

Abstract. *While unspoiled natural landscapes remain a clear attraction for the guests of rural tourism, the motivation behind travel is shifting from seeking pleasure towards acquiring new experiences and knowledge. In the market of rural accommodation services this shift in demand improves the market position of those unique hosts who can provide high quality services. It also implies that accommodation providers can only improve their chances of success via continuous innovation.*

Based on the review of the academic literature, we constructed a model that describes the innovation capability maturity of rural accommodation service providers. We first adapted Essmann's (2009) innovation capability maturity model to identify five main capability areas relevant to tourism services and classified the indicators into these capability areas. We then applied these indicators to compile a survey questionnaire for rural accommodation service providers in one of Hungary's outstanding rural tourism destinations, Veszprém County, and used the findings of the survey to refine our model through principal component analysis. Finally, we identified the indicators that drive the five relevant innovation capability areas and explain the innovation capability maturity of rural accommodation service providers in Veszprém County, Hungary. Based on the above we make the following statement: The innovation capability maturity of rural accommodation service providers in Veszprém county, Hungary, can be described by the following capability areas: market knowledge, training, managing possibilities, guest orientation and rationality. The result of our analysis helps rural accommodation providers understand more about innovation and be able to better satisfy the needs of their customers.

Keywords: innovation capability, maturity, rural tourism, accommodation service providers, Veszprém County, Hungary.

INNOVATION IN RURAL TOURISM: A MODEL FOR HUNGARIAN ACCOMMODATION PROVIDERS

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1. Introduction

Tourism plays an important role in the economy of all, however structurally diverse, OECD countries as it promotes economic growth and increases employment through travel and the trade of touristic services (OECD, 2000). The sector's central economic role as well as the trend of economic globalization compels nation states to increase touristic competitiveness, primarily through innovation (Carvalho-Costa, 2011, p. 24).

Based on the academic literature, we can make a clear distinction between innovation in services, including innovation in tourism services, and product innovation in manufacturing. Several authors explain this difference by highlighting the less technological characteristic of services innovation vis-à-vis manufacturing (Sundbo-Gallouj, 1999; Sundbo, 2007; Ark et al., 2003; Carvalho, 2008). Sundbo (2009) and Gallouj (2002) emphasize the more gradual modifications in the product (service) in both services and tourism innovation. While innovation in manufacturing usually happens through giant leaps ahead, often as a result of technological breakthroughs, services innovation occurs incrementally in small steps. Services innovation emerges from the practice and the experiences gained in the process of working with clients. Therefore, the client-oriented attitude and behavior of the sales staff are key components in increasing customer satisfaction (Sundbo, 1997; Sundbo-Darmer, 2008).

The number of studies on innovation in touristic services has been on the rise since the 1990s (Hjalager, 2008). The innovative business practices of large touristic companies are more frequently discussed in the academic literature than those of their smaller peers, due to the fact that large companies are usually faster to realize new ideas and, thus, gain competitive advantage (Hjalager, 2002, p. 471). Research on innovation in rural tourism, however, is still in its early stage. Existing studies are incomplete or only case studies. That being said, the Scandinavian scholars have already achieved significant results (Hjalager, 2002, 2006; Sundbo, 2007) which may be used as starting point in this research.

Rural tourism covers a range of services provided through the cooperation of many actors including accommodation providers, other service providers as well as local residents. These actors all contribute to creating the harmonious and complex experience, which encompasses all travel-related processes from the guests' choice of destination (e.g. pre-booking telephone inquiry, practical menu system of the hosts' website) to all the stimuli and impressions from the stay (e.g. the hospitality of the locals, the opening hours of the souvenir shops, the tidiness of streets and squares, the choice of programs).

Rural accommodation is also more than just a room service. Most guests expect extra services and memorable experiences beyond staying in the country house. Satisfying the growing needs of customers, therefore, requires from hosts and other regional service providers to cooperate, be open to change, be creative and innovative. Marketable accommodations with returning guests are open to the changing needs of their customers, are ready to cooperate with the right partners and innovate when necessary.

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Besides expanding the theoretical framework of rural tourism, the purpose of this study is to assist rural accommodation service providers in their work. This article highlights those capability areas that they have to pay more attention to in order to be capable of implementing constant innovation. In this paper we describe a model of innovation capability maturity of rural accommodation service providers and apply the findings of a survey among rural accommodation service providers in Veszprém County, Hungary, to refine our model. First, we review the literature in order to identify the assumed capability areas that determine the innovation capability maturity. Since there is a gap in the literature of innovation capability maturity models in terms of their application to the rural context, we adapt a previous general model to the rural accommodation service industry. We present Essmann's (2009) innovation capability maturity model and modify and restructure the capability areas in a way that enables us to apply the model to the rural context. Then, we construct indicators that describe the innovation capability maturity of rural accommodation service providers and use these indicators in a survey among service providers in Veszprém County, Hungary. Finally, we refine our model, based on the results of the survey, by calculating correlation coefficients and conducting principal component analysis. Our research hypothesis is that the innovation capability maturity of rural accommodation service providers in Veszprém County, Hungary, can be described by the following capability areas: market knowledge, training, managing possibilities, guest orientation and rationality.

