

# Innovative cable-cars and ski-lifts in Western Austria - their diffusion and impact on mature alpine tourism markets

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## Introduction

Cable-cars and ski-lifts are among the most important high-tech developments in large areas of the European Alps, especially in high alpine environments without further intense human influence. Their construction and the use of ski slopes by millions of tourists every winter have a clear negative impact on the sensitive high alpine environment (Veit 2002). However, ski tourism is the dominant economic factor in many alpine valleys (Berwert et al. 2002). Every season ski resort operators invest heavily in their core infrastructure - in Austria they spent more than EUR 250 million for new cable-cars and ski-lifts in 2007/08 (Mayer 2009). Although innovation is often characterised as a critical factor for success in tourism (Hall & Williams 2008), the effectiveness and importance of innovation in tourism is difficult to quantify and has seldom been analyzed. The following research questions are raised:

- In what manner did the quantitative and qualitative diffusion process of innovative cable-cars take place in Austria?
- What importance do innovative cable-cars have for the development of successful winter sports destinations?

## Research design

All existent Austrian cable-cars have been compiled in a database. For each of the identified innovative types of cable-car, a ranking list is provided. With every year following the first adoption of a particular type of cable-car, a higher rank is assigned to the respective destination. Only the first adoption of a type in a municipality is considered. In order to relate the socio-economic characteristics of destinations to their innovativeness, a second database is needed. This database contains the ranking lists, data on ski tourism infrastructure and tourism statistics (until 2007/2008). In order to explain the long-term success of a destination the ranks are added up for all analysed innovations and are divided by the number of innovations implemented in each region. This accumulated innovativeness ranking gives the average rank of a destination over the complete time period. For the identification of groups of similar adoption behaviour, Rodgers' (1983) conception of adopter categories is applied. For details see Mayer (2009).

## Results

(Add 1): The structure of the Austrian cable-car system has undergone profound changes over the past decades. The cable-car capacity increased by more than 3.5 times between the seasons 1974/75 and 2007/2008 (+263%). At the same time, the mean capacity of newly built cable-cars rose from 1,120 to 2,200 persons per hour. Underlying a linear trend, the share of express cable-cars increased from 10.5% to 91.7%. The following tendencies can be confirmed empirically (Mayer 2009):

- Quantity: (a) Total number of cable-cars and ski lifts is declining, but the number of chairlifts and gondolas is increasing. (b) Mean capacity per cable-car and overall capacity are rising strongly.
- Quality: The Trend towards more comfort, less waiting time (increased capacities), and more time for skiing (shorter lift-time).

(Add 2): The second Schumpeter hypothesis posits that big companies are more innovative than small ones (Orfila-Sintes et al. 2005, Sundbo et al. 2007). Due to a strong negative correlation at a

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very high significance level (Spearman-Rho -0.727,  $p < 0.001$ ) between innovativeness and size of the ski resort (measured in cable-car capacity), the hypothesis cannot be dismissed. A comparison of means combined with an analysis of variances (ANOVA) between the adopter categories, reveals at a high significance level that the resorts of innovative destinations are bigger, better equipped and more modern; . The early adopters are more successful in the long run with higher occupancy rates and better accommodation facilities. Between success in tourism and the innovativeness of the cable-car system, there is a highly significant negative correlation of medium strength (Spearman Rho -0.509;  $p < 0.001$ ). The direction of causality between the correlated factors remains unclear (Rogers 2004). To evaluate the influence of innovativeness on tourism success, several regression models were tested. Results suggest that the relative success of tourist destinations cannot be explained sufficiently by the technical innovativeness considered in this study.

## Conclusion

To succeed in winter tourism, it is not sufficient to invest in the cable-car infrastructure. The overall consumer package has to meet the increased level of expectation of experienced customers. Cable-cars kept up-to-date by innovativeness are only one part of the service-chain. Modern cable-car systems are a constitutive basic factor of ski tourism that is taken for granted by the guests, just as the guaranteed technical snow reliability via the use of snowmaking at a certain size of ski resort. Nowadays, cable-cars do not represent a point of attraction per se, because incremental innovations become established too quickly as almost ubiquitous industry standards. However, particularly innovative and unique cable-cars generate added value for guests and operators, which permits the marketing of the transport itself as a special experience.

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