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# Determining Factors of Mountain Destination Innovativeness

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## Determining Factors of Mountain Destination Innovativeness

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## ABSTRACT

A rapidly changing business environment is forcing destinations to innovate in order to remain competitive. Innovation is increasingly recognized as being important for destination development (Weiermair, 2003; Volo, 2005; Zach & Fesenmaier, 2009; Haugland, Ness, Grønseth & Aarstad, 2010). A concept of innovativeness is used, based on Wang's and Ahmed's (2004) multi-dimensional definition and Huang's, Li's & Chen's (2009) recognition of the importance of tangible and intangible dimensions, in order to cover all aspects of mountain destination innovativeness. Mountain tourism destinations were chosen for analysis as they are experiencing pressure, uncertainty and crisis (Bordeau, 2009). Organizational and strategic innovations are needed in order to adapt to the changing environment (Macchiavelli, 2009). Flagestad & Hope (2001), Pechlaner & Sauerwein (2002), Bordeau (2009) and Macchiavelli (2009) believed that mountain tourism has to be redefined, which can be done with the help of identified important mountain destination elements, based on which factors of mountain destination innovativeness are constructed. Existing destination competitiveness models and innovation literature represent a foundation for the development of mountain destination innovativeness elements, which are tested for their importance in the first part of the analysis. An exploratory factor analysis is then conducted using only the more important elements to form three factors that represent underlying dimensions of mountain destination innovativeness. The results show that mountain destination innovativeness incorporates the factors of socio-cultural sustainability and stakeholder participation, environmental sustainability (natural environment) and proactiveness.

## **Introduction**

This article focuses on innovativeness in mountain tourism destinations. Elements that could improve destination innovativeness are measured for their importance. Researchers in the field of tourism call for the further development and measurement of the relative importance of different dimensions of destinations (Dwyer & Kim, 2003; Bornhorst, Ritchie & Sheehan, 2010). Innovativeness might represent an important future focus of research concerning destinations. Pechlaner (1999) argues that destinations' development evaluations should be future-oriented, which was also recognized by Dwyer & Kim (2003). Unique firm resources and capabilities are essential for acquiring a sustainable competitive advantage (Barney, 1991; Prahalad & Hamel, 1990). This will be applied at a destination level using innovativeness elements as a unique resource and capability.

Existing destination competitiveness models and elements of destination innovativeness, applied to mountain destinations, constitute a basis from which the innovativeness elements are derived. Innovativeness elements in destination management and attractors are then graded based on importance, and innovativeness factors are subsequently determined. Identifying the importance of innovativeness elements and grouping them into factors provides knowledge for researchers, destination managers and other stakeholders in mountain destinations. Destinations will be able to determine and improve their innovativeness, identify strengths and weaknesses and consequently achieve growth and sustainability (Volo, 2005).

In the first section, tourism destination literature is reviewed. In the second section, the concept of innovativeness is defined and applied to tourism destinations. Tourism destination innovativeness is analyzed; innovativeness is also discussed in terms of its connection to mountain tourism destinations. Based on the findings, mountain destination innovativeness is defined and mountain destination innovativeness elements are developed. Elements are then tested for their importance and grouped into factors in the third section. The fourth section gives recommendations for further research and summarizes the article.

### **1 Tourism destination**

Tourism destination can be defined as a geographical area that is perceived as a separate unit by tourists. It possesses elements of primary and secondary tourism supply, it must be accessible and meet political and legal conditions for the destination that enable joint promotion, destination development planning and the creation of tourism destination products

(Mihalič, 2008). Natural, cultural, heritage and social attractors, infrastructure, tourism infrastructure and superstructure are crucial for destinations (Ritchie & Crouch, 2003; Dwyer & Kim, 2003). Proper management is essential for protecting the abovementioned attractors (Crouch, 2006) and for successful tourism infrastructure (Pechlaner & Tschurtschenthaler, 2003). Destination management organization is the main stakeholder in a destination (Buhalis, 2000). It strategically manages the tourism destination, and coordinates stakeholders to achieve strategic goals, such as destination development (Go & Govers, 2000; Enright & Newton, 2004; Crouch, 2006).

Protecting, maintaining or strengthening destination development is a key challenge in the tourism sector. There are numerous players involved, which makes the management of destinations more complex. Theories, frameworks, models, or processes were developed to cope with this challenge and to provide an insight to the complexity of management (Crouch, 2007). Over the previous decade, numerous destination management and destination competitiveness models were developed and proven to be a useful tool in tourism sector. The two most influential models were developed by Dwyer & Kim (2003) and Ritchie & Crouch (2003). However, the occurrence of the global economic crisis and resulting changing trends require modifications to business models and tourism supply (UNWTO, 2010). This research paper will try to address these questions by incorporating innovativeness into destination management, infrastructure, tourism infrastructure and superstructure, and natural, cultural and social attractors. Developing the mountain destination innovativeness elements on the basis of destination competitiveness models provides strong foundations for the identification of factors of innovativeness that do not just serve the notion of being innovative, but actually contribute to destination development.

