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Vanda Maráková

Wyższa Szkoła Bankowa w Poznaniu
Wydział Zamiejscowy w Chorzowie
e-mail: vanda.marakova@umb.sk

Hussam Musa

Wyższa Szkoła Bankowa w Poznaniu
Wydział Zamiejscowy w Szczecine
e-mail: hussam.musa@umb.sk

Networks in Tourism – the Case of Regional Networks at a Mountain Destination

Summary. The ongoing globalization processes and the toughening competition in the tourism industry drive the trend for networking among stakeholders at tourist destinations. Destination stakeholders seek balance between competition and cooperation, and make continued efforts at finding an optimal organizational structure. In this context, the paper proposes a methodology for identifying the central actors in a tourism network that is based on an analysis of tourism stakeholder networks and their selected quantitative characteristics alongside in-depth interviews with destination stakeholders. The method is designed to widen the research perspective on tourism networks and provide valuable insights for further examination of destination structures.

Keywords: network, network analysis, tourist destination, public and private stakeholders

1. Introduction

Tourism is a complex phenomenon. It is a temporary interaction between guests and a hosting destination which is made up of an amalgam of stakeholders, partially or fully, and directly or indirectly involved in tourism. A great diversity of public, private and hybrid parties are involved in tourism providing services, infrastructure, information and primary and secondary tourist products vital for a successful tourism destination. Still, the tourist perceives experiences and consumes the destination as an integrated entity [Buhalis 2000; Haugland, Ness, Grønseth & Aarstad 2011]. To grasp the complexity of managing a tourist

destination, the concept of tourism networks has seen a rise in popularity during the last decades.

Based on the critical literature review on tourism networks supported by a bibliometric citation network analysis, clusters of studies will be distinguished that use the same theoretical and/or methodological approach to tourism network studies. This so-called modularity analysis will also reveal how generated knowledge is disseminated within the scientific community. Empirical evidence will be presented in the format of case study from the leading mountain destination in the region of Carpathian Mountains – High Tatras, with the specific focus on the identification of central stakeholder within tourism network.

The research aim of the paper is to identify the network performance, leaders in selected mountain destination and to determine a dominant position of one stakeholder, who influences the leadership in destination. The paper will be concluded with some recommendations for further research as well as managerial implications.

2. Theoretical background

Within the concept of destination management co-operation theories create a framework for the scientific discussion. To ensure the competitive position of tourism destination it is to a crucial importance create efficient networks linking various stakeholders with particular aims. The quality of network is determined not only by the intensity of relationships, quantity of joint activities performed but as well qualitative aspect of collaborative efforts.

2.1. Network Performance in Tourism

An important issue in this debate is the persistence of a gap between the various stakeholders in tourism. This gap was already noticed in the mid-seventies, when Gunn [1977] raised awareness of a lack of public-private collaboration in tourism planning which she considered as an impediment for sustainable tourism development. Since then the relationship and collaboration between stakeholders gradually became an independent area for research in the field of tourism, with an acceleration in published studies since the turn of the century after some key publications on stakeholder collaboration [Bramwell & Lane 2000; Jamal & Getz 1995], and the role of public and private stakeholders in the organisation of tourism destinations [Hall 1999; Tremblay 1998] were published. In these years, the network concept found its way into tourism management studies as it could provide a '"new" and "positive" mode of coordination that needed to be distinguished from markets and hierarchies' [Provan & Kenis 2008: 233]. Hall [2005:

179] defines a network as 'an arrangement of inter-organisation cooperation and collaboration.'

In the research of Mouzas, Henneberg and Naudé [2008] we highlight the three various perspectives towards developing network insight. In the context of the author's research presented *network perspective* is relevant. "The network perspective is entrenched in the recognition of markets as networks of exchange relationships. The view of markets as interconnected networks of exchange relationships prompted a whole generation of researchers to analyse and describe the characteristics of these networks."

