Interactions between University business and Government in the process and implementation of Innovations in Tourism

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Abstract

The aim of this research was to analyze the interactions between the university, industry and government spheres in the process and implementation of innovations in tourism by the importance of innovation in the field of tourism, because it seeks to understand the repercussions on the tourist attractions by attempting to understand the relationship between university, business and government. The research used application of questionnaires with public and private actors from the University sector, Companies, and Government. The Knowledge, Consensus Space and Innovation indicators analysis show that there is a significant difference between the business and the university when it comes to generating innovation in tourism, and this can result in a distancing between the businesses that manage the tourist attractions studied and the university as generator of knowledge. The role of government is to apply policy to facilitate relations and exchanges between the three spheres. Industry possesses the motivation to invest in high-growth potential sectors. Universities could take the opportunity to establish its presence and fine-tune its portfolio of tasks so that industry is aware of these tasks and sees value in them. The paper discusses the university–industry–government relationships in the framework of developing tourism economy.

Keywords: innovation, university-business-government, tourism, Balneário Camboriú, Brazil

Introduction

Tourism plays a vital role in the development of countries on different continents. According to the WTO (2018), international tourist arrivals increased by 7% in 2017, the biggest increase since the global economic crisis of 2009 and well above the WTO's long-term forecast of 3.8% per year for the period 2010 to 2020. A total of 1,326 million international tourist arrivals were recorded in destinations worldwide, about 86 million more than in 2016. Thus, international revenues from tourism increased by 4.9% in real terms (adjusting for exchange rate fluctuations and inflation), reaching $1.340 billion in 2017. The strong demand for travel among the traditional and emerging markets has driven a growth in global revenues, following the positive trend recorded in the international market.

The companies that manage tourist destinations have sought to increase their competitiveness by innovating their products and processes. According to Hjalger (1994), innovations go beyond inventions in that they are carried through to the implementation and

marketing stages. For example, product innovation (environmentally sustainable accommodation facilities), in the process (computerized management and monitoring systems), in management (collaborative structures), logistics (integrated destination information systems, CRS systems and Internet marketing, and enhancement of airport hub system) and in the institutional (destination management systems and units that control access to vulnerable areas).

Ideas on production in innovation have evolved in recent years, generating a drastic shift in the general perception of them. This development stems from the idea that the knowledge, skills and resources necessary to produce innovation can be found in other organizations that operate within the innovation ecosystem, focusing on the production of innovation through collaborations and interactions (Ponchek, 2016). The triple helix of relations between university, industry and government provides a structure to overcome obstacles to innovation in knowledge-based economies and regional innovation systems (Etzkowitz, 2008).

The generation of knowledge is important for a society that looks to innovation as a fundamental element for the growth and development of economies and society. According to Etzkowitz (2011), the principle of the triple helix is the expectation that the university will assume an entrepreneurial role in society, while maintaining its traditional function of reproducing certified knowledge, while also taking on a new role in promoting innovation which is vital in the workplace because it gives companies an edge as they seek to penetrate global markets faster and it additionally provides an augmented link to developing markets. This may thus lead to greater opportunities for developing nations like Brazil.

The individual value of tourist attractions in the marketing mix that comprises tourism destinations can be clearly seen in the results of national governments, principal assets for tourism strategies, and proposals for the development of destinations (Leask, 2016). Tourist attractions are recognized by several authors (Leask, 2016) as key mechanisms for differentiating and developing competitive destinations (Brida, Meleddu, & Pulina, 2012; Connell, Page & Meyer, 2014; Hughes & Carlsen, 2010; Sheng & Chen, 2012; Shetawy & Khateeb, 2010). Balneário Camboriú of the 21st century is a dynamic city that is seeking to diversify the options available for tourists, besides the beaches. In 2015, it was considered one of the fifteen best tourist towns in the country, with its daily reality forming a dynamic space that is changing rapidly.

Long-time residents have felt the speed of these changes (Schlickmann, 2016). Thus, understanding that the triple helix contributes to the formation of inventions that, soon after they are implemented and marketed, generate innovation, we aimed to analyze the interaction of tourist attractions in the relationship between university, business and government in the process and implementation of innovations in tourism in Balneário Camboriú, Santa Catarina.

The research is considered to be justified by the importance of the theme in the field of tourism, because it seeks to understand the repercussions on the tourist attractions by attempting relating to between university, business and government. for transferring knowledge and implementing innovations.

The study hopefully enables the formation and implementation of more effective policies and strategies for meeting the demands presented, considering the great importance of the relationship between the tourist attractions and the destination. Innovation in tourism is a reality that should be thought of in an integrated way; the relationships between various actors are very important for promoting an environment of innovation.

The relationship between the similarity of tourist products and the transfer of knowledge and innovations between tourism companies has been widely ignored, as have the

interrelationships between spatial proximity and similarity of products, and how these relationships are spatially dimensioned within and beyond the clusters. This gap is particularly notable in the tourist attractions sector (Weidenfeld, Williams & Butler, 2016).