## **2 Tourism destination innovativeness**

Innovation can be viewed from very different aspects, and scholars have inconsistent viewpoints due to a one-dimensional view of innovation, which leads to lack of consensus (Dobni, 2008; Huang et al., 2009). A wider formulation is needed, especially for the organizational impacts of innovation, such as innovation and its influence on organizational performance (Dobni, 2008). For the purpose of this research, a very wide definition of innovation will be used in order to cover all aspects of mountain destination innovativeness. Wang's and Ahmed's (2004) definition of innovativeness can be used on a destination level. They defined it as "an organization's overall innovative capability of introducing new product

to the market, or opening up new markets, through combining strategic orientation with innovative behavior and process". Huang et al. (2009) defined the concept of innovativeness as the inclination to develop new products and services and the firm's innovative climate. They expanded the concept of innovation that includes only the tangible outcome, by also introducing the intangible dimension to form the concept of innovativeness. Both sides will be taken into account for determining the importance of mountain destination innovativeness elements.

Wang & Ahmed (2004) validated a multi-dimensional innovativeness construct, which comprises product, market, process, behavior and strategic innovation. Tidd, Bessant & Pavitt (2009) identified the need for a mobilization of factors that increases the innovativeness of services besides products and processes. Huang et al. (2009) expanded the construct with personnel innovativeness, while Li, Chen & Huang (2006) included technology innovativeness. Sundbo (1997) added organizational innovation; Hamel (2006) discussed innovation as a departure from usual organizational forms. Dobni (2008) believed that innovativeness also incorporates behavioral (cultural), and infrastructure aspects and stated that the standard for innovativeness is multi-dimensional. Hurley and Hult (1998) claimed that the level of innovativeness is linked to how much organizational culture promotes participative decision making and learning. Tidd et al. (2009) recognized the importance of technology, knowledge and experience for increasing innovativeness.

Sustainable innovation is a necessary precondition for the sustainability of societies and organizations. It influences organization principles, products, services, energy and resources used, and waste production (Jorna, 2006). Sustainable innovation creates new products and processes that provide customers and businesses value while considerably decreasing environmental impacts (James, 1997). Some elements of innovativeness are based on the UNWTO<sup>1</sup> sustainability principles. Innovation of products and services connected to natural and cultural heritage require transformation, reinvention and usefulness (Hjalager, 2010). Jorna (2006) argued that during the innovation process attention must be put on the triple bottom line of economic, social and environmental value creation.

The nature of services, types of products, connection with consumers, specific processes, different organizational perspective and coordination and cooperation make service innovations markedly different (Hipp in Grupp, 2005). Technology, knowledge and

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<sup>1</sup> United Nations World Tourism Organisation

networks drive innovativeness in service organizations (Kandampully, 2002). Innovation is a result of the interactive gathering of knowledge (Tödting, Lehner & Kaufmann, 2009). Swan, Scarbrough & Robertson (2003) claimed that networking encourages knowledge creation and plays a central role in innovation. Pechlaner, Hölzl & Tallinucci (2004) called for the development of innovative forms of strategic knowledge networking. Information and communication technologies, entrepreneurship, infrastructure, regulations and the existence of territorial industry clusters are the determinants that influence innovativeness in tourism (Hjalager, 2002; 2010). Information and communication technologies have brought many changes in tourism sector (Buhalis & Law, 2008) that should be taken into consideration when forming mountain destination innovativeness elements. Hjalager (2010) also recognized the importance of product, process, institutional, distribution, management, marketing and organizational innovations in the tourism sector.

Tourism destination innovativeness has come to the attention of some researchers, but needs additional research on the key components of destination innovativeness, their driving forces and how they interact on a destination level as well as in different sectors (Volo, 2005). Taleb Rifai recognized the importance of innovativeness in destinations (UNWTO, 2010). Innovative approach is crucial for destination marketing and promotion. New communication channels and the emergence of Web 2.0 enable customers to become co-developers, who create large quantities of tourist information. This forces destination management organizations to implement new technologies (Lee & Wicks, 2010). Flagestad, Hope, Nordin & Svensson (2005) and Zach & Fesenmaier (2009) believed that destination management organization as a link between different actors plays a decisive role and is an essential function for innovation processes. Hamel (2000) emphasized the significance of innovation in business models and tourism supply for enhancing competitiveness. Flagestad et al. (2005) developed a model of a destination innovation system that embraced product and process innovations and concluded that it could be compared to a local or regional innovation system. Mattsson, Sundbo & Fussing-Jensen (2005) stated in their study of innovation systems in tourism that the successful usage of attractors requires innovation in tourist companies and cooperation between them. Mountain destination innovativeness elements are also based on these findings.

## **2.1 Mountain destination innovativeness**

Innovation is a localized phenomenon, highly reliant on destination specific resources (Marinova & Phillimore, 2003; Asheim & Gertler, 2006; Edquist, 2006). Dwyer, Cvelbar,

Edwards & Mihalič (2010) acknowledged that competitiveness attributes vary across locations. In order to avoid this problem, a specific kind of destination was chosen for analysis. A mountain destination can be defined as a geographical, economic and social entity that incorporates companies, organizations, activities, areas and infrastructure developed to satisfy the special needs of mountain tourists (adapted from Flagestad & Hope, 2001). The snow-based tourism, adventure tourism (trekking, climbing, rafting), cultural tourism, ecotourism, pilgrimage and mass tourism to popular sites are all part of mountain tourism (Godde, 1998). Event tourism is also a part of mountain tourism (May, 1995). Nepal & Chipeniuk (2005) described mountain destinations as being diverse, marginal, inaccessible, vulnerable, niche and aesthetic. Aesthetics can be used as a trait for the development of mountain ecotourism (Nepal, 2002). High altitudes and relative isolation have created specific conditions (Godde, 1998) that enabled the preservation of habits and lifestyles (Higham, 2003). Multiple authors call for the reinvention of mountain tourism (Flagestad & Hope, 2001; Pechlaner & Sauerwein, 2002; Bourdeau, 2009; Macchiavelli, 2009). Alpine destinations have matured, even stagnated (Pechlaner, Fischer & Hammann, 2005); this is where innovativeness comes in as a crucial factor for destination development.