2. Innovation in rural tourism

Hjalager et al. (2008, p. 42) argue that the system of innovation can be analyzed by examining its main components: the participants in the system, their actions and interactions as well as the driving forces behind innovation. In 2008, six authors from five different Scandinavian countries – Denmark, Finland, Iceland, Norway and Sweden – published a sector analysis based on case studies along with a research report with economic policy recommendations, in which they examined 10 exceptionally successful tourism destinations as spectacular examples of innovation in tourism (Hjalager et al., 2008). The methodology of the case studies relied on the identification of the participants in the innovation system and their relationships, the mapping of the driving forces of innovation and the classification of the different innovation types.

The major driving force in the innovation process is the entrepreneurial spirit, characterized by the drive to initiate new investments and activities to keep the enterprise alive (Hjalager et al., 2008, p. 42). Another driving force is profit maximization. The classical profit motivation can be identified in most examined destinations but the reinvestment of profits in the broader local environment is also a reoccurring phenomenon (Hjalager et al., 2008, pp. 44-45). In certain cases, the initiatives and volunteering of locals is another important driving force. For example, the financial and organizational structure of the Roskilde Festival was built on the basis of a wide network of volunteer groups (Hjalager et al., 2008, p. 45). In some

cases, innovation is driven by the participation of consumers. The owners of Opplev Oppdal, for instance, provide hiking or team building groups with several new, customized services, but the idea of an Ice Hotel is also the brainchild of visitors. Volunteering music fans carry out the pre-stage screening of avant-garde music groups wishing to play at the Roskilde Festival, and customers handle the customer feedbacks in the Mountain Destination of Åre or the Whale Watching in Northeast Iceland (Hjalager et al., 2008, p. 47).

Rønningen (2010, p. 16) understands innovation as a complex process, similarly to Hjalager et al. (2008), and emphasizes that the pace of innovation is rather slow in the touristic sector, unlike in other services. He provides a comprehensive review of the literature on innovation in tourism and cites authors (Hjalager, 2002) in Rønningen, 2010, p. 17; Fusing-Jensen et al., 2001 in Rønningen, 2010, p. 17) who point out that small enterprises do not always possess the knowledge base of innovation and are also unwilling to participate in cooperation structures, which inhibits the exchange of experiences as well as their knowledge sharing and innovation capabilities. Hjalager (in Rønningen, 2010, p. 16) explains this low level of innovation in tourism by the mutual lack of trust among touristic enterprises. Certain authors (Hjalager, 2002 in Rønningen, 2010, p. 17; Fusing-Jensen et al., 2001 in Rønningen, 2010, p. 17; Pechlaner et al., 2005 in Rønningen, 2010, p. 17) suggest implementing a cooperation strategy to enhance innovation capability. They argue that cooperation provides for the flow of knowledge and enables involved parties to lower their transaction costs. Moreover, an empirical study by Pechlaner et al. (in Rønningen, 2010, p. 17) demonstrates that any cooperation that promotes knowledge and experience sharing expands the combined innovation capacity of businesses. Nevertheless, Sorrensen (in Rønningen, 2010, p. 17) opines that differences in the density and intensity of cooperation networks fail to explain the differences in the innovative behaviour of enterprises.

2.1. Innovation determinants and capability in rural tourism

The complex nature of innovation calls for an investigation of the components of innovation capability from multiple perspectives. The success in the competition of the 21st century lies in the exploitation of the potential of new ideas (Hamel, 2000; Maier et al., 2012). Kim (1997) defines innovation capability as the ability to create new and useful knowledge on the basis of existing knowledge. Burgelman et al. (2004) give another definition describing innovation capability as comprehensive organizational characteristics that support and promote innovation strategy. Atoche (2007) expands the former by defining innovation capability as a higher order “capability of integration” that shapes and manages the different organizational capabilities and resources that encourage innovation activity.

In his analysis of rural tourism in Norway, Rønningen (2010, p. 18) emphasizes the following factors enhancing innovation:

- The innovation capability of small enterprises is smaller than that of large ones.

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- Cooperation boosts innovation capability.
- Knowledge and competences are decisive.
- Government subsidies may improve the innovation capability of enterprises.
- Export orientation leads to product innovation.
- Market orientation and the involvement of employees may enhance innovation.

We illustrate in Table 1 the factors deemed most important in facilitating innovation by the various authors, together with academic references and capability areas considered crucial for innovativeness.

Table 1

Factors influencing innovation

Market knowledge	Essmann, 2009	Rønningen, 2010	Chikán, 1998	Kaplan and Warren, 2010
	Ottenbacher et al., 2005	Brackenbury, 2006	Williams, 2010	Quadbeck and Seeger, 2007
	Hjalager et al., 2008	Jeffrey et al., 2009	Weiermair, 2008	Spielkamp and Rammer, 2006
Training, competence	Essmann, 2009	Kim, 1997	Cohen and Levin, 1989	Hjalager et al., 2008
	Francis, 2005	Ottenbacher et al., 2005	Atoche, 2007	Quadbeck-Seeger, 2007
	Rønningen, 2010	Carvalho, 2008	Csath, 2004	
Cooperation	Essmann, 2009	Keller, 2008	Bell and Pavitt, 1985	Hjalager et al., 2008
	Pechlaner and Bachinger, 2010	Ottenbacher et al., 2005	Scott et al., 2008	Porter, 1993
	Rønningen, 2010	Weiermair, 2008	Flagestad, 2001	Hall et al. (eds.), 2005
	Jancsik, 2007	Inzelt and Szerb, 2003		
Decision making	Essmann, 2009	Essmann and du Preez, 2010	Atoche, 2007	Bell and Pavitt, 1985
	Francis, 2005			
Risk taking	Decelle, 2006	Chikán, 1998	Zoltánné, 2002	Fazekas, 2007
	Pakucs and Papanek, 2006			
Entrepreneurial spirit	Schumpeter, 1934	Hjalager et al., 2008	Fazekas, 2007	Hall and Williams, 2008
	Fugslang and Sundbo, 2005	Zoltánné, 2002		
Guest orientation	Essmann, 2009	Hjalager et al., 2008	Ark et al., 2003	Szabó, 2012
	Weiermair and Fuchs, 1999	Sundbo and Darmer, 2008	Csizmadia, 2009	Decelle, 2006
	Csath, 2004			
Rationality	Essmann, 2009	Williams, 2010	Weiermair, 2008	Chikán, 1998
	Hjalager et al., 2008			