In the literature several positive values are attributed to tourism networks. Networks are proposed to function as systems which can organise and integrate tourism destinations, imply benefits for participating tourism organisations, enhance destination performance and quality and stimulate the provision of 'wholesome and memorable experiences' for tourists [Zach & Racherla 2011: 98]. The network approach has proven useful in various fields, among others sociology, economic geography and political sciences, with important contributions in the academic debate and resulting in all kinds of policy measures following this debate. In other fields, however, the network concept is still in a more immature phase. Provan and Kenis [2008: 229] argue that for example in public administration 'despite much progress made by researchers studying networks over the past 15 years and more, there is still a considerable discrepancy between the acclamation and attention networks receive and the knowledge we have about the overall functioning of networks'. In tourism, a growing body of work has been devoted to uncovering the potential of the network concept for tourism development and management [e.g. Albrecht 2013]. The first studies suggest that the tourism industry needs a network approach, because this would help destinations to function in a changing, complex and competitive world [Cawley, Marsat & Gillmore 2007; Gretzel & Fesenmaier 2003]. Inspired by Porter (1990), it was claimed that tourism destinations 'have a greater chance to be competitive on a national and global basis when their businesses are competing and collaborating at the same time' [Novelli, Schmitz & Spencer 2006: 1142]. Working together in a complex system of simultaneous competition and collaboration demands a well-managed network of public and private stakeholders [Vargo & Lusch 2004]. Specific type of cooperative relationship is referred to as coopetition.

Coopetition represents the simultaneous use of collaboration and competition in order to achieve better collective and individual results, or gain a competitive advantage [Czakon & Czernek 2016]. The authors present an indeed interesting dynamic model of the five trust-building mechanisms in network coopetition. The verification of the model in case of tourism networks in Poland proofed that adoption of coopetition at the network level involves trust in a complex way.

It was also claimed that the network perspective has the potential to serve as a tool which fosters innovation, knowledge sharing, competitiveness and sustainable economic development for the involved stakeholders [Novelli et al. 2006; Pavlovich 2003]. However, in sharp contrast with the universal optimistic claims about the value of a network approach for the development of tourism destinations, the scientific effort to provide evidence for these claims is still in its infancy. The literature is divergent and sometimes contradictory in its recommendations. Albrecht [2013] for example, argues in her review of tourism network studies in favour of a research agenda with more longitudinal, qualitative studies. On the other hand, Baggio, Scott and Cooper [2010], argue that there is a shortage of quantitative social network analysis. Del Chiappa and Presenza [2013: 2] add a new perspective to this discussion by arguing that aside from this quantitative-qualitative divide, the field of studies can be divided into studies delving into the "evolution of businesses, product development, packaging and opportunities for further development" and networks as a "channel for managing public–private relationships and understanding the structures of tourism and destination governance." The different positions on tourism networks seem to exist parallel to each other and are seldom evolving into an academic debate. These contrasting claims and lack of agreement in the field of tourism network studies suggest that there might be too little cross-fertilization between the different approaches. It also seems that in the wider field of tourism network studies the network is conceptualised in different ways. Summarizing, discussions on the conceptualisation of tourism networks [Presenza & Cipollina 2010] and the type of methodology that should be applied to study networks [Albrecht 2013; Scott, Baggio & Cooper 2008] have not yet been settled. Some vital questions are left unanswered. Among these is the most important question whether or not a **network approach** to destination management really **leads to competitive advantage** for the destination and its related tourism organisations.

The origin for the growing popularity of studies into tourism networks stems from a number of reasons. First, and perhaps most important, there has been an outcry for an alternative to public sector management of destinations due to the rise of a more managerial perspective on governance [Hall 1999; Wray 2009]. A system of self-management by (private) local stakeholders was argued to replace public sector management [Tremblay 1998]. The role of the government should be restricted to the coordination of economic and social agents [Melián-González & García-Falcón 2003] and an active role as network brokers is suggested [Lemmetyinen & Go 2009; Vanneste & Ryckaert 2011]. Competitive advantage is thought to originate from a successful alignment of the intra-destination relationships and interdependencies [Saxena 2005; Zehrer & Raich 2010], while managing stakeholder relationships is considered in need of a network perspective on management. Secondly, there is a general belief that participating in a **collabo-**