This research therefore aimed to create an empirical framework for the process and implementation of innovation, based on the interactions between university, business, and government, in a tourist destination. These interactions in the process of innovation have great theoretical and practical importance, not only for tourism, but also for the management of a tourist destination that will be able to develop a strategic competitive advantage over other destinations.

Tourist destinations and innovation

Key icons in destination marketing, tourist attractions are often used to lead regeneration projects and new developments (Jafari et al., 2012; Leask, 2010). There is a notable gap in understanding the process of knowledge and innovation in tourist attractions (Weidenfeld, Williams & Butler, 2010). But it is important to understand their interrelations within the destination, as well as the tourism organizations that form part of the system, in order to achieve the desired results. Innerhofer and Pechlaner (2016) report that the increasing social and economic changes, the unsettled conditions in which organizations and businesses need to be thrive, and the increased competition, have created pressure on all markets, and tourism enterprises and destinations as such, are no exception.

According to Hjalager, Tervo-Kankare and Tuohino (2016), tourism innovation policies must include: a) financial support for innovative activities that involve risk, or are potentially prospective; b) advanced consultancy services in innovation for industry and laboratory functions; c) collaboration and networking between enterprises and business forums around issues of innovation; (d) promotion of entrepreneurial skills and incentives for new businesses, including spin-offs from universities and public institutions; (e) system of venture capital with a focus on innovation and the establishment of brokerage services between enterprises and banks; f) scouting for technology and a concept and systematic dissemination of information and knowledge; (g) establishment of Market intelligence systems; h) improve the links between industry and universities in order to facilitate the transfer of knowledge; (i) construction of human capital and skills at all levels, and being up-to-date with the appropriate labor standards; j) use of investments in infrastructure as a springboard for innovation in the private sector; (k) reducing the administrative burden and bureaucracy for innovative companies; l) promoting an "intelligent" demand for services and products, e.g. by means of targeted public procurement.

Analysis of government relations with the university and industry in different societies, and their various roles in innovation, was generated from the triple helix, as shown in figure 1 below, and succinctly demonstrates the synergies and relationships for generating innovation in tourism.
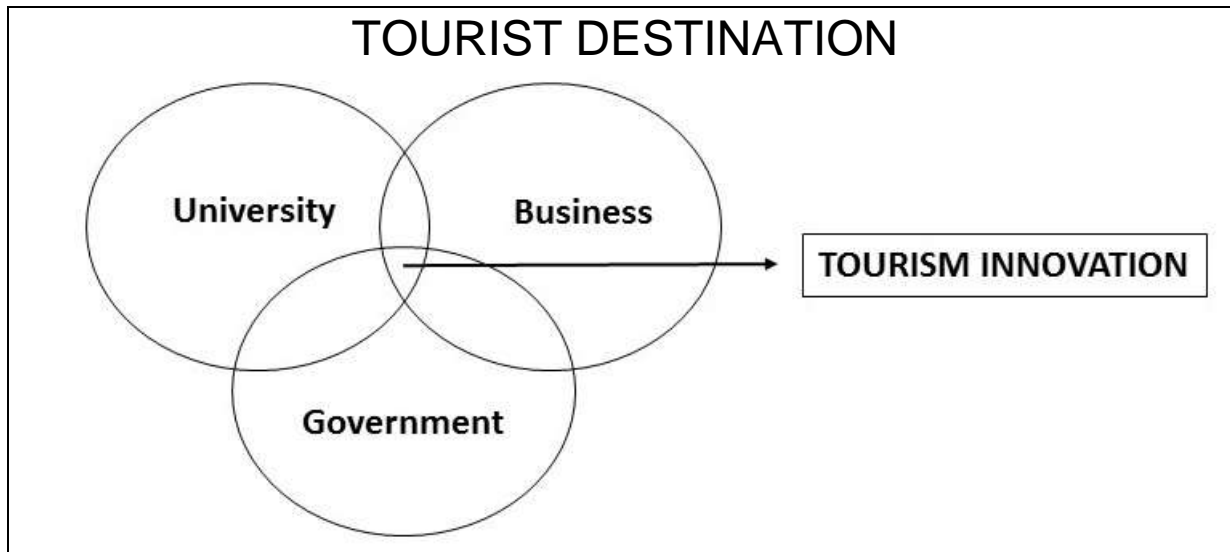
TOURIST DESTINATION

Figure 1 - Relationships of the triple helix for innovation in tourism
Created by: Adapted from Etzkowitz (2008, p. 16)

The growth of new academic research businesses and the establishment of scientific industry in the areas around universities are manifestations of triple helix relations in knowledge-based societies. Innovation is increasingly taking shape in the form of triple helix relationships. The new types of actors of innovation that are invented through these interactions include incubators, science parks, and venture capital companies (Etzkowitz, 2008).