Paget, Dimanche & Mounet (2010) recognized the impact of innovativeness on mountain destination development. Flagestad & Hope (2001) stated that mountain destination development depends on strategies for creating competitive advantages, which can include innovativeness. Bourdeau (2009) identified the need for innovative practices in mountain tourism. He called for the drastic reorganization and adaptation of European mountain tourism. Organizational as well as strategic innovations are needed to provide the flexibility to face the challenges imposed by the environment (Macchiavelli, 2009). Mountain tourism is experiencing pressure, uncertainty and crisis (Bourdeau, 2009). The global economic crisis has also affected mountain destinations in Eastern Europe (Zukal, 2010). Bourdeau (2009) suggested that mountain destinations should be more innovative within marketing, space usage, and activities, and operate in all four seasons. The International Scientific Committee on Research in the Alps (ISCAR) identified the need to discover innovative ways, methods and governance in order to restructure mountain destinations, limit the impacts of crises and facilitate sustainable development (ISCAR, 2008). Macchiavelli (2009) stated that some alpine communities have already successfully launched innovations. A part of organizational innovation is user participation in product development, which is increasingly used in mountain destinations (Hjalager, 2010).



Mountain tourism is closely connected to ecotourism and sustainable development (Funnell and Price 2003). Infrastructure is key in mountain destinations and should be in line with sustainable development. Efficient waste management is required (Godde, 1998). Participation of all stakeholders in tourism planning and decision making and other socio-cultural and environmental practices are necessary for mountain tourism sustainability (Nepal & Chipeniuk, 2005). Cultural heritage is crucial for mountain destinations (Godde, 1998). Weiermair, Peters & Frehse (2008) recognize the importance of education and training of employees and tourists for achieving sustainability in mountain destinations. Balancing environmental actions and environmental communication can provide competitive advantages for mountain destinations derived from sustainable development (Hudson & Miller, 2005). Balbi, Perez & Giupponi (2010) stated that mountain areas are sensitive to climate change, which calls for innovative practices. Climate change will influence winter mountain tourism (Moen & Fredman, 2007). New forms of tourism supply can provide services for tourists in cases of bad weather (Weiermair et al. 2008).

### **3 Determining the elements and factors of mountain destination innovativeness**

Limited empirical data exist regarding the stage of innovative activities, their influence and meaning for destinations. A need for systematic and comparable empirical evidence has been identified (Hjalager, 2010). Innovation literature is scarce in the context of tourism destinations (Flagestad et al., 2005). This research contributes to the existing knowledge in the field by considering the importance of identified mountain destination innovativeness elements. Elements are evaluated with respect to the relative importance toward the decision goal, which is the increase of innovativeness of a destination that subsequently leads to destination development. The important elements are kept and exploratory factor analysis is conducted in order to determine whether the identified elements form coherent factors. Results will be useful for researchers in the field, as well as for mountain destination managers and stakeholders in mountain destinations as the analysis will help to identify key elements and factors to focus on. Due to the vague definition of innovativeness, special care was required to define the field of mountain destination innovativeness. Existing literature on tourism destinations and innovation constitute a basis for the development of the mountain destination innovativeness elements. Common foundations of innovation are determined and an inventory of innovativeness elements is formed that captures the core of mountain destination innovativeness. Models used to measure innovativeness and competitiveness are considered. Elements are carefully selected

in order to cover as many views of mountain destination innovativeness as possible. This results in multiple elements for each aspect of mountain destination innovativeness.

### **3.1 Research focus**

The purpose of the research is to explore mountain tourism destination innovativeness elements in terms of their importance. Based on the identified important elements, an exploratory factor analysis is conducted in order to search for consistent factors within mountain destination innovativeness. Multiple authors have discussed the importance of different factors concerning the destination (Enright & Newton, 2004; 2005; Lam, 2006; Macchiavelli, 2009; Crouch, 2007; 2010). The goal of the research is to identify important elements for increasing mountain destination innovativeness and to establish factors that represent the underlying dimensions of mountain destination innovativeness.

The first research question corresponds to the first part of the research, which seeks to identify important innovativeness elements. Dwyer & Kim (2003) called for more research on the relative importance of different dimensions of destination factors. The question that arises is which innovative elements within destination management and tourism attractors are important.

*Research question: Which innovative elements are statistically significantly important for mountain destination innovativeness?*

The proposition of whether the identified important innovative elements form coherent factors that represent underlying dimensions of mountain destination innovativeness is studied in the second part of this research, which concentrates on the development of mountain destination innovativeness factors. Based on the results of the first part of the research, the elements chosen for analysis are statistically significantly important.

*Research question: Do innovative elements form coherent factors that represent underlying dimensions of mountain destination innovativeness?*

### **3.2 Survey sample**

Innovative elements were tested for their importance for mountain destination innovativeness using a survey sample consisting of lecturers, researchers and consultants in the field of innovation and mountain tourism and managers in mountain destinations. In Table 1, the structure of the sample is presented, based on the country of origin of the respondents.

