

THE POTENTIAL INFLUENCES OF CLIMATE CHANGES ON TOURIST DEMAND IN WINTER SPORT CENTRES IN SLOVENIA

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ABSTRACT The article deals with the potential influences of climate changes on tourist demand in selected winter sport centres in Slovenia. By using the method of inquiry we tried to ascertain how skiers perceive climate changes and what their potential responses are.

The results of the survey, which was carried out according to König's example (1998) in four winter sport centres in Slovenia in the winter 2004/05, showed that climate change would have a great influence on the structure of tourist demand and the frequency of visits. The loss of half of the present skiers would mean an enormous loss of profits and a majority of ski centres (mostly smaller and middle size ones) would probably stop operating.

The factors which would, in the case of snow deficient winters, influence the skiers' decision about where to ski the most would be arrangement of ski tracks, possibility of artificial snow-making, ticket price, remoteness of a ski centre and catering and hotel offers. A slightly less important factor would be the aesthetic attractiveness of a ski centre.

Seasons with less snow cover could, to a certain extent, be improved through additional/supplementary offers, but this will not replace the winter sport activities.

According to the results of the survey, skiers in Slovenia are well acquainted with climate change and are well aware of the potential consequences. But conversations with the people who are responsible for the development of winter sport tourism in Slovenia have demonstrated that they are much less aware of climate change than skiers.

KEYWORDS: *Climate changes, tourist demand, winter sport centres, Slovenia*

INTRODUCTION

Climate change and the corresponding changes in snow cover which are required for winter sport tourism definitely influence tourist supply and they will also influence tourist demand. Namely, tourists will, to a certain extent, get used to climate change. However, there will also be changes in their travelling motives and thus also in travelling habits (König, 1998).

Since tourism and recreation represent voluntary activities, it is very important to know how tourists perceive climate change and how, in their opinion, travelling habits might change in

case of climate changes. This knowledge is crucial in predicting the influences of climate change on tourism.

Therefore, the main aim of the study was to find out how skiers in selected ski centres in Slovenia perceive climate change, and what their potential responses to climate change were.

To my knowledge, thus far, at least two studies on the perception of climate change by skiers were carried out (Bürki, 2000).

In the winter of 1996, König (1998) carried out a survey in the three biggest ski centres in Australia. The results show that climate change will have a significant influence on the structure of tourist demand and the frequency of visits to Australian ski centres.

Another survey was carried out in the winter of 1996/97 in ski centres in the cantons Obwalden and Nidwalden in Switzerland (Bürki, 2000). The results show that in Switzerland climate changes will also lead to dramatic changes in tourist demand regarding winter tourism.

METHODS

This research was carried out according to König's example, but his questionnaire was slightly adapted to Slovene conditions. In this way the results of our research can be compared to the results of the previous studies (König, 1998, Bürki, 2000).

Due to temporal and financial limitations, the survey was carried out only in four ski centres in Slovenia, which are appropriate for beginners as well as for advanced skiers. The ski centres included into the research also had to be located at different altitudes. On the basis of these criteria the following centres were selected: Kranjska Gora (758 m - 1570 m / 1623 m), Rogla (1069 m - 1512 m), Vogel (569 m / 1309 m - 1795 m) and Cerknjo (938 m - 1294 m).

The targeted population were skiers, snow-boarders and cross-country skiers in winter sport recreation centres in Slovenia. Since there are no data on this population, it was impossible to form a statistically representative sample. Therefore, the results of the survey yield information valid only for the selected winter sport recreation centres. However, some results they provide may also be valid for the other ski centres.

The survey was carried out, according to König's (König, 1998) example, in front of catering facilities or inside the catering facilities in the selected ski resorts.

The survey was carried out with the method of approaching the visitors. Questionnaires were personally distributed amongst visitors. After a short explanation of the topic they were given a few minutes to fill in the questionnaires and then handed them back to our interviewers. Due to direct contact between the interviewers and the interviewed skiers, the latter were much

more motivated to cooperate than they would have been without such a contact. One of the most important reasons for the use of this survey method was a very fast way of gathering a large number of filled-in questionnaires. However, the down side of it was that the questioned skiers were careless with certain questions and did not complete the questionnaire in a completely right way, which is why the results for certain questions differ.

In each ski centre the survey was carried out twice; during the week and at the weekend. The survey was carried out in the week from 28.2.2005 to 6.3.2005. It would be ideal to carry out the survey during peak season at the end of January or in February, but due to organizational difficulties this was impossible. Nevertheless, it should be noted that the winter 2004/05 was not an average winter because it started rather late (in the second half of January).

RESULTS

Within the scope of the survey we managed to get 855 filled-in questionnaires. 51,4 % of the interviewed persons were men and 48,6 % were women.

Question 4: If there is enough snow, do you ski/snow-board also in spring? (N = 851)

Slightly more than a half (62 %) of the questioned skiers also ski in spring. This confirms the observations that the abundance of snow or a long-lasting snow cover appropriate for skiing do not assure a great number of skiers, as many of them do other activities in spring (for example, cycling, walking, gardening...). Besides, the majority has already spent all savings meant for skiing activities.