Innovation starts to take on new meaning when the circles of the triple helix intertwine, starting from a position of relative autonomy and moving towards a relationship of cooperation aimed at increasing the performance of each of the parties and enhancing their traditional functions. The increased interaction between university, industry and government, as partners without hierarchical distinction, and the new strategic developments and practical innovation that arise from this cooperation, are central to the economic model and the development of the triple helix (Lain, 2013). Postulates of the triple helix theory argue that interactions between university, industry and government are key to improving the conditions for innovation in a knowledge-based society. Industry operates in the triple helix as the place of production; the government acts as a guarantor of stability of contractual relations; and the university acts as a source of knowledge and technology, as the main source of economies based on knowledge (Etzkowitz, 2011). Tourism has been characterized by immense innovation throughout history, and as the tourism industry becomes increasingly competitive in a globalized world, innovation plays an essential role in staying ahead, not only for other companies and destinations, but for the other actors involved (Hall & Williams, 2008; Hjalager, 2002, 2010; Page, 2007; Peters & Pikkemaat, 2006;). Cooperation should not be restricted to governmental institutions and businesses in the tourism industry; the inclusion of universities is also encouraged, particularly bearing in mind that knowledge-producing institutions have become an an important factor in innovation, and have much to contribute to the tourism industry in terms of knowledge, which is important for the development of new products (Etzkowitz, 2008). This cooperation between these three interested parties can be called a 'Triple Helix' interaction.

Innovation and process management that lead to success (for example, generation of ideas, design of services) are essential for the success of tourism organizations (Ottenbacher, 2007; Tajeddini, 2011). Eisingerich, Rubera and Seifert (2009) identify that a commitment to interorganizational relationships has a positive effect in keeping the organization focused on innovation relevant to its partners, and also on success as measured by net profit. Drawing

knowledge and ideas from a network of partners allows organizations to identify potential innovations, develop solutions, and stimulate innovative business behaviors (Chen & Paulraj, 2004).

There has been little emphasis given to the Triple Helix model in tourism research, despite indications in several works, especially when it comes to the role of universities in the innovation process in tourism (Halkier, 2010; Hjalager, 2002, 2010; Svensson, Nordin & Flagestad, 2005). The model refers to cooperation and interaction between universities, industry and government. However, the literature and the practical implementations are focused primarily on the manufacturing industry and technology (Etzkowitz, 2008; Etzkowitz & Leydesdorff, 1997). This model suggests that where there are mutual benefits to be derived from the intersection of three interested parties, innovation may be possible (Page, 2009). Given that universities act as research institutions, they are, in a certain way, key distributors of knowledge, which means that they stimulate new ideas that will eventually be incorporated by the economic sectors (Etzkowitz, 2008). The process of innovation in this process, however, does not mean that the other two actors are less important, nor are not able to generate their own innovative ideas; indeed, they are the actors with greater potential to implement the ideas. This is an important notion about innovation in the tourism industry and, in particular, the role of universities in the innovation process.

Hall and Williams (2008) state that knowledge is a fundamental part of innovation, because innovation itself is a process of applying forms of knowledge. For Chang and Chen (2004) Knowledge is not the same as information; "it is a broader process that involves cognitive structures that assimilate information and put it into a broader context, enabling the actions to be carried out on the basis of it." Davenport and Prusak (1998) agree, stating that knowledge is a fluid mixture of structured experience, values, contextual information, and insights from experts that provide a framework for evaluating and incorporating new experiences. The importance of creating synergy between the three actors in the development of tourism as a development strategy requires an understanding of the role of each actor in the formation of the synergistic relationship. The Triple Helix Model is increasingly relevant as a conceptual framework for regional development (Fitriana, 2017). The main constructs established by the authors in the discussion of this study are related to Knowledge, Spaces of Consensus and Innovation (Table 1).

Constructs	Referential basis
K – Knowledge	Etzkowitz & Leydesdorff (1995); Etzkowitz & Leydesdorff (2000); Etzkowitz (2008); Hjalager (2010); Weidenfeld, Williams & Butler (2010); Hjalager, Tervo-Kankare & Tuohino (2016); Eide, Fuglsang & Sundbo (2017); Etzkowitz & Zhou (2017).
SC - Spaces of Consensus	Hjalager (2002); Etzkowitz (2008); Hall & Williams (2008); Hjalager (2010); Etzkowitz, Ranga & Dzisah (2012); Ranga & Etzkowitz (2013); Hjalager (2014); Grasmik (2016); Hjalager, Tervo-Kankare & Tuohino (2016); Eide, Fuglsang & Sundbo (2017); Etzkowitz & Zhou (2017); Pikkemaat, Peters & Chan (2018).
I – Innovation	Etzkowitz & Leydesdorff (1995); Sundbo & Gallouj (1998); Etzkowitz (2003); Stal & Fujino (2005); Etzkowitz (2008); Hjalager (2010); Hjalager (2014); Hjalager, Tervo-Kankare & Tuohino (2016); Eide, Fuglsang & Sundbo (2017); Etzkowitz & Zhou (2017); Divisekera & Nguyen (2018).