Table 1: Country of origin

Country	SI	AT	IT	US	CA	CH	AU	GB	FR	ES	DE	NO	DK	SE	BE	IN	NL	PT	Other*	Sum
Number of cases	36	20	17	17	14	12	9	9	8	7	6	5	4	4	3	3	3	3	17	197
Share	18.3%	10.2%	8.6%	8.6%	7.1%	6.1%	4.6%	4.6%	4.1%	3.6%	3.0%	2.5%	2.0%	2.0%	1.5%	1.5%	1.5%	1.5%	8.6%	100.0%

\*BG, CN, FI, JP, NZ, TW, AD, IE, PL, RU, SK.

The collective experience, knowledge, and insights of managers from destination management organizations<sup>2</sup> and tourism researchers with expertise in destination management provide a valuable source of information (Crouch, 2010). For the purpose of this research, other managers in mountain destinations and researchers from the field of innovativeness and mountain tourism were also added. It is common for the survey population to be managers and other practitioners from public and private tourism sectors as this is the population that is the most knowledgeable about the destination elements (Enright & Newton, 2004). The structure of the sample based on the sector type and line of work is presented in Table 2 and Table 3. The survey enabled multiple responses for these questions in order to grasp the true nature of the work of respondents. In Table 2 and Table 3, the number of answers are shown, and their shares in the total volume of answers and their shares based on the sample size (N = 197 for sector type and N = 196 for line of work) are presented.

Table 2: Sector type

Sector	Responses		Percent of Cases
	N	Percent	
Public sector	136	66.0%	69.0%
Private sector	70	34.0%	35.5%
<b>Total</b>	<b>206</b>	<b>100.0%</b>	<b>104.6%</b>

Table 3: Line of work

Line of work	Responses		Percent of Cases
	N	Percent	
Researcher	67	24.3%	34.2%
Lecturer	61	22.1%	31.1%
Destination management, local tourism organization	33	12.0%	16.8%
Consultant	23	8.3%	11.7%
Ski operator	23	8.3%	11.7%
Hotel management	12	4.3%	6.1%
Local government	9	3.3%	4.6%
Event management	9	3.3%	4.6%
Incoming agency	8	2.9%	4.1%
Non-governmental organization	6	2.2%	3.1%
Attraction management	6	2.2%	3.1%
Other sectors*	19	6.9%	9.7%
<b>Total</b>	<b>276</b>	<b>100.0%</b>	<b>140.8%</b>

<sup>2</sup> National tourism administrations, state or provincial tourism offices, regional tourism organizations, convention and visitor bureaus and similar types of bodies.

\*Transport, International organizations, Chamber of commerce, Convention centre management, Catering, Other organizations

The respondents that described themselves as researchers, lecturers and/or consultants were also asked to state their area/s of interest (Table 4). Again, multiple responses were enabled in order to allow the respondents to state all their interests. The number of responses, their share in the total volume of responses and their share in the survey sample of this group (N = 108) are presented.

Table 4: Areas of interest

Interests	Responses		Percent of Cases
	N	Percent	
Mountain tourism	62	33.5%	57.4%
Innovativeness in tourism	50	27.0%	46.3%
Innovativeness	23	12.4%	21.3%
Sport tourism	21	11.4%	19.4%
Sustainable tourism	12	6.5%	11.1%
Tourism marketing and management	6	3.2%	5.6%
Tourism networks	5	2.7%	4.6%
Other	6	3.2%	5.6%
<b>Total</b>	<b>185</b>	<b>100.0%</b>	<b>171.3%</b>

Importance was measured with seven-point<sup>3</sup> Likert items, a common practice in tourism literature (Peters, 1993; Borchgrevink & Knutson, 1997; Barquet, Osti & Brida, 2010). The research was carried out with a web-based survey. Initially, 400 researchers and 800 managers were contacted. The survey generated 210 responses, of which 197 were used for analysis, since the amount of time taken to complete the survey was set to at least four minutes. Hutcheson & Sofroniou (1999) suggested from 150 to 300 cases for factor analysis. A condition that was also fulfilled is that the subjects-to-variables ratio should not be lower than five (Bryant & Yarnold, 1995). Serious missing values were not found, and missing observations that existed were managed with the EM imputation method, which produces the best representation of the original distribution of values with the least bias (Hair, Black, Babin & Anderson, 2010).

### 3.3 Importance of mountain destination innovativeness elements

In the first part of the research, innovativeness elements are tested for their importance. Important elements of destination innovativeness are identified, which enables the reduction in the number of variables used in the second part of the research. Altogether, 88 variables were tested for their importance; 50 variables were retained, with means higher than 5.5, which suggests that the respondents consider these variables to be important. A

<sup>3</sup> 1 = Very unimportant, 2 = Unimportant, 3 = Slightly unimportant 4 = Neither unimportant or important, 5 = Slightly important, 6 = Important, 7 = Very important.

threshold of 5.5 was used since variables with means above 5.5 are closer to “important” (6) than “slightly important” (5). These variables were then tested whether they are statistically significantly higher than 5.5. The results show statistical significance for 33 variables (Appendix 1). The identified elements can be considered to be important for mountain destination innovativeness and are used in the second part of the analysis, in which factors of mountain destination innovativeness are identified based on these elements.

### 3.4 Development of mountain destination innovativeness factors

An exploratory factor analysis was conducted using the identified important innovative elements to form factors of mountain destination innovativeness. This enables the identification of different aspects of mountain destination innovativeness. The exploratory factor analysis was conducted based on the 33 elements that were identified as important for mountain destination innovativeness. The Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) is very high (0.897), suggesting the appropriateness of factor analysis. Furthermore, the significance of the Bartlett’s Test of Sphericity ( $p = 0.000$ ) indicates that sufficient correlations exist among the variables to proceed with the analysis (Hair et al., 2010).