rative tourism network produces benefits for tourism organisations [Morrison, Lynch & Johns 2004; Novelli et al. 2006). Through increased inter-organizational learning and knowledge sharing, social capital is acquired. This is believed to increase the competitive position of tourism firms [Halme 2001], because collaboration reduces transaction costs for network firms [Erkuş-Öztürk 2009] and creates added value and enhances the tourist experience [Fuglsang & Eide 2013] in destinations with a high level of networked collaboration among its tourism organisations. Thirdly, in order to reap the benefits of networked collaboration, perceiving the intra-destination organisation as a network helps to grasp the complex nature of stakeholder relationships. The supply structure of the tourism destination is characterized by a wide variety of complementary and competing stakeholders who are interrelated and, together, shape the tourism product [Adiyia et al. 2015; McCabe, Sharples & Foster 2012]. These organisations have a relationship of dependency because 'suppliers pass customers from one organisation to another in order to provide a comprehensive tourism experience [Pavlovich 2003: 203]. Hall [2005] points out that a network may turn into a physical "consumption route" sending tourists from one firm location to the other and in so doing creating an integrated tourism product offering. Considering that a tourist destination is perceived as a holistic product by tourists [Haugland et al. 2011], the integration of a tourist destination is important as tourists expect a smoothly organised value chain in which the different elements of the tourism experience are coordinated and aligned to suit the needs of the tourist. Destination management for this reason cannot focus on single entities within a destination, but should adopt a network perspective to include a wider selection of stakeholders and their interdependencies in a destination. "The success of a destination thus depends on the seamless coordination of the players comprising the tourism value chain" [Zach & Racherla 2011: 98]. In sum, it is the overall inter-organisational network configuration that leads to competitive advantage [Denicolai, Cioccarelli & Zucchella 2010; Hall 2005]. Fourth, the increasing complex nature of tourism calls for a management system which is able to respond to change and volatility to function in a continuously changing environment [Dwyer et al. 2009]. Tourism is extremely sensitive to change of context beyond the sphere of influence of local tourism actors. The demand for a destination is influenced by a large set of variables ranging from changing tourists' tastes to the entry of new and alternative destinations competing for the same clientele. Political disturbances or natural disasters can negatively alter the attractiveness of destinations [Miller & Ritchie 2003] while positive reviews by travel media can put destinations on the mental maps of potential visitors [Buhalis 2000]. A tourism destination is thus highly dependent on the wider, unpredictable and unmanageable context. Being flexible, resilient and able to adapt to change seems to be the only way out of potential destination decline. Destinations characterized by network collaboration are argued

to be more able to cope with these external influences. Not only can networks provide economies of scale for small and medium enterprises, also networked collaboration is argued to increase resilience of the stakeholders involved [Luthe, Wyss & Schuckert 2012] and innovative products and policies are more likely to be developed by a networked collaboration of stakeholders [McCabe et al. 2012]. From this theoretical exploration it may be concluded that – in principle – the tourism industry might benefit from a network approach. Now it is time to explore to what extent the published literature lives up to these expectations.

2.2. Tourism Organisation in an Network Context

We define a network as "a set of nodes and the set of ties representing some relationship, or lack of relationship, between the nodes" [Brass, Galaskiewicz, Greve, & Tsai 2004: 795]. In our context, a node represents an organisation operating in the tourism industry, and a tie is an interfirm collaborative relationship. Based on the structural characteristics of organisations' network positions, a variety of metrics can be calculated. We explore two network constructs: degree centrality and closeness centrality. Degree centrality describes the extent of collaborative activities and the number of direct ties the focal firm has with other firms [Freeman 1979; Nieminen 1974]. The more direct ties a firm maintains, the higher is its degree centrality. If firm A has relationships with B and C, and firm B has relationships with A, D, E, and F, firm B has greater degree centrality than firm A, indicating that firm B is more active in the network than A. Closeness centrality measures a firm's position in the extended network. It is the firm's average network path length or "closeness" to reach all other firms in the network [Freeman 1979; Wasserman & Faust 1994]. Closeness centrality can be exemplified as follows. If firm A collaborates with firms B, C, and D, but these firms merely cooperate with a few other peripheral actors in the network, or they merely collaborate with each other within a local cluster, this implies that firm A will also tend to be peripheral in terms of path length to all other actors in the network. On the other hand, if firm A collaborates with E, F, and G, and these actors are well connected to other central actors throughout the network, this will increase firm A's closeness centrality. Taken together, degree centrality describes the focal firm's direct relationships, i.e. primarily local intra-destination ties. We have already discussed the fact that a tourism destination provides a "total product" that is coproduced by multiple organisations; thus, a organisation's direct relationships are important. Furthermore, the strong assumption in the literature that local collaboration between stakeholders is important for developing a destination brand could be extended to individual organisations' practice of co-branding. Closeness centrality describes an organisation's connectivity beyond its direct ties in the "whole" network that also involve inter-destination ties. Networks are effective for the diffu-

