Multi-Stakeholder Innovation in Tourism Industry: A Recent Development and Future Directions

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Abstract: *Tourism is the most affected industry due to the Covid-19 pandemic, though it can be reinstated through innovations and collaborations. For instance, the marketing paradigm has shifted from product to service-dominant logic, influencing open innovations. The closed innovations are ineffective in the current business environment because of excluding other actors, such as suppliers, universities, research organizations, public institutes, competitors, and tourists, specifically during the pandemic. This indicates stakeholder networks are essential in promoting tourism industry innovations. Therefore, this research examined the existing literature on multi-stakeholder innovation in the tourism industry. The relevant articles were identified using multiple keywords search on major research databases and analyzed based on tourism innovation research stream, type, and characteristic of innovation (value creation-value capture), innovation platforms, research methodology, the network actors, and key concepts. After identifying the gap, relevant literature for academicians and practitioners was provided. The literature is expected to guide practitioners on the importance of stakeholder innovations to restore and improve tourism conditions from the pandemic.*

Keywords: *Literature review, Future direction, Innovation, Collaboration, Multi-stakeholder, Tourism industry*

1.   Introduction

Covid-19 pandemic affected the economic, social, and leisure aspects of life. Tourism was the most affected industry for various reasons, including canceled tourist visits, employee redundancy, and regulation of activities. However, this sector can be reinstated through innovations and collaborations. Innovations create a platform for individuals, organizations, governments, and economies as stakeholders to exchange innovative ideas.

The innovation theory shifted to the open paradigm by Chesbrough (2003), which emphasized opening innovation outside the firm, creating value for the organization and its stakeholders (Gupta & Govindarajan, 2003). In general, creating networks promotes tourism innovations through collaborations with other industries and the government. The integrated approach enhances innovations for tourism development. The isolated innovations, also called closed, are inefficient in the current business environment because they exclude other actors, including customers/users, for market competition (Lee et al., 2012). Organizations have evolved from using isolated or closed innovations. Therefore, exploring the multi-stakeholder innovations in the tourism industry is essential to integrate and map the existing literature and direct future research.

This research used relevant articles to form a conceptual, methodological, and thematic development (Paul & Criado, 2020), including systematic and meta-analytical reviews. The literature review provides information on the research topics by analyzing the findings and identifying future research gaps and directions. It also prevents the use of old theories and methods. Therefore, reviewed articles identify research

gaps based on widely applied constructs, theories, and methods (Paul & Criado, 2020). A good review article identifies the gaps and influences the direction for future research. The emerging tourism innovations require a systematic review of the existing literature. Therefore, there is a lack of comprehensive review articles on tourism innovation.

There are four major review papers on tourism innovations research. The first was by Hjalager (2010), which addressed innovation categories, including the product, process, managerial, marketing, and institutional. This research found gaps in the innovation process, driving forces, tourism barriers, technological innovation diffusion, the entrepreneurship role and academia, policy investigations and evaluation, and the development of tourism innovation theories. The second was by Gomezelj (2016) that reviewed hospitality and tourism innovations based on the available data up to 2014. The third was adopting the open innovation theory by Marasco et al. (2018), which reviewed collaborative innovations. Based on the data up to 2017, previous articles were analyzed based on the research location, analysis perspective, methodology, analysis level, and specific topics. This research divided the articles into five groups, cooperative behavior of innovating firms, co-creation, innovation collaborative networks, knowledge transfer, and innovation policies. The fourth research was by Pikkemaat et al. (2019) that classified tourism innovation research stream into innovation processes, context configurations, knowledge and technology, and eco-innovation.

This research updated the tourism innovation literature exploring multi-stakeholder innovation using the latest research by (Marasco et al., 2018; Pikkemaat et al., 2019). This followed the research streams by Pikkemaat et al. (2019) and classified previous articles into innovation processes, context configurations, knowledge and technology, and eco-innovation research streams. It explored the role of networks collaboration in promoting tourism innovations. The tourism industry should determine its network actors to establish innovation and the value creator and capturer (Chesbrough & Appleyard, 2007). The multi-stakeholder concept and its network actors are presented as the novelty in the literature review on the tourism industry. This research filled the gap (Gomezelj, 2016) and discussed the role of actors within the innovation process. This research's objective was to present a systematic review of the literature, provide insights on the addressed issues, and direction for future research in the context of multi-stakeholder innovation in the tourism industry.

Existing research showed that innovation concepts have developed into various closed, open, collaborative, and co-innovation paradigms. This integrated and mapped the previous literature on multi-stakeholder innovation in the tourism industry following the marketing paradigm changes from product to service-dominant logic and the emerging paradigm of open, collaborative, and co-innovation. Therefore, it can be used as a literature roadmap for academicians and practitioners and directs further research.

2. Literature Research

2.1. Theory of Innovation

Drucker (1985) defined innovation as endowing resources to create wealth. Innovations create and improve or modify the existing resources. It involves creating new values and satisfactions, converting material into resources, or improving resources to a new and more productive configuration. The multidisciplinary capabilities (knowledge, skills, and resources) are integrated for distinctive solutions, adding value to customers or consumers, enhancing the company's brand, employee wealth, and stakeholders' growth. This research used Drucker's ideas to challenge that of Schumpeter (1934), that stated innovation should focus on the producers for market competition. Schumpeter's

innovation concept is shown as a company's secret to surprise the market. However, this concept is irrelevant in the current business practice. The discussion on the innovation development theory follows several existing ones.