Source: own research.

Fazekas (2007) considers knowledge as one of the most important factors of development. He argues that missing information on technological and market conditions as well as potential communication failures and the lack of skilled workforce can all hinder innovation activity. Service providers can acquire most of the necessary knowledge and information in trainings and vocational courses.

Several Hungarian and international studies emphasize the positive impact of cooperation on innovation (Inzelt and Szerb, 2003; Jancsik, 2007; Rønningen, 2010). The results obtained by Inzelt and Szerb (2013) show that the share of new products is significantly higher for enterprises cooperating in innovation than for their non-cooperating peers. The innovation capability of enterprises operating in isolation is also weaker than that of their cooperating peers. Good decisions on the forms of cooperation or the choice of cooperating partners call for the necessary skills to realize business opportunities, the ability to take calculated risks, and, according to Hjalager et al. (2008), entrepreneurial spirit and personal motivation. This is one of the main reasons why decision-making skills play a crucial role both in the strategic and in the operative processes of service providers. Furthermore, guest orientation is another important driver of innovation in tourism. As Decelle (2006) points out, the success of tourism service providers hinges on their ability to adjust their services to the demand and to quickly adapt to changes.

3. A tentative model of innovation capability maturity

Scholars in both management (Williams, 2010; Essmann, 2009) and tourism sciences (Marchiori et al., 2012) have attempted to provide descriptions of innovation capability maturity. This section presents a model describing the innovation capability maturity of rural accommodation service providers.

We consider the second version of Essmann's innovation capability maturity model (ICMMv2) as the basis of describing the innovation capability maturity of rural accommodation service providers. Essmann's ICMMv2 is an advanced innovation capability model, developed from ICMMv1, an earlier version. Essmann and du Preez (2010, p. 53) argue that ICMMv2, unlike the earlier model, "defines the 'what' of innovation capability and not the 'how'. This is intended to be the 'essence of innovation' that, according to Moore is the same in every organization". It is obvious that a rural accommodation service provider is practically not an organization, but an individual or a family. Operating such a business, however, requires the application of the structured business logic and attitude of an entrepreneur.

Essmann (2009) classified capabilities into 42 construction units (henceforth, criteria) in order to build a model that grasps the innovation capability maturity of any organization involved in any type of activity. The criteria in ICMMv2, however, cannot be fully adopted in our research because Essmann's model is more formalized and complex than what we need in the case of rural accommodation service providers. This is the reason why we omit those criteria (e.g. treatment of intellectual property rights, suppliers' competence) from our model which are only relevant to a formal

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organization. In the maturity model of rural tourism, we divide the criteria of cooperation (building formal and informal external connections) into three parts: cooperation with touristic and non-touristic service providers and availability to service providers). We have created a total of five capability areas out of Essmann's set of criteria, which we describe in the next five paragraphs.

The capability area of "market knowledge" includes the criteria of understanding customer needs, knowing regulations and processing the news. In rural accommodation, awareness of the needs and expectations of guests is of key importance. It is also indispensable to keep track of regulations and consumer trends. We deem the criterion of processing the news to be important because only evaluated and processed pieces of news can adequately inform the process of planning, making changes in the supply and reacting to market changes.

The capability area of "training" involves the criteria of training strategy and training program. In the world of services, the importance of possessing up-to-date knowledge and skills needs little explanation. Most rural accommodation providers, understandably, hold neither a touristic nor any other college degree. But their training is a vital necessity if they wish to follow the latest developments and apply new practices. To this end, they regularly participate in vocational programs such as trainings on accommodation, language courses, team buildings or hiking, where they can learn about and make use of best practices and applicable solutions. This is very profitable, because according to Keller (2008, p.35), model imitation pays off in tourism because service providers can save the costs of experimentation and research.

The capability area of "managing possibilities" encompasses several criteria. Idea management and project applications can indicate openness to entrepreneurial spirit, change and making changes. Cooperation with and availability to touristic and non-touristic service providers, institutions of education and research also plays a crucial role within the driving forces of innovation. Cooperation is an efficient way of sharing information, resources and knowledge, in which all actors are interested in participating. Still within this capability area we have also included decision making, risk management and innovation communication. The ability to seek solutions to different problems, choose the right alternative and communicate the realized innovation are further aspects of innovation maturity.

We included the criteria of guests' contribution to innovation and availability to guests in the capability area of "guest orientation". Customer satisfaction and, in the long run, commercial success, hinges on the human factor and the personal dimension. Informality, being open and reacting flexibly to personal needs is essential in services, and even more so in the innovation maturity of rural service providers.