However, in recent years in Slovenia the ski season started rather late (in January). Therefore, we wanted to know whether, in the case of a continuation of this trend, skiers would change their skiing habits and go skiing also in spring. Therefore, another question was asked.

Question 5: In recent winters the ski season in Slovenia started rather late (January). If in the future ski season started at the end of January or in February, would you start skiing/snow-boarding also in spring (in March, April, May)? (N = 318)

More than half of the skiers (58,5 %) who currently, even in the case of sufficient snow cover do not ski, think that in the future they would adapt to the late start of a ski season by skiing also in spring.

Question 6: If you knew that the next five winters would have very little snow, how would this influence your decision on if and where to ski/snow board? (N = 836)

If there was insufficient snow cover in winter slightly more than a fourth (28,2 %) of the questioned skiers would still ski in Slovenia, and as often as they currently do. One quarter (25,4 %) would still ski in Slovenia but less frequently. Most questioned skiers (42,2 %) think that instead of in Slovenia, they would ski/snow-board elsewhere, and only 2,9 % of the questioned persons stated that they would stop skiing.

A χ^2 analysis showed that it would be mostly skiers with elementary and intermediate skiing skills who would ski in Slovenia. On the other hand, very good skiers, who are usually also more demanding, would more frequently decide to ski in other countries. Skiers with elementary skiing skills are most likely to stop skiing.

As for the type of activity performed, cross-country skiers represent a special group. Namely, the majority (80 %) would still ski in Slovenia (30 % as frequently as up to now, 50 % less frequently). This is probably the result of the special character of cross-country skiing. Namely, this activity can be performed even if the snow cover is not very deep (10 to 15 cm). The χ^2 analysis showed that the persons who remain in Slovenia for skiing tend to have a lower income, whereas almost half of the skiers with an above average income (47,7 %) would decide to ski abroad. In addition, the skiers that stopped skiing tend to have a lower income.

It was assumed that in the case of winters with the lack of snow it would be mostly Slovenes and Croatians who would ski in Slovenia, but this assumption was only partly confirmed. The analysis showed that there is a statistically significant relationship between the variables but results do not confirm that Croatians are more loyal to Slovene ski centres in comparison with other foreigners.

Question 7: If you kept on skiing in Slovenia even in the case of winters with very little snow, would you plan more shorter trips to ski centres (a day or a weekend) or longer holidays in a selected winter-sport centre?(N = 557)

The skiers who will continue skiing in Slovenia even in the case of winters with a lack of snow tend to undertake more one-day trips than longer holidays. 75 % of the skiers stated that they would make shorter trips more often.

Question 8: How important would be the following elements at your decision on where to ski/snow-board if winters with very little snow continued?

Table 1: The importance of individual elements for skiers' decision on where to ski/snow-board if winters with very little snow continued

ELEMENT	NUMERUS	IMPORTANCE		
		unimportant	important	very important
possibility of snow-making	807	10,4	22,4	67,2
ski-ticket price	811	7,8	24,7	67,6
arrangement of ski tracks	801	3,0	17,6	79,4
interesting night life/a lot of entertainment performances/events	802	36,1	39,0	24,9
activities which are not connected with snow (for example, sport halls, fitness etc)	790	38,9	44,7	16,5
possibility of trips	799	42,2	43,2	14,6
aesthetic attractiveness of a ski centre	800	14,0	35,6	50,4
remoteness of a ski centre	794	9,1	35,8	55,1
catering-hotel offer on the ski ground or near the ski ground	798	9,3	39,1	51,6
information on weather and snow conditions on the ski ground	801	11,6	37,3	51,1

The answers on the importance of the possibility of snow-making clearly show that it represents one of the most important factors that will influence the skiers' decision on where to ski in the future. Therefore, assurance of reliable snow cover appropriate for skiing will be very important. This means that, due to the location of ski resorts at low altitudes, all ski centres in Slovenia should consider artificial snow-making. As expected, the possibility of snow-making would be more important for better skiers, who are also more demanding.

The decision on where to ski in the case of winters with a lack of snow would be crucially influenced also by ski ticket prices. This is an additional problem that ski centres will have to cope with in the future. Snow-making will be very important in the future and this brings with it very high additional costs. Consequently, ski ticket prices in ski centres with intensive snow-making will definitely increase. On the other hand, ski centres located at high altitudes, where snow making will be minimal or will not be necessary at all, will be able to offer more competitive ski ticket prices.

One of the most important factors would also be the arrangement of ski tracks. Besides, the remoteness of a ski centre would also have an important influence on the decision regarding where to ski in the case of winters with a lack of snow. Therefore, it can be predicted that, even in the case of climate change, Slovene ski resorts will still attract a big share of skiers from Slovenia and the neighbouring countries (especially from Croatia and Hungary).

It is worth to mention that the variable 'remoteness of a ski centre' is not correlated with average net monthly income nor with skiing skills.

High quality catering-hotel offers also represent an opportunity for winter-sport centres in Slovenia.