Table 1 - Constructs
Created by: The authors (2019).

Knowledge is related to the right incentives to the development and dissemination of ideas; decision-making; productivity and growth of an economy, and the results of research generates effects on innovation in tourism. The spaces of consensus are dialogue for the formulation and implementation of innovation in tourism; the promotion of a favorable political, economic and institutional environment; partnerships between university, business and government evolving alongside regional development; the best innovations in tourist destinations and partnerships in relation to innovation in tourism. Innovation, in turn, is related to concepts of organization that promote innovation; the greater demand of tourists as a result of the innovations; working methods for the satisfaction of tourists, and the creation of new business models for greater competitiveness in the tourist destination.

Methodology

Sample characterization and data collection

The results were obtained through the application of questionnaires with public and private actors from the University sector, Companies, and Government, in the tourist destination of Balneário Camboriú, Brazil. Invitations were sent to the 53 representatives of the University sector (08), Business sector (39) and Government sector (06). However, 20 representatives of the Business sector did not agree to participate in the study, leaving a total of 33 respondents (Table 2).

Actor	Atm	Population	Respondents
University	University	08	08
Business	Associations	02	02
	Private Tourist Attractions	37	17
Government	Secretariat of Tourism and Economic Development	03	03
	Balneário Camboriú Cultural Foundation	03	03
TOTAL		53	33

Table 2 - Representatives of the actors linked to innovation in tourism
Created by: The authors (2019).

The technique used for the data collection consisted of a structured questionnaire, with the aim of analyzing interactions between university, business and government in the process and implementation of innovation in tourism. The questionnaire, which was based on the theoretical framework, presented four sections: *Profile of the Respondent* (sex, age, level of education, position, and time at the company) with 05 questions; *Knowledge* with 05 questions; *spaces of consensus* with 05 questions; and *Innovation* with 04 questions (Table 3).

Constructs	Variables
K – Knowledge	K1. Incentives for the development and dissemination of ideas K2. Decision-making K3. Productivity and growth of an economy K4. Results of research generate effects on innovation in tourism K5. The presence of the university, based on the results of its research, generates effects on innovation in tourism
SC - Spaces of Consensus	SC1. Dialogs for the formulation and implementation of innovation in tourism SC2. Promoting a favorable political, economic and institutional environment SC3. Partnerships between university, business and government evolve alongside regional development SC4. Best innovations in tourist destinations SC5. Partnerships for innovation in tourism
I – Innovation	I1. Concepts of organization that promotes innovation I2. Higher tourist demand for innovations I3. Working methods for the tourist satisfaction I4. Creating new business models for greater competitiveness in the tourist destination

Table 3 - Constructs and variables that compose the research instrument
Created by: The authors (2019).

To measure the statements provided a 7-points Likert scale was utilized - totally disagree, totally agree, or somewhere in-between (Gelman; Hill, 2007).

The data were collected from March 3 to June 14, 2018, with the aim of analyzing the interactions between university, business and government in relation to innovation in tourism in the municipality of Balneário Camboriú and the surrounding region. To gather the data, questionnaires were sent to managers with high positions in universities, tourist attractions and government, through the *Google Forms* online platform.

To describe and compare the items of each variable, the mean and 90% confidence interval were used; for the correlation between the variables, Spearman's test was used (Hollander et al., 1999), which seeks to understand, by comparing the variables between the general categorical data, whether when a variable increases the other variable tends to increase or decrease. Analysis was also conducted using the Kruskal-Wallis test, to identify significant results, demonstrating difference between samples. Also, pairs of specific samples were contrasted to analyze for significant differences (Sao & Foreman, 2009).

Analysis of results

With respect to the group, 58% of respondents were from businesses, 24% from the University and 18% belonged to the public sector. In regard to sex, 55% of individuals were female. As to level of education, 52% were post-graduates, 39% had completed higher education, 6% had completed primary education, and 3% had completed secondary education. As to position, 24% were office managers, 18% teachers, 12% directors, 9% business owners, 6% course coordinator, designer and vice-president and 3% other.

The interaction between university, business and government in the process of implementation of innovations in tourism. Highlighting the salience of domains of embeddedness as a link between cause and effect, organizations striving to a transition to a triple helix model of innovation must invest time and effort in understanding the organizing context, the formal and informal emergent structures that embody and govern the situated practices, and the organizing relationships of the three institutional spheres (Sarpong et *al.*, 2017). Table 4 shows the results.