sion of work practices [Brass et al. 2004] that can even span geographical regions [Ness, Aarstad, Haugland & Grønseth 2014]. It is, moreover, commonly held that information about market and industry trends provided through network connections may have implications for organisations' strategies. Coining the concepts of degree and closeness centrality enables us to assess whether organisational practices are adopted as a function of an inter-organisational network position that potentially spans the local sphere. The case study that will be presented will be enriched by determining the third parameter – betweeness centrality.

3. Methodology

Network theory, as well as network analysis, originates from the field of mathematics. The network analysis is the application of matrix and graph theory [Hanneman & Riddle 2005]. It uses primarily the graphic display that consists of nodes to represent actors (stakeholders), and lines to represent relations (cooperation, ownership). Except of the graphical interpretation, the network analysis can describe the relationships by quantitative characteristics [e.g. Baggio et al. 2010).

So far network analysis has been mainly used in the economic geography [e.g. Barrat, Barthélemy, Pastor-Satorras & Vespignani 2005], sociology [e.g. Watts 2004] or physics [e.g. Albert & Barabási 2002]. As emphasised by Van der Zee and Vanneste (2015) the applicability of network analysis in other scientific fields, fuels the estimation that its application could provide valuable contributions for tourism studies. It was already proven by several studies. Palmer [1996] examined the building of networks by public and private tourism sector organizations. Scott et al. [2008] dealt with the structural properties of inter/organizational networks within destinations, while Presenza and Cipollina [2010] analysed the variety of relations existing in tourism networks, identified as complex and mutable entities, where a vast range of stakeholders coexist. Baggio et al. (2010) reviewed the methods of the science of networks with an application to the field of tourism studies. Moreover, Beritelli, Strobl and Peters [2013] focused on the networks of interlocks between local and non-local (outside of the region, outside of the country) board directors for a set of salient organizations in six tourism destinations in Austria and in Switzerland and the research of del Chiappa and Presenza [2013] was aimed at using the network analysis to investigate a relationship and structural perspective to assess relationships among stakeholders in Italy. Grama and Baggio [2013] proposed the insights on network science from a theoretical and a practical point of view so they can better inform governance policies in complex dynamic environments.

In order to evaluate the network performance in tourism organizational structure of destinations, the authors propose to use the following sequence of steps.

(1) Identifying all tourism stakeholders in a destination, (2) Finding out the relationships of these stakeholders in terms of cooperation, dependency, (3) Finding the leaders in destination network (4) Analysing in depth the annual reports of the private sector leaders in the destination focusing on the ownership of the core product of the destination. The core product of mountain destination considers: ski lifts, additional ski tourism services, management services and events connected with ski products.

The proposed methodology will be tested on selected Slovak mountain destination. According to Slovak Tourism Development Strategy to 2020, mountain destinations in Slovakia represent major tourism attraction not only for domestic, but also for international tourists. There are in total 107 mountain destinations, ranging from small local resorts to big destinations with international significance. The case study focuses on the important Slovak mountain destination in terms of its primary and secondary supply. Therefore all mountain destination in Slovakia were classified by factor analysis according to their characteristic features: altitude and vertical drop and length of cable cars and lifts, length of ski slopes and lift capacity into clusters.

Concerning the altitude and vertical drop (primary supply), resorts Tatranská Lomnica and Štrbské Pleso differs from other Slovak mountain destinations. These two resorts together create the internationally known destination the High Tatras. However, concerning the infrastructure it is the destination Liptov – Jasna which has the biggest length of cable cars, ski slopes and lift capacity. The research sample consist of the destination High Tatras.