Our last capability area bears the name of "rationality" and covers financial planning, measuring innovation performance, choosing the target group, and keeping guest records. Rationality leads to long term strategic thinking, consciousness, and continuous investment into the business, which promote renewal and are the manifestation of an entrepreneurial attitude.

4. The refinement of the model

In this section we fine-tune the tentative model by using the results of an empirical investigation. First, we construct 19 indicators that measure the innovation capability maturity of rural accommodation providers based on the literature review above. Then, we classify the indicators into five groups (capability areas) and apply these indicators in a survey among rural accommodation service providers in Veszprém County, Hungary. Finally, we reinforce our preliminary classification of the indicators by conducting principal component analysis using the results of the survey as input data.

4.1. Data collection

When selecting the villages in which we collected data on rural accommodation service providers, we first considered the method of data collection: whether to conduct our survey through a personal interview with the help of an interviewer or via an on-line survey through internet. Since some of the rural accommodation service providers still lack internet access, we decided to interview them personally, thus improving the answer rate and enabling ourselves to better understand the responses given to our questions. Another selection criterion was the weight of rural tourism within the tourism industry of the area under investigation. Within Hungary's Middle Transdanubian region, our broad area of interest, the performance of rural touristic service providers in the county of Veszprém is outstanding, by far exceeding the performance of those operating in the counties of Fejér and Komárom-Esztergom.

Based on these considerations, our research sample includes those rural accommodation service providers in Veszprém County which operate in villages with unquestionable rural touristic performance. We use 2009 figures of the villages from the dissemination database of the Central Statistical Office to define the cut off values for entering our sample. These values are 600 registered guest nights and 200 accommodated guests, which, then, predetermine the range of accommodation service providers entering the research sample. In Figures 1 and 2 in the Appendix, we illustrate on a map the geographical distribution of these villages in Veszprém County.

Although our research targeted the entire population (253 persons according to the dissemination database), some service providers refused to be interviewed. We used the freely accessible National Statistical Service Sample Size Calculator to calculate the number of observations for our sample to be representative. Our sample counts 82 observations, which implies a relative standard error of 9.1% and a 95% confidence interval, indicating that our sample can be considered representative.

As can be seen in Table 3 in the Appendix, a total of 82 rural accommodation service providers in Veszprém County answered our survey questionnaire. Table 2 shows the descriptive statistics of the hosts and the places of accommodation. The average age of the hosts is 50, with a minimum age of 28 and a maximum of 70 years. They have been involved in rural tourism for an average of 9.5 years, with their experience ranging from 0 to 28 years.

Table 2

Descriptive statistics of the sample

		Age of interviewee (year)	Duration of service providing (year)	2011			2012
				Net profit spent on maintenance and upgrade (%)	Revenue spent on communication (%)	Number of guest nights	Room-price (high season, person/night, in HUF)
N	Valid	82	82	82	82	82	82
	Missing	0	0	0	0	0	0
Mean		50.55	9.51	36.04	8.61	350.17	3420.73
Median		50.50	9.50	30.00	10.00	270.00	3050.00
Std. Deviation		10.941	5.556	29.205	7.093	336.627	1027.851
Skewness		-0.113	0.789	0.507	1.362	2.033	2.649
Std. Error of Skewness		0.266	0.266	0.266	0.266	0.266	0.266
Kurtosis		-1.054	0.982	-1.008	2.153	6.372	10.327
Std. Error of Kurtosis		0.526	0.526	0.526	0.526	0.526	0.526
Range		42	28	100	30	2000	6800
Minimum		28	0	0	0	0	2200
Maximum		70	28	100	30	2000	9000

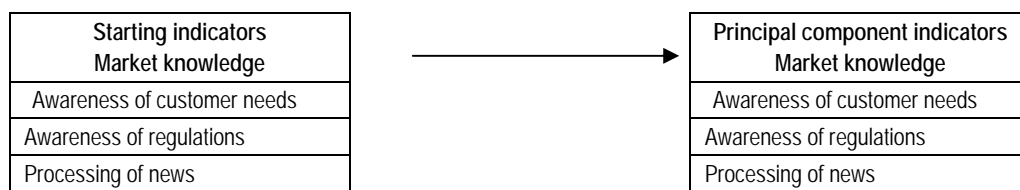
Source: own research.

In 2011, the interviewed hosts spent an average of 36% of their annual profit on maintenance and upgrades of their facilities. They spent 0-30% of their annual sales revenue on communication and advertising. The number of guest nights in 2011 ranged between 0 and 2000 with an overall average of 350 guest nights. Guest rooms cost a minimum of 2200 Hungarian forints (7.5 euros) and a maximum of 9000 forints (30.5 euros) per night.

In our questionnaire, we asked hosts to answer a total of 18 questions that each pertain to one particular indicator. The questions are clustered together to indicate the different capability areas they belong to. To each question, we asked the interviewee to choose one of the three possible answers that he/she feels the most adequate for his/her services. When he/she could not choose between the three given answers, or if two subsequent answers were both partly true, we asked him/her to check one of the two alternatives in between the answers. The answers to these questions become our indicators of innovation maturity. Since they range on a Likert scale between one and five it is unnecessary to analyze outliers. In order to justify our hypothesis stated in the introduction, we first calculated the correlation matrix of the indicators, as illustrated in Table 4 in the Appendix and, then, conducted a principal component analysis to demonstrate the main capability areas. In the next subsection we show the steps of the analysis for each capability area.