Constructs	Variables	Institutions								
		University			Company			Government		
		Mean	SD	CI 90%	Mean	SD	CI 90%	Meana	SD	CI 90%
Knowledge	K1	3.88	2.031	[2.63;5.00]	4.79	1.512	[4.16;5.48]	5.33	1.506	[4.31;6.35]
	K2	3.62	1.996	[2.49;4.56]	4.84	1.463	[4.37;5.43]	5.00	1.549	[4.07;6.00]
	K3	3.38	2.134	[2.25;4.62]	4.32	1.529	[3.78;4.85]	4.33	1.633	[3.00;5.70]
	K4	**6.88**	.354	[6.66;7.00]	**5.37**	1.535	[4.79;6.07]	**6.33**	.816	[5.63;6.86]
	K5	5.63	1.598	[4.74;6.70]	5.05	1.682	[4.45;5.70]	4.33	2.066	[2.63;6.04]
Space of Consensus	SC1	3.25	1.669	[2.29;3.83]	3.63	1.461	[3.24;4.05]	3.83	1.169	[3.00;4.75]
	SC2	2.88	1.885	[1.77;3.81]	3.58	1.539	[3.03;4.08]	4.00	.894	[3.33;4.70]
	SC3	3.00	1.927	[1.88;4.27]	4.05	1.545	[3.46;4.64]	4.67	1.366	[3.63;5.56]
	SC4	5.75	1.669	[4.79;6.65]	5.53	1.645	[4.88;6.19]	**6.33**	.816	[5.79;6.81]
	SC5	**6.50**	.756	[6.08;6.83]	**5.79**	1.084	[5.37;6.21]	**6.00**	.894	[5.33;6.63]
Innovation	I1	4.38	1.996	[3.49;5.29]	**4.58**	1.427	[4.17;5.21]	4.50	1.643	[3.19;5.93]
	I2	**4.88**	1.808	[4.05;5.75]	4.47	1.349	[4.10;4.97]	**5.50**	1.225	[4.79;6.60]
	I3	4.25	1.982	[3.30;5.22]	4.63	1.383	[4.16;5.13]	3.83	2.041	[2.48;5.55]
	I4	4.75	2.053	[3.88;6.06]	4.47	1.389	[3.86;4.90]	4.67	2.338	[3.00;6.52]

Table 4 - Percentages and descriptive measures for the variables of the constructs "Knowledge", "Space of Consensus" and "innovation"
Created by: The authors (2019).

To investigate the interaction between university, business and government, in the process and implementation of innovations in tourism in Balneário Camboriú-SC, the following results of each construct analyzed – Knowledge, Space of Consensus, and innovation – can be highlighted.

The Construct of Knowledge

In the analysis of the respondents by groups, the **university** respondents had low disagreement with the statements contained in the 3 variables related to knowledge (*K1 - Incentives for the development and dissemination of ideas; K2 – decision-making* and *K3 - productivity and growth of an economy*), but there was high dispersion between the answers. In the variables *K4- the results of research generate effects on innovation in tourism and K5 - the presence of the university, based on its research results, generates effects on innovation in tourism,* there was less variability among the respondents, and a trend of medium to full agreement, highlighted a mean of 6.88 (maximum of 7) which relates to *knowledge through research results generates effects on innovation in tourism.*

The respondents from the **business** sector had low agreement in the variables (*K1 - Incentives for the development and dissemination of ideas; K2 – decision-making and K3 - productivity and growth of an economy*), but greater uniformity of responses, compared to the university respondents. It was also observed that the respondents presented medium agreement for the variables *K4- the results of research generate effects on innovation in tourism and K5 - the presence of the university, based on its research results, generates effects on innovation in tourism* with variable K4 being higher than the index for variable K5.
The respondents from **government** sector tended towards median agreement with the variables (*K1 - Incentives for the development and dissemination of ideas; K2 – decision-making)*, agreeing fully with the variable *K4- the research results generate effects on innovation in tourism* , and low agreement with the variables *K3 - productivity and growth of an economy* and *K5 - the presence of the university, based on its research results, generates effects on innovation in tourism* (with greater dispersion of data). It is emphasized that the three groups had similar perceptions, with complete agreement, regarding the assertion that knowledge is linked to research results that generate innovation (K4), but there were less positive evaluations for variable K3, which refers to knowledge linked to productivity and economic growth.

In general, there was a tendency towards greater disagreement and uncertainty among the groups studied in relation to the practical issues regarding the generation and dissemination of knowledge. Universities and companies disagree that the knowledge produced by jointly by these institutions can be considered as a key factor for the productivity and growth of an economy. On the other hand, in the field of ideas, there was greater agreement. For the authors Weidenfeld, Williams and Butler (2010), flows of knowledge are an important element for performance, competitiveness and innovation in tourism organizations. The is clear need for actions with greater proximity and transparency between the groups, bringing benefits for all the interested parties in the generation and transfer of knowledge.

The Construct Space of Consensus

The **University** had low to average discrepancy in the variables *(SC1 - Dialogs for the formulation and implementation of innovation in tourism; SC2 – Promoting a favorable political, economic and institutional environment* and *SC3 - partnerships between university, business and government evolve alongside regional development).* The last two variables, were positioned in the average disagreement quadrant. Items *SC4 - Best innovations in tourist*

destinations (5.75) and *SC5 - Partnerships for innovation in tourism* (6.50), had responses that showed complete agreement.