The results on the elements of additional/supplementary supply show that seasons with less snow could to a certain extent be improved by this type of supply.

It was ascertained that interesting night life and entertainment events would be most important to snowboarders and also skiers, but cross-country skiers are less interested. With a reason for this is the age of skiers. Namely, snow-boarders are mostly of young ages. Parties and night life are definitely more important to them than to older skiers.

Activities which are not dependent on snow are more important to skiers with higher incomes. This probably reflects the pretentiousness of wealthier skiers and their capability to afford such additional activities.

Considering the data in table 1, the possibility of trips does not represent an important factor that influences the decision of skiers as to where to ski. On the other hand, aesthetic attractiveness of a ski centre would have an important influence.

Results of the survey show that information on weather and snow conditions in a ski resort are important. Therefore, information services, such as snow phone and daily internet information on snow conditions are definitely welcome, especially for day-trippers.

Question 9: Have you ever heard of climate changes (warming of the atmosphere, higher temperatures, less snow...)? (N = 850)

This question was answered in an affirmative way by 786 of the questioned skiers (92,5 %), which means that skiers are very well familiar with this issue.

As expected, it turned out that familiarity with climate change is statistically significant connected with age. The youngest (below 19 years old) and the oldest (60 or more years old) are least familiar with this issue.

Question 10: Do you think that global warming resulting from the increased green house effect could threaten skiing/snow-boarding in Slovenia? (N = 843)

Two thirds (68,4 %) of the questioned skiers believe that global warming could threaten skiing/snow boarding in Slovenia. This result shows that a significant percentage of skiers are aware of the threat posed by climate changes to winter-sport recreation and tourism in Slovenia.

DISCUSSION

The results of the survey carried out in four winter sport recreation centres in Slovenia in the winter 2004/05 show that climate change would have a great influence on the structure of tourist demand and the frequency of visits. If, in the future, the so called ‘green winters’ continued, or if they occurred more frequently, Slovene ski centres would lose almost half (46,3 %) of the visitors (42,2 % would ski elsewhere and 2,9 % would stop skiing). Only 28,2 % of the questioned skiers would still keep on skiing in Slovenia as often as they do now and 25,4 % would still ski in Slovenia but less frequently.

When analysing the results we need to be aware that also those skiers, who stated that they would ski abroad in the case of climate change, would at least occasionally still ski in Slovenia because of the closeness of Slovene ski centres.

Nevertheless, the loss of half of the present skiers would mean a huge loss of profit and the majority of ski centres (especially smaller and the middle-size ones) would stop operating, since the lack of snow results in a lack of profits.

It turned out that the skiers that would ski abroad are mostly good skiers, which would mean an additional disadvantage for Slovene ski centres, as they represent visitors who ski most frequently and who also spend most money. Similar conclusions were drawn also by König (1998) and Bürki (2000).

Cross-country skiers would keep on skiing in Slovenia. They represent a relatively small percentage of visitors of winter-sport recreation and tourism centres. However, it is possible that this activity will become more popular and widely spread in the future. The reason for this is the lack of snow for alpine skiing and lower prices.

Factors which, based on the skiers’ responses, have the greatest influence on the decision about where to ski in winters with a lack of snow would be the arrangement of ski tracks, the possibility of snow-making, ski-ticket prices, remoteness of a ski centre and catering-hotel offer. Less important is aesthetic attractiveness of a ski centre.

Well maintained ski tracks and modernization of the existing infrastructure will be crucial to the economic survival of ski resorts. Besides, snow-making will become a necessity, which means that many ski centres will find snow-making inevitable. This is naturally connected with additional costs and higher ski-ticket prices, which has a negative influence on tourist demand.

A number of Slovene ski centres have not yet fully utilized the possibilities regarding accommodation capacities and catering services, which, according to this survey, are important to visitors of winter-sport centres.

The results of the survey show that the elements of additional offer would have a minor influence on the decision of skiers as to where to ski in winters with less snow. However, it is very likely that the questioned skiers gave the answers to the hypothetical questions considering the conditions at present, travelling motives and trends, which are subject to change. They can be very easily influenced by the media and tourist brochures, which will in the future have a very important influence on the survival of individual tourist products and the introduction of new ones. As a matter of fact it is very difficult to provide the answer to the question on how visitors would actually react in changed conditions before the influences of climate change become obvious. Therefore, the results of our survey represent only potential reactions.

Results of the survey show that skiers are very familiar with the issue of climate change. Namely, 92,5 % answered that they have already heard of climate change. With regards to the perception of climate change it has been ascertained that two thirds (68,4 %) of the questioned skiers believe that global warming could threaten skiing/snow-boarding in Slovenia. However, tourism operators are much less aware of this problem as are skiers.

The results of the survey cannot be considered as a prognosis of ski tourism in Slovenia in the case of climate change but they indicate that climate change would have a big influence on tourist demand, which would (have to) trigger important influences on the planning and development of winter-sport recreation centres in Slovenia.

One of the best adaptation strategies would definitely be the development of whole-year tourism. Namely, climate change does not represent just a threat to mountain tourist centres in Slovenia but also provide opportunities for further development.

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