The tourism stakeholders in the destination were identified based on the lists provided by the local tourism associations and destination management system (information system). As local tourism associations should have the best knowledge of destination stakeholders and destination management system is used to provide information to visitors on the attractions and services, it can be assumed that the number of identified stakeholders come close to the actual number. In total 195 stakeholders were identified in the High Tatras. These stakeholders include DMOs, tourism associations, accommodation and catering facilities, sport and recreational facilities, cultural facilities, transport associations, municipalities and travel agencies.

The relationship of these stakeholders were identified based on the methods used by Baggio et al. (2010). Several sources of information were used. These include destination brochures, internal materials of destination management organisations, web sites of tourism stakeholders and destination management system. The relations were identified on a binary basis, not taking into account the intensity of cooperation and were proceed by social network analysis. All data were validated through in-depth interviews with board of directors of tourism

associations and local tourism experts. Such a network formed on the basis of these criteria can be considered as the **actual network of the destination's stakeholders**.

In order to find the **leaders** in the network, **centrality measures of network analysis** were used. Many network researchers have identified the impact of central position of actors in the network [e.g. Abdel-Ghany 2012; Balkundi & Kilduff 2005; Borgatti 2006]. Actors who have the central position are more active, have shorter paths and have more ties with other members of network. Centrality measures are important indicators pointing at the privileged positions of some stakeholders compared with other members of the network. This special privilege is attributed only in relative terms, as there is no absolute value to indicate high vs. low privilege [Todeva 2006]. The most commonly used centrality measures are degree centrality (C_D), betweeness centrality (C_B) and closeness centrality (C_C).

$$C_D(i) = d(n_i) = \sum_j X_{ij} \tag{1}$$

where:

$C_D(i)$ – degree centrality of a stakeholder i

$d(n_i)$ – number of relations that a node has

$$C_B(i) = \frac{\sum_{j \neq k} g_{jk}(i)}{g_{jk}} \tag{2}$$

where:

$C_B(i)$ – betweeness centrality of a stakeholder i

$g_{jk}(i)$ – the number of shortest paths connecting j passing through i

g_{jk} – total number of shortest paths

$$C_C(i) = \left[\sum_{j=1}^{N} d(i,j)\right]^{-1} \tag{3}$$

where:

$C_C(i)$ – closeness centrality of a stakeholder i

$d(i,j)$ – minimal path from i to j

Network centrality measures structural importance of actors and indicates which actor can be regarded as the one on the centre of networks [Borgatti 2006].

When leaders in the destination network were identified, the in-depth analysis of annual reports and business register was undertaken. The analysis was focused on the private stakeholder with the highest centrality measures, where the ownership of resources creating the core tourism product was examined.

4. Results

The High Tatras are located in the Carpathian Mountains and belong to the most important mountain destinations in the Central and Eastern Europe. With their capacity and number of ski slopes they are the highest winter sport destination in the region of Central Europe.

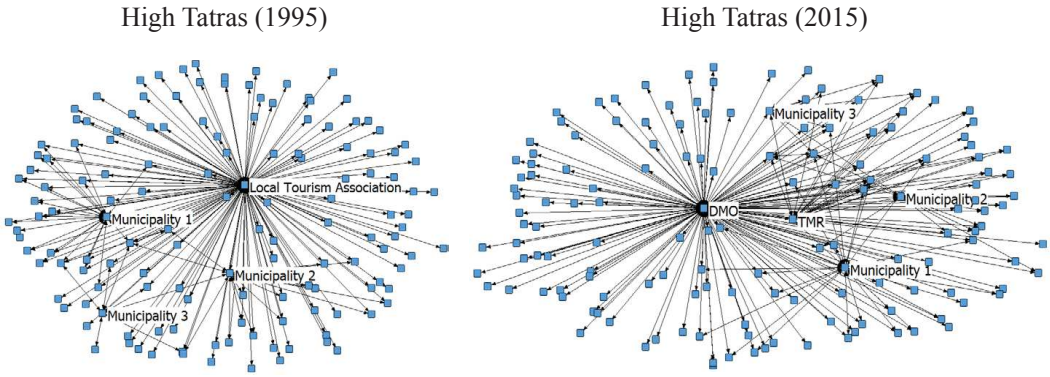
Tourism development in the High Tatras has a long tradition. This destination has been a place of winter sport and health tourism. In 1935 and 1970 the world ski championships took place in Štrbské Pleso which boosted the visitation and created the image of winter sport destination. In 2014 this destination was a co-organizer of 27th Winter Universiade along with Spanish Granada. The area of High Tatras is due to its specific climate recognized as climatic spa.