The exploratory factor analysis was performed to determine the underlying dimensions of mountain destination innovativeness by analyzing patterns of correlations among the 33 variables. The principle axis factoring extraction method with Promax rotation was used. In this case, oblique rotation is more appropriate, since the underlying dimensions are assumed to be correlated. Some correlation among factors can be expected, in which case oblique rotation generates a more accurate solution (Costello & Osborne, 2005). Table 5 shows the actual correlations between the three factors. The correlations suggest that obliquely rotated solution should be adopted. In Appendix 2, correlations between the variables are presented.

Table 5: Factor Correlation Matrix

Factor	1	2	3
1	1.000	.628	.622
2	.628	1.000	.523
3	.622	.523	1.000

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization.

A range of criteria was used to determine the number of factors to extract, such as latent roots or eigenvalues, scree plot, communalities, and percentage of explained variance. The proposed solution with four factors with eigenvalues greater than 1.0 was tested, but it

produced a factor with only two variables, which is below the suggested minimum criteria of three variables per factor (Velicer & Fava, 1998). Hence, the scree plot was reanalyzed, and showed that the maximum factors to extract might be three. Subsequently, a three-factor model was tested. Based on guidelines of Hair et al. (2010), items with factor loadings lower than 0.5, the minimum necessary for practical significance, and cross-loadings higher than 0.4, were individually eliminated. Finally, a three-factor solution, with 25 variables being retained, was produced representing approximately 56.8% of the total variance (Table 6), which is considered to be satisfactory in social sciences (Hair et al., 2010). Additionally, the communalities of the 25 variables ranged from 0.405 to 0.723, suggesting that the variances of each original variable were reasonably explained by the three-factor solution. The Cronbach's alpha for the three factors varied from 0.899 to 0.921, all much higher than the generally agreed upon lower limit of 0.7, suggesting high internal consistency (Hair et al., 2010). Each proposed factor contains at least five variables, as suggested by Hair et al. (2010). The three factors were then labeled based on the variables that constituted them (Table 6). The factor of socio-cultural sustainability and stakeholder participation addresses one dimension of sustainability, while innovativeness in regard to natural environment is included in the factor of environmental sustainability. Proactiveness was also identified as factor that constitutes mountain destination innovativeness.

Table 6: Rotated factor loading, communalities of variables, share of explained variance and reliability tests

Variable	Factor 1*	Factor 2**	Factor 3***	Communality
The local population's support for change	<b>.834</b>	.008	-.085	0.622
The local population's capacity to change	<b>.803</b>	.012	-.080	0.581
Participation of all stakeholders in tourism planning	<b>.754</b>	-.029	.020	0.560
Collaboration of all stakeholders in decision-making processes	<b>.753</b>	.000	.026	0.593
Taking into account the interests of the local community	<b>.751</b>	.004	.031	0.598
Organizational structure that supports involvement of all stakeholders	<b>.737</b>	.110	-.051	0.607
Availability of knowledge resources and education	<b>.674</b>	.003	.093	0.543
Respect for the socio-cultural authenticity of host communities (conservation of cultural heritage and traditional values)	<b>.664</b>	.216	-.102	0.570
Offering local products in combination with experiencing local craftsmanship	<b>.537</b>	.104	.124	0.481
Energy policies that support usage of alternative sources of energy	-.043	<b>.850</b>	-.031	0.653
Environmental policies that promote sustainable development	.079	<b>.836</b>	-.136	0.674
Making optimal use of environmental resources (environmental sustainability)	.069	<b>.699</b>	.062	0.607
Transportation policies that favor alternative transportation modes and public transportation	.041	<b>.666</b>	.120	0.583
Maintaining ecological processes and helping to conserve natural resources and biodiversity	-.032	<b>.662</b>	.167	0.550
Exploiting opportunities created by changing climate conditions	-.024	<b>.638</b>	.026	0.405
Implementing new practices in environmental management	.087	<b>.637</b>	.024	0.502
Adapting to changing climate conditions	.104	<b>.580</b>	.001	0.423
Dynamic content on the web portal	-.164	.062	<b>.870</b>	0.655
Creating distinctive image of the destination	.179	-.101	<b>.782</b>	0.723

Logistics adapted to changing demand (last minute reservations, new reservations systems, etc.)	-.134	.100	<b>.758</b>	0.539
Web portal providing rich user experience	-.078	.106	<b>.753</b>	0.585
Tourism products adapted to changing demand (last minute reservations, increased price sensitivity, etc.)	-.138	.067	<b>.737</b>	0.480
Formation of destination's innovation strategy	.296	-.058	<b>.615</b>	0.637
Creation of innovative vision	.260	-.027	<b>.587</b>	0.577
Ease of access to information through a highly developed communication system	.307	-.174	<b>.539</b>	0.456
Share of variance explained (%)	43.168	7.645	6.006	
Cronbach's alpha	0.921	0.899	0.908	

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization.

\*Factor 1: Socio-cultural sustainability and stakeholder participation

\*\*Factor 2: Environmental sustainability (natural environment)

\*\*\*Factor 3: Proactiveness

#### 4 Recommendations for further research

This research determined important factors that represent underlying dimensions of mountain destination innovativeness. In-depth research of each identified factor can provide additional knowledge about specific attributes of innovativeness. Considering each factor independently might provide an aspect to better define each factor. In contrast, the literature review and conducted analysis helped uncover the need for the development of a comprehensive mountain destination innovativeness model that would provide an overview and different aspects of innovativeness factors, how they influence destination development and how they are influenced by tourism environments. Research in terms of quantification and qualitative studies of the foundations, processes, implications and policies of innovation in tourism is necessary for expanding the knowledge in this field (Hjalager, 2010).