4.2. Principal component analysis

Market information is unimportant in itself. Within the indicator group of market knowledge we are interested whether the accommodation provider is aware of all the information on market regulation or the changing needs of customers, whether he/she takes steps to acquire up-to-date information and if he/she processes, evaluates and uses this information to take the necessary measures or, perhaps, make changes in the service. Figure 1 illustrates the starting indicators of market knowledge and the indicators of the principal component. The details of the principal component analysis in all of the following cases are included in Table 5 in the Appendix.



Source: own research.

Figure 1. Indicators of market knowledge before and after principal component analysis

Within the indicator group of training we ask questions on whether service providers have long term strategies to further develop the professional knowledge and skills necessary for providing the services and whether they take steps to acquire and refresh their knowledge. Figure 2 demonstrates that the two aforementioned indicators remain in the principal component.

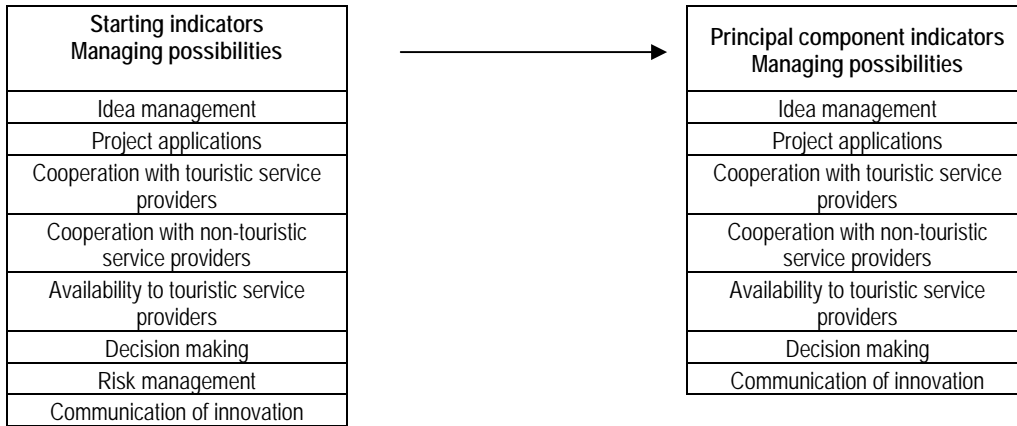


Source: own research.

Figure 2. Indicators of training before and after principal component analysis

The indicator group of managing possibilities pertains to the inception and the management of ideas, compiling project applications, cooperating with other touristic and non-touristic service providers, being available to service providers, the pattern of making decisions during service providing as well as the mitigation of uncertainties (risk management) and the communication of innovations realized by the accommodation provider. The principal component involves seven out of the eight starting indicators. As can be seen in Figure 3, the indicator of risk management fell out of the model.

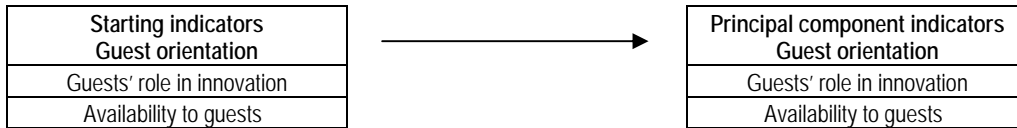
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Source: own research.

Figure 3. Indicators of managing possibilities before and after principal component analysis

The indicators of guest orientation cover the time horizon of availability to guests (before, during and after stay) and the degree of guests' involvement in innovation (measuring guest satisfaction, collecting and using feedbacks to upgrade services, involving guests in making decisions on innovation) and are illustrated in Figure 4.



Source: own research.

Figure 4. Indicators of guest orientation before and after principal component analysis

The variable set of rationality measures the economic consciousness of the accommodation provider, including the existence of economic calculations, comprehensive guest records, following up on the results of innovation and the identification of the target group. Figure 5 attests that the list of indicators stayed unchanged after the principal component analysis.



Source: own research.

Figure 5. Indicators of rationality before and after principal component analysis

5. Conclusions

Based on the review of the academic literature, we constructed a model that describes the innovation capability maturity of tourism service providers. We first adapted Essmann's (2009) innovation capability maturity model to identify five main capability areas relevant to tourism services and classified the indicators into these capability areas. We then applied these indicators to compile a survey questionnaire for rural accommodation service providers in one of Hungary's outstanding rural tourism destinations, Veszprém County and used the findings of the survey to refine our model through principal component analysis. Finally, we identified the indicators that drive the five relevant innovation capability areas and explain the innovation capability maturity of rural accommodation service providers in Veszprém County, Hungary. Based on the above we make the following statements:

- The innovation capability maturity of rural accommodation service providers in Veszprém County, Hungary, can be described by the following capability areas: market knowledge, training, managing possibilities, guest orientation and rationality.
 - The indicators of the market knowledge principal component are: awareness of customer needs and regulations as well as the processing of news.
 - The indicators of the training principal component are: training strategy and training program.
 - The principal component of the management of possibilities includes the following: idea management, project applications, cooperation with touristic and non-touristic service providers, availability to touristic service providers, decision making and innovation communication.
 - The indicators of the guest orientation principal component are: guests' role in innovation and availability to guests.
 - The indicators of the rationality principal component are: financial planning, innovation performance measurement, the choice of the target group and the keeping of guest records.