The **Business** respondents tended towards average agreement in the variables SC4 - *Best innovations in tourist destinations* (5.53) and SC5 - *Partnerships for innovation in tourism* (5.79). Item SC3 - *partnerships between university, business and government evolve alongside regional development* (4.05) was undefined, despite a tendency to lower agreement, very close to neutral. The representatives of the business sector had low disagreement in items SC1 - *Dialogs for the formulation and implementation of innovation in tourism* (3.63) and *SC2 – Promoting a political, economic and institutional environment* (3.58).

The municipal administrators representing, the **government** sector, had high and average agreement in the variables SC4 - *Best innovations in tourist destinations* (6.33) and SC5 - *Partnerships for innovation in tourism* (6.00). The variables SC3 - *partnerships between university, business, and government evolve alongside regional development* (4.67), SC2 – *Promoting a favorable political, economic and institutional environment* (4.00) and SC1 - *dialogs for the formulation and implementation of innovation in tourism* (3.83) showed greater undefinition of responses in relation to these three areas. To summarize, the three groups of respondents tended to agree that in Balneário Camboriú, the space of consensus contributes to generating best innovations, as well as its partnerships. On the other hand, they tended to disagree in regard to the existence of areas of consensus in the municipality in regard to dialogs for formulation and implementation, promoting a favorable environment, and partnerships to promote regional development. The main differences of in the indices, regardless of which group the respondents were in, was between the two questions that focus on partnerships (CE3 and CE5), which indicate that the focus of the innovations in Balneário Camboriú tended to be concerned more with local and business issues, than with regional development and socioeconomic status throughout the destination.

For Hjalager (2002), new knowledge is transferred through university education and vocational training; direct cooperation between researchers and companies is an opportunity to disseminate this knowledge. However, this can only benefit a small part of the sector.
New knowledge about collaborative efforts are essential to overcome the existing structural and behavioral obstacles to innovation (Hjalager, 2010). Pikkemaat, Peters and Chan (2018) report that the lack of professionalism of entrepreneurs, attitudes of the local communities in relation to innovation, politics, bureaucracy, environmental issues and the natural protection, a lack of willingness to cooperate, and the poor business positioning of companies, are barriers that lead to the failure of innovation in tourism.

Hall and Williams (2008) and Hjalager (2010) point out that tourism policy should support the establishment of the network and investors in tourist destinations. The tourism actors perceive themselves to be heavily interdependent, which leads to an overflowing of innovation at the local level (Pikkemaat, Peters & Chan, 2018). The process of innovation is becoming more open, leading to the need for the creation of institutions capable of mediating the interactions between agents, particularly in dealing with the different elements of the system of innovation (Grasmik, 2016). Thus, close links between the institutions, and feedback on the results are important for reducing uncertainties and disagreements, and bringing the desired benefits.

The Construct of Innovation

The respondents of the **university** group tended towards low agreement, with very close averages in the variables I2 - *Higher tourist demand for innovations* (4.88), I4 - C*reating new business models for greater competitiveness in the tourist destination* (4.75), I1- *concepts of organization that promote innovation* (4.38) and I3 – *Working methods for tourist satisfaction*

(4.25), with the **concerns slightly higher in regard to higher demand and the creation of new business models promoted from innovations.**

In the Group of the **business sector**, the level of concordance is also low with the variables I1 - *Concepts of organization that promotes innovation* (4.58) and I3 - *Methods of work for the satisfaction of tourists* (4.63) slightly higher than the variables I4 - *the creation of new business models for greater competitiveness in the tourist destination* and I2 - *Greater demand of tourists from the innovations* which have the same index (4.47). It is notable that the standard deviation was below the other constructs assessed by the respondent state of the group companies. As expected from the business sector, this group of respondents is more concerned with the concepts of organization and methods of work focused on the customer.

Among the **government** respondents only one variable had mean concordance; I2- *greater demand of tourists from the innovations* (5.50, demonstrating that the public agents are more focused on increasing demand, compared to the business group. The variables I1 - *Concepts of organization that promote innovation* (4.50) and I4 - *Creating new business models for greater competitiveness in the tourist destination* (4.67) showed low agreement, while only variable I3 – *Working methods for tourist satisfaction* (3.83) showed a trend of low disagreement, it being understood that innovation should not contribute to customer satisfaction. Despite the proximity of the indices, it was observed that the responses of the university and university and government were more similar than those of the business sector, which tended towards different concerns with innovation. It is emphasized, to avoid incorrect perceptions, that the standard deviation between the respondents of the university and government groups was higher.

For Pikkemaat, Peters and Chan (2018) the effectiveness of interorganizational collaboration improves the performance of innovation in organizations. Also, research ideas on cooperation and networking in tourism appear to be more relevant for addressing institutional innovation in destinations since the approaches in those research areas were considered fostering innovation in tourism.