Therefore, it would be highly interesting to explore interactions between tourism environments, innovativeness and destination development. The identified elements and factors of mountain destination innovativeness can be used to determine the construct mountain destination innovativeness. Tourism environments are composed of political, economic, technological and ecological (natural, cultural, social) environments, elements of which are inextricably linked and interdependent. Marinova & Phillimore (2003) recognized the importance of tourism environments for increasing innovativeness and development. Effective usage of tourism environments can impact destination competitiveness and development (Crouch & Ritchie, 1999). They affect the influence of other groups of factors on destination competitiveness in a negative or positive way (Dwyer & Kim, 2003). Dobni (2008) stated that innovativeness can be viewed as the ability to introduce new products, services, ideas, processes and systems that can lead to enhanced business performance. Weiermair (2003), Volo (2005), Zach & Fesenmaier (2009) and Haugland et al. (2010)

pointed out that innovativeness influences destination development. Innovativeness can increase the destination's ability to meet and adjust to the global changes, which enables the destinations to become future makers, rather than future takers (Dwyer et al., 2010). Huang et al. (2009) believed innovativeness to be a pre-performance factor, and they perceived it as the most important indicator of future performance and potential success. Innovativeness is an important predecessor of performance (Hult, Hurley & Knight, 2004). Castellani & Sala (2010) believed that innovativeness influences socio-cultural and environmental indicators. Several proxies for the measurement of a destination's development should be used, as there is no perfect measure (Vaughan, 1999).

Based on the literature review findings and research results, it is suggested that in future research, structural equation modeling be used to determine whether tourism environments influence mountain destination innovativeness and whether mountain destination innovativeness influences mountain destination development. It would be very interesting to determine if the effect of tourism environments on mountain destination development is mediated by mountain destination innovativeness. Testing innovative factors and the corresponding innovative elements for their influence on destination development can provide knowledge to stakeholders in mountain destinations. It will enable destinations to identify key innovativeness factors to focus on, which areas they excel and which they need to improve in order to increase destination development. Such models can grade different investments and policies and develop an action agenda to achieve and maintain competitive advantage (Dwyer & Kim, 2003; Dwyer et al., 2010).

The identified factors of mountain destination innovativeness constitute a basis for further research. The factors contribute to a better understanding of the underlying dimensions of mountain destination innovativeness, which shows to have been heavily influenced by sustainability and proactiveness. The results also have practical implications. Decision makers will be able to prioritize, modify and adopt actions that will enable mountain destinations to prepare for the challenges posed by the rapidly changing environment and to increase innovativeness, which possibly leads to improved destination development.



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## Appendix 1: One-sample T-test

Variable	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Creating distinctive image of the destination	197	6.14	1.167	7.752	.000
Creation of innovative vision	197	6.14	1.097	8.213	.000
Maintaining ecological processes and helping to conserve natural resources and biodiversity	197	6.12	1.103	7.933	.000
Participation of all stakeholders in tourism planning	197	6.07	1.121	7.118	.000
Making optimal use of environmental resources (environmental sustainability)	197	6.06	1.105	7.125	.000
Formation of destination's innovation strategy	197	6.01	1.128	6.350	.000
Taking into account the interests of the local community	197	5.98	1.174	5.787	.000
Environmental policies that promote sustainable development	197	5.93	1.097	5.444	.000
Human resource development (employee empowerment and education)	197	5.92	1.174	5.039	.000
Adaptive management that enables quick response to changing environment	197	5.92	1.001	5.861	.000
The local population's support for change	197	5.91	1.238	4.654	.000
Web portal providing rich user experience	197	5.88	1.189	4.454	.000
Dynamic content on the web portal	197	5.87	1.184	4.347	.000
The local population's capacity to change	197	5.86	1.207	4.230	.000
Transportation policies that favor alternative transportation modes and public transportation	197	5.86	1.068	4.723	.000
Adapting to changing climate conditions	197	5.85	1.289	3.788	.000
Continuous learning and knowledge creation	197	5.84	1.192	4.027	.000
Collaboration of all stakeholders in decision-making processes	197	5.83	1.215	3.855	.000
Ease of access to information through a highly developed communication system	197	5.82	1.200	3.754	.000
Resource management (resources used in different manners to meet the emerging needs)	197	5.81	1.032	4.151	.000
Using mountain scenery as an attraction (taking photos, etc.)	197	5.79	1.200	3.413	.001
State-of-the-art safety procedures and safety infrastructure in the mountains (anti-avalanche systems, etc.)	197	5.79	1.336	3.040	.003
Respect for the socio-cultural authenticity of host communities (conservation of cultural heritage and traditional values)	197	5.76	1.268	2.876	.004
Organizational structure that supports involvement of all stakeholders	197	5.76	1.226	2.945	.004
Energy policies that support usage of alternative sources of energy	197	5.76	1.059	3.379	.001
Active education of all interested parties at the destination	197	5.72	1.202	2.600	.010
Offering local products in combination with experiencing local craftsmanship	197	5.72	1.193	2.578	.011
Tourism products adapted to changing demand (last minute reservations, increased price sensitivity, etc.)	197	5.70	1.101	2.495	.013
Exploiting opportunities created by changing climate conditions	197	5.69	1.395	1.880	.062
Availability of knowledge resources and education	197	5.69	1.247	2.101	.037
Logistics adapted to changing demand (last minute reservations, new reservations systems, etc.)	197	5.68	1.168	2.104	.037
Distinctive local cuisine (using local agriculture, etc.)	197	5.66	1.265	1.747	.082
Public private partnership for the transfer of knowhow and availability of new solutions	197	5.64	1.313	1.527	.128
Active research, communication and application of research findings	197	5.64	1.281	1.495	.137
Implementing new practices in environmental management	197	5.63	1.007	1.821	.070
Social networking, the interaction of social and commercial networks	197	5.62	1.157	1.459	.146
Destination's products based on determined customer characteristics (context awareness)	197	5.62	1.225	1.336	.183
Improvements in destination accessibility (tunnels, reinventing the trains, etc.)	197	5.62	1.339	1.221	.224
User participation in product development	197	5.60	1.118	1.274	.204
Efficient waste management	197	5.60	1.353	1.019	.309
Using mountain rivers as an attraction (extreme sports, appreciating the natural beauty, etc.)	197	5.60	1.163	1.176	.241
Environmentally friendly solutions for ski infrastructure	197	5.60	1.332	1.008	.315
Tourist firms' IT capabilities	197	5.58	1.149	1.025	.307
Organizing new kinds of special events	197	5.58	1.160	.979	.329
Destination's products supported by mobile services and applications	197	5.57	1.170	.888	.376
Respect of societal norms and values in business and economic relationships	197	5.55	1.180	.578	.564
Environmentally friendly solutions for tourist accommodations	197	5.54	1.176	.515	.607
Inclusion of social networking in destination's product development (blogs, Facebook, Twitter, etc.)	197	5.53	1.223	.325	.746
Quick development of competences and skills in destination management organization to match the demands of new technologies	197	5.52	1.079	.268	.789
Using new technological developments in customer relationship management	197	5.51	1.198	.149	.882