Although the results of our research do not offer a recipe for successful innovation, they carry three well discernible messages for rural accommodation service providers. First, rural accommodation providers should look for ways to cooperate with other touristic and non-touristic service providers. Joining a local or regional destination management organization (DMO) or, cluster, could enhance their innovation capability maturity. Such cooperation contributes to the success of participants through different channels, including professional lobbying, information service on new funding opportunities, assistance in compiling tender applications, joint media coverage and professional training programs.

Second, in order to better meet customer demand, accommodation providers should clearly identify their target group (e.g. groups of students, couples with children, seniors, etc.). Satisfying the needs of a well-defined target group is always

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easier than satisfying the, sometimes opposite, needs of all possible types of customers that might look for rural accommodation. Hungarian service providers are especially advised to be more conscious in targeting a specific segment of customers and streamline their services in line with their needs.

Third, long term success requires constant adaptation to the changing environment. Besides the aforementioned continual search for new information and lifelong training, this approach also includes identifying new customer needs, following the latest market trends and repeatedly measuring the satisfaction of customers. The information in the feedbacks can be used to improve the accommodation service, expand the range of accompanying services and, thus, increase the number of returning guests.

Although the empirical part of our research covers one of Hungary's market leading rural tourism destinations, we point out that further research is necessary to validate the model on the country level. The extension of this research into other rural regions in Hungary – e.g. Órség, Szigetköz – will help refine our model further and contribute to a better understanding of what drives innovation capability maturity amongst rural accommodation service providers in Hungary.

Another direction of further research is the life cycle analysis of rural accommodation providers to identify the major milestones in their operation and gain a better understanding of their business processes. Investigating innovation capability maturity within the life cycle of the service provider is also an area of potential further research which can offer new insights.

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Appendix

Table 3

Selected data on villages of Veszprém County in the sample

Sub region	Village	Number of hosts (sample)		Number of hosts (total)		Coverage (hosts in the sample/total hosts)	Local tourism tax revenue (thousand forints, 2009)		Number of bed-places (2009)		Number of guest nights (2009)		Number of guests (2009)		Average frequency*
Ajkai	Magyarpolány	8	10%	17	7%	47%	641	5%	102	6%	1653	4%	558	5%	5%
Balatonalmádi	Felsőörs	6	7%	33	13%	18%	516	4%	356	20%	2875	8%	495	5%	10%
Balatonalmádi	Lovas	7	9%	35	14%	20%	2619	21%	211	12%	3185	9%	865	8%	13%
Balatonfüredi	Óbudavár	0	0%	6	2%	0%	0	0%	57	3%	1195	3%	275	3%	2%
Balatonfüredi	Pécsely	2	2%	18	7%	11%	122	1%	97	5%	788	2%	290	3%	4%
Balatonfüredi	Vászoly	3	4%	8	3%	38%	342	3%	81	4%	1712	5%	515	5%	4%
Pápai	Ganna	4	5%	7	3%	57%	381	3%	42	2%	1865	5%	462	4%	4%
Pápai	Németbánya	3	4%	3	1%	100%	129	1%	19	1%	2451	7%	424	4%	3%
Tapolcai	Mindszentszállás	3	4%	6	2%	50%	737	6%	34	2%	1020	3%	281	3%	3%
Tapolcai	Nemesvíta	4	5%	13	5%	31%	165	1%	81	4%	955	3%	318	3%	3%
Tapolcai	Szentbékállya	3	4%	16	6%	19%	912	7%	92	5%	2182	6%	737	7%	6%
Várpalotai	Ósku	4	5%	10	4%	40%	0	0%	52	3%	1466	4%	311	3%	3%
Veszprémi	Hárskút	0	0%	2	1%	0%	211	2%	19	1%	606	2%	267	3%	2%
Veszprémi	Nemesvámos	4	5%	3	1%	133%	0	0%	16	1%	880	2%	250	2%	1%
Zirci	Bakonybél	13	16%	35	14%	37%	3943	31%	250	14%	5070	14%	1714	16%	18%
Zirci	Bakonyháza	0	0%	11	4%	0%	782	6%	73	4%	3155	9%	561	5%	6%
Zirci	Bakonyszentkirály	2	2%	5	2%	40%	0	0%	35	2%	692	2%	205	2%	2%
Zirci	Csesznek	6	7%	9	4%	67%	301	2%	66	4%	1633	4%	776	7%	4%
Zirci	Dudr	5	6%	6	2%	83%	0	0%	31	2%	698	2%	294	3%	2%
Zirci	Eplény	5	6%	4	2%	125%	96	1%	44	2%	724	2%	339	3%	2%
Zirci	Jásd	0	0%	6	2%	0%	717	6%	52	3%	2022	5%	571	5%	4%
Összesen:		82	100%	253	100%	32%	12614	100%	1810	100%	36827	100%	10508	100%	100%

Source: own research.