Following the key steps of methodological framework, the retrospective network analysis is applied in order to see the development of networking processes within destination. The references time period are the years 1995 and 2015. The figure 1 shows the graphical interpretation of the destination structures in the year 1995 indicates that local tourism associations (public-private stakeholder) and municipalities (public stakeholder) possess substantial power. However, in 2015 there is a significant change towards more centralised model as one private stakeholders is gaining more powerful position.

These findings are underlined situation is supported by discovering the leaders in the network, using degree centrality, closeness centrality and betweenness centrality (Table 1). In degree centrality the power is based on stakeholder degree. Stakeholders who have more ties have greater opportunities because they have choices. This autonomy makes them less dependent on any specific other stakeholder in destination, and hence more power. When examining the degree centrality over time the shift from pure public leaders to engagement of private stakeholder in destination leadership is visible. The association TMR is in 2005 the second most powerful stakeholder in the examined destinations.

The second reason why a stakeholder can be more powerful than the other stakeholder in the network is that one stakeholder is closer to more stakeholders than any other stakeholder, which is measured by closeness centrality. Power can be exerted by direct bargaining and exchange. But power also comes from acting as a reference point by which other stakeholders judge themselves, and by being a centre of attention. In examined destinations, the rise of private stakeholder (TMR, Inc.) is inevitable, which is caused by the interdependence of financial capital, activities and performed innovations (new investments in ski lifts, development of new product packages and loyalty program) by this stakeholder in the destination. This stakeholder is able to reach other stakeholders due to the shorter path lengths between cooperating stakeholders. This structural advantage can be

Figure 1. Graphical interpretation of destination structures in examined destination



Source: own elaboration.

Table 1. Centrality measures in destination High Tatras in the years 1995 and 2015

Centrality measure	1995			2015		
	Local Tourism Association	Municipality 1	Municipality 2	DMO	TMR	Municipality 1
Degree centrality	74.731	12.366	9.140	75.000	19.681	13.298
Closeness centrality	2.173	2.144	2.140	2.379	2.348	2.345
Betweenness centrality	55.877	1.423	0.852	56.638	5.091	1.747

Source: own elaboration.

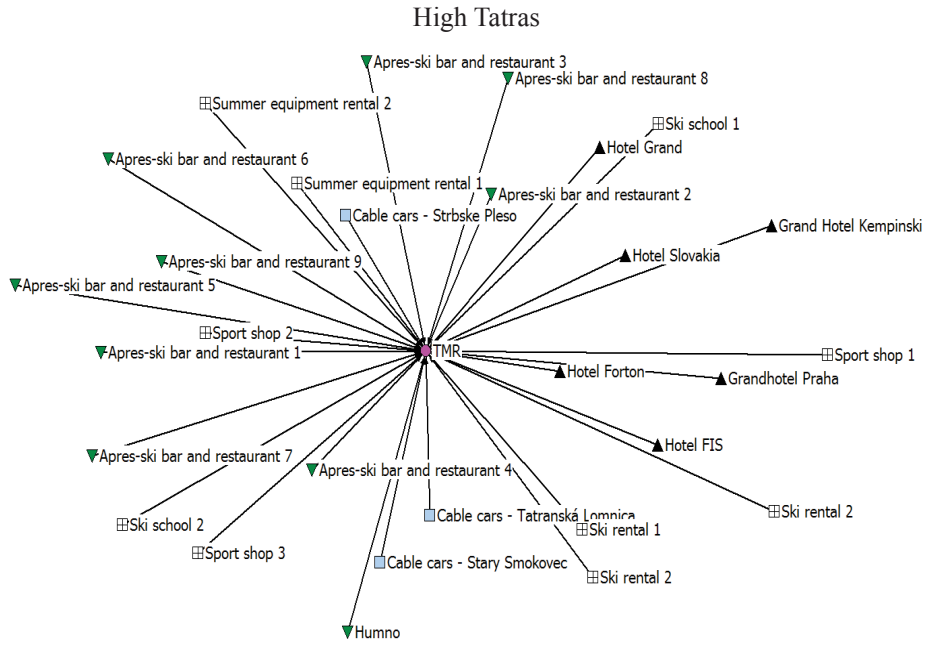
translated into power. This logic of structural advantage underlies approaches that emphasize the distribution of closeness and distance as a source of power.