**Appendix 2: Correlation Matrix**

Variable	1	2	3	4	5	6	7	8	9
1 Ease of access to information through a highly developed communication system	<b>1,000</b>	,357	,361	,350	,553	,476	,321	,349	,284
2 Respect for the socio-cultural authenticity of host communities (conservation of cultural heritage and traditional values)	,357	<b>1,000</b>	,624	,569	,556	,564	,516	,515	,364
3 The local population's support for change	,361	,624	<b>1,000</b>	,859	,584	,478	,464	,398	,408
4 The local population's capacity to change	,350	,569	,859	<b>1,000</b>	,551	,466	,374	,358	,427
5 Availability of knowledge resources and education	,553	,556	,584	,551	<b>1,000</b>	,560	,434	,348	,359
6 Offering local products in combination with experiencing local craftsmanship	,476	,564	,478	,466	,560	<b>1,000</b>	,434	,419	,346
7 Making optimal use of environmental resources (environmental sustainability)	,321	,516	,464	,374	,434	,434	<b>1,000</b>	,774	,494
8 Maintaining ecological processes and helping to conserve natural resources and biodiversity	,349	,515	,398	,358	,348	,419	,774	<b>1,000</b>	,489
9 Adapting to changing climate conditions	,284	,364	,408	,427	,359	,346	,494	,489	<b>1,000</b>
10 Exploiting opportunities created by changing climate conditions	,200	,365	,314	,382	,294	,335	,462	,435	,750
11 Participation of all stakeholders in tourism planning	,362	,528	,542	,519	,510	,499	,401	,352	,292
12 Collaboration of all stakeholders in decision-making processes	,357	,532	,527	,507	,471	,540	,385	,313	,396
13 Creation of innovative vision	,573	,364	,461	,431	,522	,437	,450	,467	,296
14 Formation of destination's innovation strategy	,574	,416	,462	,427	,582	,497	,446	,446	,333
15 Energy policies that support usage of alternative sources of energy	,206	,438	,333	,312	,378	,393	,566	,550	,479
16 Transportation policies that favor alternative transportation modes and public transportation	,317	,437	,354	,389	,448	,521	,528	,501	,435
17 Environmental policies that promote sustainable development	,139	,436	,413	,362	,395	,325	,649	,601	,445
18 Taking into account the interests of the local community	,423	,585	,535	,524	,568	,536	,374	,351	,325
19 Organizational structure that supports involvement of all stakeholders	,322	,564	,531	,554	,509	,498	,411	,326	,361
20 Implementing new practices in environmental management	,203	,446	,345	,374	,349	,382	,528	,430	,394
21 Web portal providing rich user experience	,459	,291	,326	,265	,371	,401	,435	,376	,199
22 Dynamic content on the web portal	,453	,309	,288	,333	,379	,378	,302	,402	,238
23 Logistics adapted to changing demand (last minute reservations, new reservations systems, etc.)	,396	,309	,304	,287	,259	,315	,308	,335	,313
24 Tourism products adapted to changing demand (last minute reservations, increased price sensitivity, etc.)	,360	,270	,257	,261	,209	,258	,250	,288	,281
25 Creating distinctive image of the destination	,569	,393	,444	,442	,452	,446	,418	,414	,373