The basis of knowledge and its role in innovation can be explained in terms of changes in the relationships between university, industry and government (Etzkowitz, 2003), in the generation of knowledge through research, dissemination of knowledge through teaching and contribution to applied research to solve the problems faced in society. Thus, this institutional arrangement, which seeks to promote joint research, is an important model for development, for both universities and companies (Stal & Fujino, 2005).

In tourism, there may be single businesses within the sector, such as accommodation, catering or attractions, but that somehow needs to establish collaborative links with local government, civil construction, the educational sector, and other tourist services. The organizations contain networks that are more like "citizenship" of a community, for example: established norms for the use of natural resources (Hjalager, Tervo-Kankare & Tuohino, 2016). The activities of innovation occur mainly within the innovation space, which consists of several organizations resulting from the intellectual effort of an "innovative entity", not a single inventor. The entities within and between the institutional spheres of the Triple Helix that translate knowledge into economic activity can act as an integrated sequence, or in isolation, linked only by their entrepreneurs who seek its support, whether consecutively or simultaneously (Etzkowitz & Zhou, 2017).

Correlation between knowledge, space of consensus and innovation in tourism

Garson (2009) affirms that "correlation is a measure of bivariate association (strength) of the degree of relationship between two variables." For Moore (2007), "Correlation measures the direction and the degree of linear relationship between two quantitative variables". It was observed that the constructs "knowledge", "space of consensus" and "innovation" are positively correlated, with higher correlation of the construct "space of consensus " with "innovation" and "knowledge", respectively 0.698 and 0.691 (Table 5).

Construct	Knowledge	Space of Consensus	Innovation
Knowledge	1	0.691	0.527
Space of Consensus	0.691	1	0.698
Innovation	0.527	0.698	1

Table 5 - Correlation between the constructs "Knowledge", "Space Consensus" and "innovation"
Created by: The authors (2019).

The literature has recognized the space of consensus as a construct mediator between knowledge and innovation. The existence of a space of consensus is an important prerequisite for the creation of hybrid autonomous organizations (HAOs) that promote innovation in response to local conditions. This type of innovation takes advantage of the available resources, in contrast with Bureaucratically implemented solutions that may or may not consider the local dynamic. Through the cross-fertilization of different perspectives, ideas can be generated and results achieved that individual actors could not have done alone (Champenois & Etzkowitz, 2017). When these spaces of "consensus" and "knowledge" come together, the stage is set for the adaptation and invention of new methodologies for social and economic development based on knowledge (Etzkowitz & Zhou, 2017).

The Triple Helix model postulates a third stage in which "Innovation in innovation" (Etzkowitz, 2003) occurs, in addition to the traditional and restricted sense of "innovation" as product innovation within enterprises. As the the relations between the actors of the university, business and government continue to increase, the conditions that produce innovation are reinforced (Fitjar, Gjelsvik, & Rodríguez-Pose, 2014). Innovation, i.e., the reconfiguration of elements in a more productive combination, assumes broader meanings in societies that are becoming increasingly knowledge-based (Dzisah & Etzkowitz, 2008). Formerly limited to the development of new products by companies, innovation now also includes the creation of organizational arrangements that enhance the innovative process (Etzkowitz & Zhou, 2017).

Interaction between the actors for innovations in tourism

The Kruskal-Wallis test was used to detect significant differences between the respondents. The test showed significant difference only in the variable K4 – research results generate effects on innovation in tourism (Table 6). For the other variables, we cannot affirm whether the differences are significant, with the Chi-square test below 1, as in the case of variables EC1, I1 and I4, which are linked to the formulation and implementation of policies, new concepts of innovation, and the creation of new organizational models.

Construct	Variables	Chi-square	DF	Sig.
	K1	2.347	2	0.309
	K2	3.330	2	0.189
Knowledge	K3	1.172	2	0.557
	K4	10.283	2	0.006
	K5	1.459	2	0.482
	SC1	0.739	2	0.691
Space of Consensus	SC2	1.953	2	0.377
	SC3	3.036	2	0.219

	SC4	1.174	2	0.556
	SC5	2.770	2	0.250
	I1	0.183	2	0.913
Innovation	I2	3.612	2	0.164
	I3	1.228	2	0.541
	I4	0.403	2	0.818

Table 6 - Percentages and descriptive measures for the variables of the constructs "Knowledge", "Space of Consensus" and "innovation"
Created by: The authors (2019).

The statistically significant differences found in a variable led us to further investigate the reasons for the significant difference in the result, between the groups of respondents – by organization (Table 7).

Organizations	Test	Std. Test	Error Test	Sig	A Sig
Business-Government	-6.329	4.279	-1.479	0.139	0.417
Business-University	12.079	3.851	3.137	0.002	0.005
Business-University	5.750	4.935	1.165	0.244	0.732

Table 7 - Comparison between pairs of organizations regarding the variable K4 (research results generate effects on innovation in tourism)
Created by: The authors (2019).