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Table 4

Correlation matrix of innovation capability maturity indicators

		Awareness of customer needs	Awareness of regulations	Processing of news	Training strategy	Training program	Idea management	Project applications	Cooperation with touristic service providers	Cooperation with non-touristic service providers	Availability to touristic service providers	Decision making	Risk management	Communication of innovation	Guests' role in innovation	Availability to guests	Financial planning	Innovation performance measurement	Choice of target group	Guest records
Awareness of customer needs	Pearson Correlation	1	,392	,346	,136	-,017	,255	,167	,230	,227	,141	,386	,359	,322	,242	,129	,394	,218	,405	,304
	Sig (2-tailed)		,000	,001	,222	,880	,021	,134	,037	,041	,205	,000	,001	,003	,029	,268	,000	,049	,000	,005
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Awareness of regulations	Pearson Correlation	,392	1	,389	,237	,187	,434	,326	,397	,375	,358	,332	,286	,341	,280	,148	,474	,290	,456	,408
	Sig (2-tailed)	,000		,000	,032	,093	,000	,003	,000	,001	,001	,002	,009	,002	,011	,185	,000	,008	,000	,000
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Processing of news	Pearson Correlation	,346	,389	1	,253	,254	,437	,238	,203	,191	,197	,203	,251	,237	,200	,060	,346	,105	,338	,212
	Sig (2-tailed)	,001	,000		,022	,021	,000	,032	,068	,086	,076	,068	,023	,032	,072	,590	,001	,348	,002	,056
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Training strategy	Pearson Correlation	,136	,237	,253	1	,411	,308	,390	,108	,362	,254	,414	,226	,315	,451	,090	,329	,292	,305	,320
	Sig (2-tailed)	,222	,032	,022		,000	,005	,000	,334	,001	,021	,000	,041	,004	,000	,424	,003	,008	,005	,003
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Training program	Pearson Correlation	-,017	,187	,254	,411	1	,337	,458	,327	,345	,215	,231	,056	,257	,457	-,034	,227	,306	,330	,299
	Sig (2-tailed)	,880	,093	,021	,000		,002	,000	,003	,002	,053	,037	,617	,020	,000	,760	,040	,005	,002	,006
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Idea management	Pearson Correlation	,255	,434	,437	,308	,337	1	,425	,387	,322	,374	,444	,343	,384	,203	,130	,420	,256	,222	,317
	Sig (2-tailed)	,021	,000	,000	,005	,002		,000	,000	,003	,001	,000	,002	,000	,068	,246	,000	,020	,045	,004
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Project applications	Pearson Correlation	,167	,326	,238	,390	,458	,425	1	,378	,450	,432	,344	,212	,539	,410	,030	,378	,419	,306	,401
	Sig (2-tailed)	,134	,003	,032	,000	,000	,000		,000	,000	,000	,002	,056	,000	,000	,790	,000	,000	,005	,000
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Cooperation with touristic service providers	Pearson Correlation	,230	,397	,203	,108	,327	,387	,378	1	,470	,497	,305	,087	,328	,223	,051	,157	,186	,360	,230
	Sig (2-tailed)	,037	,000	,068	,334	,003	,000	,000		,000	,000	,005	,436	,003	,044	,652	,158	,095	,001	,038
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Cooperation with non-touristic service providers	Pearson Correlation	,227	,375	,191	,362	,345	,322	,450	,470	1	,471	,291	,167	,400	,297	,044	,266	,297	,393	,285
	Sig (2-tailed)	,041	,001	,086	,001	,002	,003	,000	,000		,000	,008	,134	,000	,007	,696	,016	,007	,000	,009
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Availability to touristic service providers	Pearson Correlation	,141	,358	,197	,254	,215	,374	,432	,497	,471	1	,183	,111	,320	,290	,218	,222	,219	,307	,344
	Sig (2-tailed)	,205	,001	,076	,021	,053	,001	,000	,000	,000		,096	,319	,003	,008	,049	,045	,048	,005	,002
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Decision making	Pearson Correlation	,386	,332	,203	,416	,231	,444	,344	,305	,291	,183	1	,298	,337	,239	-,016	,240	,264	,170	,251
	Sig (2-tailed)	,000	,002	,068	,000	,037	,000	,002	,005	,008	,096		,006	,002	,031	,887	,030	,017	,128	,023
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Risk management	Pearson Correlation	,359	,286	,251	,226	,056	,343	,212	,087	,167	,111	,298	1	,354	,355	,082	,373	,327	,364	,279
	Sig (2-tailed)	,001	,009	,023	,041	,617	,002	,056	,436	,134	,319	,006		,001	,001	,465	,001	,003	,001	,011
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Communication of innovation	Pearson Correlation	,322	,341	,237	,315	,257	,384	,539	,328	,400	,320	,337	,354	1	,415	,142	,362	,590	,380	,470
	Sig (2-tailed)	,003	,002	,032	,004	,020	,000	,000	,003	,000	,003	,002	,001		,000	,203	,001	,000	,000	,000
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Guests' role in innovation	Pearson Correlation	,242	,280	,200	,451	,457	,203	,410	,223	,297	,290	,239	,355	,415	1	,037	,424	,471	,598	,448
	Sig (2-tailed)	,029	,011	,072	,000	,000	,068	,000	,044	,007	,008	,031	,001	,000		,742	,000	,000	,000	,000
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Availability to guests	Pearson Correlation	,124	,148	,060	,090	-,034	,130	,030	,051	,044	,218	-,016	,082	,142	,037	1	,266	,225	,316	,195
	Sig (2-tailed)	,268	,185	,590	,424	,760	,246	,790	,652	,696	,049	,887	,465	,203	,742		,016	,042	,004	,079
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Financial planning	Pearson Correlation	,394	,474	,346	,329	,227	,420	,378	,157	,266	,222	,240	,373	,362	,424	,266	1	,481	,530	,491
	Sig (2-tailed)	,000	,000	,001	,003	,040	,000	,000	,158	,016	,045	,030	,001	,001	,000	,016		,000	,000	,000
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Innovation performance measurement	Pearson Correlation	,218	,290	,105	,292	,306	,256	,419	,186	,297	,219	,264	,327	,590	,471	,225	,481	1	,508	,478
	Sig (2-tailed)	,049	,008	,348	,008	,005	,020	,000	,095	,007	,048	,017	,003	,000	,000	,042	,000		,000	,000
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Choice of target group	Pearson Correlation	,405	,456	,338	,305	,330	,222	,306	,360	,393	,307	,170	,364	,380	,598	,316	,530	,508	1	,554
	Sig (2-tailed)	,000	,000	,002	,005	,002	,045	,005	,001	,000	,005	,128	,001	,000	,000	,004	,000	,000		,000
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Guest records	Pearson Correlation	,304	,408	,212	,320	,299	,317	,401	,230	,285	,344	,251	,279	,470	,448	,195	,491	,478	,554	1
	Sig (2-tailed)	,005	,000	,056	,003	,006	,004	,000	,038	,009	,002	,023	,011	,000	,000	,079	,000	,000	,000	
	N	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82