The third reason that a stakeholder is in advantaged in the network is because it lies between each other pairs of stakeholders, and no other stakeholder lie between it and other stakeholder. Although the local tourism associations have the highest betweeness centrality, the second most powerful stakeholder is private company TMR. This centrality measure indicates the rising dependency of other stakeholders on one private stakeholder.

The ability to find the most powerful stakeholders allows to deeply examine its ownerships and contracts and thus to find out whether the private stakeholder controls the most important resources in the destinations. By examining deeply the annual reports of the stakeholder, the ownership of the tourism resources in examined destinations was identified (Figure 2).

The ownership of the resources is concentrated on the ski product. The private stakeholder owns all cable cars and ski lifts, which belongs to the most important

Figure 2. Ownership of the resources by the dominant private stakeholder in examined destination



Source: own elaboration.

winter tourism infrastructure. Moreover the ownership of sport and recreational facilities (ski rental, ski schools, summer equipment rental), ski-in/ ski-out hotels, as well as après-ski bars on the ski slopes allows the stakeholder to create the total tourism product from owned businesses.

5. Conclusions

The theoretical contribution of the paper reflects to the topic of structures of tourism destination that can be perceived as business networks where developing network insight three management perspectives can be applied (networks, knowledge and collective mind) [Mouzas et al. 2008]. Our findings support prior literature in principle that the tourism industry might benefit from a network approach.

The research results in identifying the network performance and leaders in destinations and shows the ability to find a dominant position of one stakeholder, who influences the leadership in destination. Although the DMOs in examined destination High Tatras are nowadays leaders in destination management, the monopoly dominance of the one private stakeholder is strengthening. Due to the property of core tourism resources, implemented innovations, the private stakeholder reduces the power of DMOs.

The results of the research indicate that the network analysis is an appropriate instrument to determinate the organizational model of a tourism destination. Moreover, the findings revealed that the method can be used to identify and measure the core organization and its relationships. Thus the approach applied and its results can be transferred to measure the reengineering processes in many European traditional tourism destinations in Poland, Slovakia and other countries. The managerial implications derived from the research presented can be that the network analysis is the proper method to be used by the management of destination management organisations to optimize internal processes (structures, leadership, power etc.) in order to enhance its competitiveness in the global market.

The limitations of the proposed method lie in the ability to find the relevant in-depth information about the destination and its stakeholders. Moreover, the research sample of the work contains the mature mountain destination, where the destination structure and the core product are easier to identify. Therefore the implications for further research arise. It would be recommended by the authors to examine other types of destinations (rural, urban, etc.) and also destination in different phases of destination lifecycle. The use of proposed centrality measures to find the leaders can be supported by other quantitative characteristics of network analysis, e.g. the efficiency of the network.

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Sieci w turystyce – studium przypadku sieci regionalnych w destynacji górskej

Streszczenie. Silna konkurencja i globalizacja w branży turystycznej stanowi presję na tworzenie sieci pomiędzy podmiotami zainteresowanymi rozwojem destynacji turystycznych. Zainteresowane strony poszukują równowagi między konkurencją i współpracą w celu znalezienia optymalnej organizacyjnej struktury. W artykule przedstawiono metodologię badań, koncentrując się na identyfikacji głównych aktorów sieci w turystyce. Analiza sieci interesariuszy turystyki i jej wybranych cech ilościowych, wzbogacona o wywiady z zainteresowanymi stronami, stara się rozszerzyć badania w zakresie sieci w turystyce i daje cenne wskazówki dotyczące przeprowadzenia dalszych badań sieci regionalnych w branży turystycznej.

Słowa kluczowe: sieć, analiza sieci, destynacja turystyczna, aktorzy publiczni i prywatni