bryan's theory of recreation specialization, the end of the continuum process. Will this

come true with the fishing hobby? How deeply can fishing be experienced and what kind of enjoyment does it perform? This needs to be studied more and it will not become clear in this study, but impressive experiences are within reach anyway.

The most important motives for salmon fishing appeared to be the challenge and excitement of fishing. Another fundamental reason for quite a few anglers was fishing by streaming water on the whole – among generalists and occasional fishermen less than the other groups. Beautiful river landscapes allured specially occasional and setting emphasizing fishermen and thus the results adhered to logical frame of ideal fishermen types. As the classification was made by a self-estimate after a short type description, there was apparent doubt about reliability of the assessment. After perceptions come about there are a few doubts about failure classification, for example as an occasional fisherman tends to fish several times a month. However, logical findings in most cases prove that self-estimation is a reliable way of classification, when the alternatives are explained well enough.

The ideal typology of fishermen used for the first time by Bryan (1977) among trout fishermen, was tried out also in this study with the small modification mentioned above. By characterizing the types generally it can be stated, that occasional fishermen upon their designation are used to fish irregularly and to whom fishing seems not to be the main focus of the fishing trip. They are also interested in multiple services, easy fishing and convenience. Generalists, who composed a major group with 35 % of the answerers, as well as the previous one, disagree about catch & release fishing and restrictions of fishing. They also prefer easy fishing as well as convenience (with exceptions), and also appreciate certainty of catch.

Technique specialists are close to the group of technique and setting specialists. Most fly-fishing anglers belong to these groups in Teno and Ponoï Rivers. They appreciate social factors in fishing more than other groups – especially technique ones. They also emphasize fishing regulations and take a positive attitude to catch & release fishing. The findings says that they don't need so much fishing services in Finnish destinations and are more prepared to make the effort for the interest. Fishing attraction of the latter group 4 is reduced clearly by planted catch. Setting specialists are close to the previous, group number 4, with rather close attitudes about wilderness and environment values. They are interested in fishing services, but less interested about catch certainty, although with negligible difference to other groups. Opposite to technique types the anglers of this group are not interested about general sociality with peer groups – instead they enjoy the company of a friend or a group. The last group of ideal type is a mixture of other groups, what effected problems in several analyses. In Finnish destinations results of a group turned in many cases to a different direction because the combination of ideal types didn't weigh equally.

The comparison between ideal types is generalized, because there appeared a variation from destination to another between groups. For this reason only a few arguments can be stated and even they are not definitely reliable in all the destinations. On the whole a few advantages were reached by using a model of six ideal types instead of four as Bryan (1977) did. He mentioned (1977, 184), that the typology he used was not necessarily satisfactory for all purposes, and as in many other

studies later on, the typology has got several modifications. In this study there was an intention to develop the existing model to distinguish better the environment values of recreational fishing – particularly in salmon fishing. The other purpose was to give more alternatives for the fishermen to find the best fitting ideal type – and to achieve new results from the diversity of the multi sensing interest.

Salmon angling is regarded as an interest, which arouses passionate mental images among anglers with strong commitment to the interest. Some fishing methods demand also technical skills and special gear. For that reason this typology will probably not work well with conventional recreational fishing, at least the distribution of ideal types will be quite obviously different.

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### **СРАВНИТЕЛЬНАЯ ТИПОЛОГИЯ ЛОВЛИ СЕМГИ С ТОЧКИ ЗРЕНИЯ ПРИВЛЕКАТЕЛЬНОСТИ СЕМУЖЬИХ РЕК ФИНСКОЙ ЛАПЛАНДИИ И КОЛЬСКОГО ПОЛУОСТРОВА**

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В статье рассматриваются вопросы привлекательности спортивной ловли семги в реках Финской Лапландии и Кольского полуострова, а также классификация любителей такого занятия. Для реализации исследований был собран большой экспериментальный материал – 1260 анкетных форм, описывающих основные моменты спортивной ловли семги. При обработке данных был применен факторный анализ, где в качестве основных факторов были использованы: классификация рыболовов, основанная на уровне их специализации, успешность и назначение ловли. Всего сформировано и проанализировано 13 комплексных переменных. Исследование проводили по ранее предложенной классификации рыболовов-спортсменов, специализирующихся на форели.

В результате исследования к шести группам были добавлены еще две. Выявлены основные причины мотивации такого затратного вида рыболовства. Результаты исследования могут быть полезны при формировании нового инструментария для организаторов туристического бизнеса, в частности, по направлению – спортивное рыболовство, а также для специалистов лесного и охотничьего хозяйства с точки зрения методического подхода, разработки и подтверждения различных классификаций с использованием многомерных статистических методов анализа.

*Ключевые слова:* ловля семги, рыболовы, лесное хозяйство, охота.

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