Comparison between pairs of organizations showed significant difference between the business and university respondents regarding the generation of innovation in tourism by means of research results, which represents the distancing between entrepreneurs who manage the tourist attractions surveyed and the university that generates knowledge. This also reflects a lack of materialization of the results. In the remaining pairs of organizations, although low, the result was not found to be significant.

The university is inspired to play a creative role in economic and social development, from an independent perspective, in dealing with the priorities of the government, industry and citizens. The interactions between the university, industry and government, which form a "triple helix" of innovation and entrepreneurship, are key to knowledge-based economic growth and social development. A bilateral relationship is subject to the properties of the love/hate dyad. On one hand, the acceptance of a proposal made by a person or organization of prestige can occur without a full consideration. On the other hand, there is a tendency to enter into conflict over objectives and goals. A trilateral relationship moderates these trends by introducing opportunities for mediation, building coalitions and indirect links (Etzkowitz & Zhou, 2017). In view of the above, the action of the government in Balneário Camboriú is fundamental for integrating the system of innovation. Interorganizational collaborations generate structural changes beyond the scope of what any one organization or person could do alone. Innovation is not linear, but interactive and collaborative (Ponchek, 2016).

Carlisle et al. (2013) present two projects that correspond to different types of collaboration with various interested parties that aim to support innovation and entrepreneurship, based on the Triple Helix. The projects, one from a trade association and the other from a university, maintained contacts with the government, tourism operators and large hotels to increase the standards, promotion, marketing or training for the market of mass tourism and also new market niches. The involvement of the university in the development of tourism can provide the potential for reducing poverty through tourism, generating localized knowledge and training students to become professional entrepreneurs, through high-quality innovations in the tourism niche, encouraging the creation of new types of tourism products, such as business tourism, cultural tourism and ecotourism; helping small indigenous companies to

promote their products and services and access potential customers inside and outside the Gambia. The projects have contributed in the countries of the Gambia and Tanzania for an enhanced approach to destination marketing (marketing innovation) and a collaborative approach to the development of the destination.

Conclusion

This article sought to examine the interactions between university, industry and government, in the process of implementation of innovations in destinations, specifically in relation to the tourist attractions of Balneário Camboriú (SC). The research identified a complex and broad system of tourist attractions, in which the various attractions of the Costa Verde e Mar - the tourist region in which the town is located - are also attributed to the destination Balneário Camboriú. Despite its increasing complexity, this fact can generate new possibilities for the study of the Triple Helix in tourism, creating opportunities for regional development. There was little interaction observed between the actors in the process of construction of knowledge, in their spaces of dialogue/consensus, reflecting a lack of knowledge about the innovations generated in the partnerships between them, because according to Zach & Hill (2017); current collaboration, shared knowledge and trust are associated with innovative behaviors with partner companies, but this centrality between the parties indicates which partners are the most important innovators in a population.

For Etzkowitz and Zhou (2017) regardless of whether all the spaces are sufficiently mature, innovation can occur even if it is a low technology stage right at the beginning. The "organized" Triple Helix is an invisible institutional tool for regional economic growth and social development. Thus, it can be a platform for the "formation of institutions" or the creation of hybrid organizations that integrate and combine elements of various spheres of the Triple Helix in its institutional design, to promote innovation. Organizational innovations, such as venture capital, science parks and incubators, which synthesize elements of various institutional spheres, are examples of such hybrid organizations (Etzkowitz, 2008).

Through collaboration between actors, there is an opportunity to generate knowledge and innovations that create significant competitive advantage for tourist destinations. The space of consensus is important for the formation of a democratic environment between the interested parties in the "win-win" relationship, respecting the characteristics and conditions of each actor, constituting, in this sense, hybrid organizations.

It is of utmost importance that the field of tourism increasingly involves the participation of universities, to promote incentives for entrepreneurship, thus enabling innovation, and generating economic and social development. Etzkowitz and Zhou (2017) emphasize that the university is the fundamental institution in knowledge-based societies, and government and industry were the main institutions of industrial society. The competitive advantage of the university in relation to other knowledge-producing institutions is its students. The dynamism of new arrivals, and their regularity, bring constant new ideas. This is in contrast with the R&D units of enterprises and government labs, which tend to continue without the "flow of human capital" that is an intrinsic part of the university. The government may be the best candidate to create a "Space of Consensus", for its moderating role, bringing together all the relevant actors to design and implement innovation projects in which business incubators, accelerators and technology transfer offices promote startups innovative development in a given region, supported by municipal governments, universities and sector-based business associations, among others (Etzkowitz & Zhou, 2017).

This was a pilot study that can form the basis of deeper research. Further studies could focus on deepening understanding of the system of tourist attractions in its relation with the

knowledge economy; identifying innovation in tourist attractions based on dynamic and complex environments; recognizing the conflicting relationships between the actors; identifying the structure of universities for the development of entrepreneurial universities, the construction and development of business incubators, accelerators and technology transfer offices; and developing projects for the promotion of startups in tourism, where multiple relationships coexist among the different stakeholders, such as tourists, tour operators, tourism companies, members of the community, university and government.

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