Source: own research.

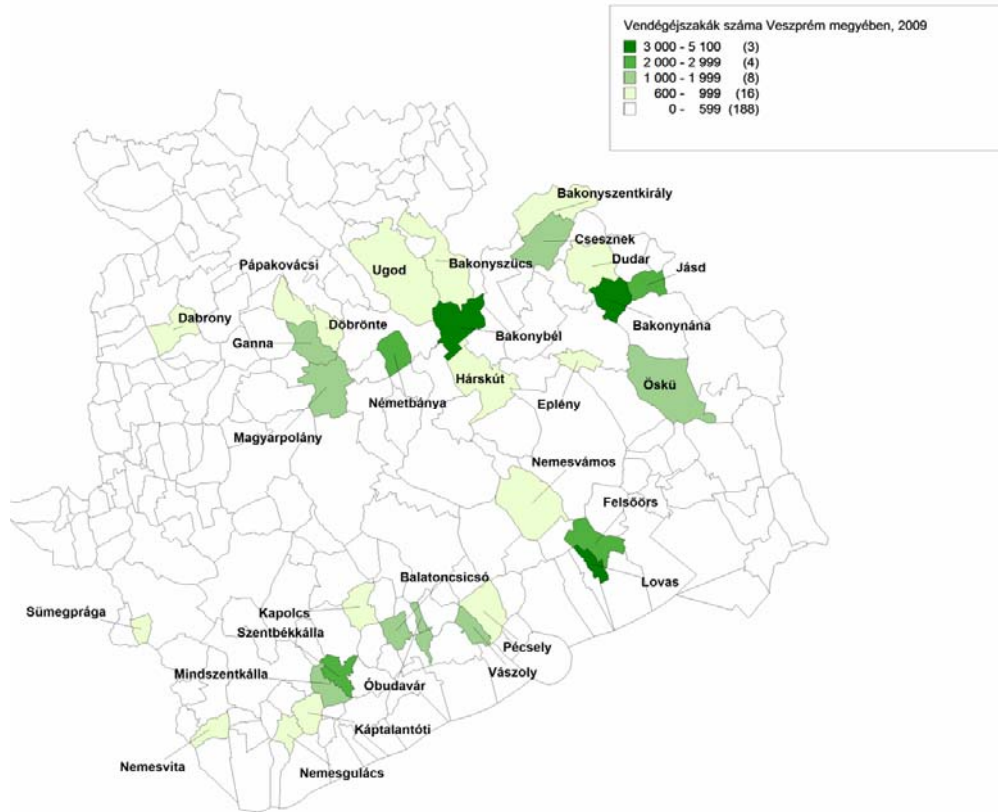
Table 5

Principal component analysis

Factors	Loadings	Eigenvalue	Percentage of variance explained (%)	Reliability KMO
Market knowledge		1.752	58.400	0.652
Awareness of customer needs	0.571			
Awareness of regulations	0.614			
Processing of news	0.567			
Training		1.411	70.531	0.500
Training strategy	0.705			
Training program	0.705			
Managing possibilities I.		3.464	43.303	0.836
Idea management	0.495			
Project applications	0.551			
Cooperation with touristic service providers	0.454			
Cooperation with non-touristic service providers	0.485			
Availability to touristic service providers	0.438			
Decision making	0.354			
Risk management	0.190			
Communication of innovation	0.497			
Managing possibilities II		3.323	47.471	0.841
Idea management	0.474			
Project applications	0.565			
Cooperation with touristic service providers	0.493			
Cooperation with non-touristic service providers	0.509			
Availability to touristic service providers	0.472			
Decision making	0.336			
Communication of innovation	0.475			
Guest orientation		1.037	51.846	0.500
Guests' role in innovation	0.518			
Availability to guests	0.518			
Rationality		2.523	63.071	0.799
Financial planning	0.619			
Innovation performance measurement	0.597			
Choice of target group	0.674			
Guest records	0.633			

Source: own research.

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Source: own research.

Figure 6. Number of guest nights spent in the villages of Veszprém County