Variable	10	11	12	13	14	15	16	17
1 Ease of access to information through a highly developed communication system	,200	,362	,357	,573	,574	,206	,317	,139
2 Respect for the socio-cultural authenticity of host communities (conservation of cultural heritage and traditional values)	,365	,528	,532	,364	,416	,438	,437	,436
3 The local population's support for change	,314	,542	,527	,461	,462	,333	,354	,413
4 The local population's capacity to change	,382	,519	,507	,431	,427	,312	,389	,362
5 Availability of knowledge resources and education	,294	,510	,471	,522	,582	,378	,448	,395
6 Offering local products in combination with experiencing local craftsmanship	,335	,499	,540	,437	,497	,393	,521	,325
7 Making optimal use of environmental resources (environmental sustainability)	,462	,401	,385	,450	,446	,566	,528	,649
8 Maintaining ecological processes and helping to conserve natural resources and biodiversity	,435	,352	,313	,467	,446	,550	,501	,601
9 Adapting to changing climate conditions	,750	,292	,396	,296	,333	,479	,435	,445
10 Exploiting opportunities created by changing climate conditions	<b>1,000</b>	,206	,329	,223	,279	,446	,482	,422
11 Participation of all stakeholders in tourism planning	,206	<b>1,000</b>	,752	,427	,432	,331	,406	,434
12 Collaboration of all stakeholders in decision-making processes	,329	,752	<b>1,000</b>	,431	,491	,358	,374	,442
13 Creation of innovative vision	,223	,427	,431	<b>1,000</b>	,804	,383	,463	,298
14 Formation of destination's innovation strategy	,279	,432	,491	,804	<b>1,000</b>	,351	,441	,298
15 Energy policies that support usage of alternative sources of energy	,446	,331	,358	,383	,351	<b>1,000</b>	,725	,700
16 Transportation policies that favor alternative transportation modes and public transportation	,482	,406	,374	,463	,441	,725	<b>1,000</b>	,600
17 Environmental policies that promote sustainable development	,422	,434	,442	,298	,298	,700	,600	<b>1,000</b>
18 Taking into account the interests of the local community	,271	,552	,639	,504	,501	,412	,421	,425
19 Organizational structure that supports involvement of all stakeholders	,296	,665	,704	,388	,435	,420	,449	,523
20 Implementing new practices in environmental management	,422	,359	,411	,313	,324	,590	,572	,621
21 Web portal providing rich user experience	,216	,365	,398	,503	,574	,350	,412	,405
22 Dynamic content on the web portal	,309	,312	,300	,543	,581	,343	,445	,222
23 Logistics adapted to changing demand (last minute reservations, new reservations systems, etc.)	,297	,365	,357	,419	,415	,242	,339	,307
24 Tourism products adapted to changing demand (last minute reservations, increased price sensitivity, etc.)	,258	,337	,366	,400	,436	,243	,288	,278
25 Creating distinctive image of the destination	,330	,433	,481	,654	,661	,291	,348	,266

Variable	18	19	20	21	22	23	24	25
1 Ease of access to information through a highly developed communication system	,423	,322	,203	,459	,453	,396	,360	,569
2 Respect for the socio-cultural authenticity of host communities (conservation of cultural heritage and traditional values)	,585	,564	,446	,291	,309	,309	,270	,393
3 The local population's support for change	,535	,531	,345	,326	,288	,304	,257	,444
4 The local population's capacity to change	,524	,554	,374	,265	,333	,287	,261	,442
5 Availability of knowledge resources and education	,568	,509	,349	,371	,379	,259	,209	,452
6 Offering local products in combination with experiencing local craftsmanship	,536	,498	,382	,401	,378	,315	,258	,446
7 Making optimal use of environmental resources (environmental sustainability)	,374	,411	,528	,435	,302	,308	,250	,418
8 Maintaining ecological processes and helping to conserve natural resources and biodiversity	,351	,326	,430	,376	,402	,335	,288	,414
9 Adapting to changing climate conditions	,325	,361	,394	,199	,238	,313	,281	,373
10 Exploiting opportunities created by changing climate conditions	,271	,296	,422	,216	,309	,297	,258	,330
11 Participation of all stakeholders in tourism planning	,552	,665	,359	,365	,312	,365	,337	,433
12 Collaboration of all stakeholders in decision-making processes	,639	,704	,411	,398	,300	,357	,366	,481
13 Creation of innovative vision	,504	,388	,313	,503	,543	,419	,400	,654
14 Formation of destination's innovation strategy	,501	,435	,324	,574	,581	,415	,436	,661
15 Energy policies that support usage of alternative sources of energy	,412	,420	,590	,350	,343	,242	,243	,291
16 Transportation policies that favor alternative transportation modes and public transportation	,421	,449	,572	,412	,445	,339	,288	,348
17 Environmental policies that promote sustainable development	,425	,523	,621	,405	,222	,307	,278	,266
18 Taking into account the interests of the local community	<b>1,000</b>	,696	,451	,356	,317	,350	,287	,495
19 Organizational structure that supports involvement of all stakeholders	,696	<b>1,000</b>	,536	,402	,307	,330	,342	,471
20 Implementing new practices in environmental management	,451	,536	<b>1,000</b>	,376	,315	,406	,357	,281
21 Web portal providing rich user experience	,356	,402	,376	<b>1,000</b>	,735	,542	,455	,649
22 Dynamic content on the web portal	,317	,307	,315	,735	<b>1,000</b>	,556	,548	,635
23 Logistics adapted to changing demand (last minute reservations, new reservations systems, etc.)	,350	,330	,406	,542	,556	<b>1,000</b>	,819	,613
24 Tourism products adapted to changing demand (last minute reservations, increased price sensitivity, etc.)	,287	,342	,357	,455	,548	,819	<b>1,000</b>	,564
25 Creating distinctive image of the destination	,495	,471	,281	,649	,635	,613	,564	<b>1,000</b>