The theory of innovation in recent years has shifted to the open innovation paradigm by Chesbrough (2003), which emphasized allowing innovation outside the firm. The nature of the innovation process shifted from slightly isolated to participative forms such as open, collaborative, and co-innovation (Chesbrough & Appleyard, 2007; Lee et al., 2012). Participative or democratic innovation involves multiple actors collectively engaged in an innovation process, specifically the customers/users' contribution (Doz & Wilson, 2008; Von Hippel, 2005). This research discussed participatory innovation, including open, collaborative, and co-innovation (Lee et al., 2012). It focused on innovation processes by multiple actors or entities such as firms, suppliers, competitors, and customers (Baldwin & von Hippel, 2011; Chesbrough & Appleyard, 2007). With the development of innovation theory to be more open, collaboration is crucial for firm survival. Therefore, the isolated innovation or closed innovation is irrelevant in the current environment because the firm requires other actors such as customers/users for market competition (Lee et al., 2012)

This research used the service science perspective on service innovation involving collaboration actors to create value or benefit customers. Based on the shifting marketing paradigm from goods to service-dominant logic (S.L. Vargo & Lusch, 2014), this research found that the tourism industry changed to open, collaborative, and co-innovation (Lee et al., 2012), involving multi actors. The shift's main reason was that the dominant marketing logic focused on the customers' perspectives, demanding participation in the innovation processes. The second reason was that firms do not innovate services in isolation. (Chesbrough,

2003) stated that the innovation processes are stimulated and influenced by multi actors outside the firm.

These fundamental reasons contribute to the marketing paradigm shift from traditional to customer-focused, such as service-dominant logic theory and co-creation concept (Prahalad & Ramaswamy, 2004; Stephen L Vargo & Lusch, 2004). The service logic in innovation enhances customer experience and purpose, enhancing customer value (Lindhult et al., 2018). It involves service co-production and co-creation between the producer and the consumer and risks distribution among actors. The service-dominant logic in-service science provides information on service and innovating systems.

2.1.1 Innovation Evolution

Innovation in business organizations has evolved from closed to collaborative, open innovation, and currently co-innovation (Lee et al., 2012). Closed innovation is when the firm is solely involved in the idea generation, development, production to marketing, distribution, service, and financing. The R&D department is an essential source of innovation that supports the organization's value chain (Lee et al., 2012). Collaboration innovation involved firm employees. During the second shift of collaborative innovation, firm leaders realized partners' importance in designing an innovative value chain. Therefore, they combined their knowledge with other actors. Lee et al. (2012) stated that partnerships, strategic alliances, joint ventures, and technology sharing are widespread in the collaborative innovation era. Open innovation by Chesbrough (2003) uses collaborative innovation efforts for value creation. The open-innovation develops a global value chain through a new integrated innovation ecosystem for value creation solutions with collaborative arrangements (Lee et al., 2012). The collaborations are between firms and external partners such as universities, institutes, communities, and individuals. Co-innovation is a platform that applies new ideas or

approaches from internal and external sources to create new value or experience for stakeholders, including consumers (Lee et al., 2012). In contrast with others type of innovation, co-innovation involves end-users or the consumers in the innovation process.

2.1.2 Innovation Characteristic (Value Creation – Value Capture)

A recent research argues that it is essential to assess the value creation and capture and identify the creator and capture in the tourism innovation process. Chesbrough & Appleyard (2007) illustrated the matrix of value creation and capture dimensions. The value creation aspect determines whether the value is created within the company or through a community. The value capture aspect is an initiative to identify whether the company or the community within the ecosystem realizes the value.

Chesbrough & Appleyard (2007) identified four quadrants within the matrix. Furthermore, the matrix by Chesbrough & Appleyard (2007) is illustrated in Figure 1. First, the top left quadrant resides when the company solely captures and creates value from the innovation. Second, the lower-left quadrant position is when the value is created in-house but is captured and used by the community. Third, the upper right quadrant is created by the community and solely captured by the company. Lastly, the lower right quadrant is when communities participate and collaborate to provide value consumed by other communities for the greater good.
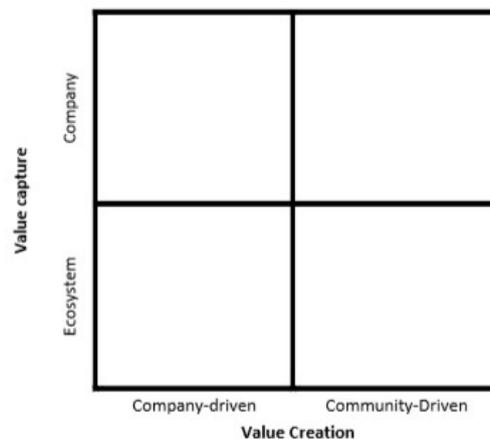
Figure 1.
 Matrix of Value Creation and Value Capture

Open innovation requires a balance between value creation and capture (Chesbrough & Appleyard, 2007). This follows the service-dominant paradigm, and research should address the importance of ecosystem and community-driven activities rather than company-driven and company captured.

2.2 Tourism Innovation Research
Previous research provided literature on innovation in tourism (Gomezelj, 2016; Hjalager, 2010; Marasco et al., 2018; Pikkemaat et al., 2019). This research followed the research streams by Pikkemaat et al. (2019) and classified previous articles into four broad innovation streams, namely, innovation processes, context configurations, knowledge and technology, and eco-innovation. Figure 2 shows the four tourism innovation pillars by Pikkemaat (2019).

Figure 2.
Pillars of Tourism Innovation Research

Each pillar shows the focus research area of innovation tourism. The first pillar is the innovation process, which focuses on the process for tourism innovation referred to as the product development stage. The second pillar focuses on specific context configurations such as the organization or destination (network) embe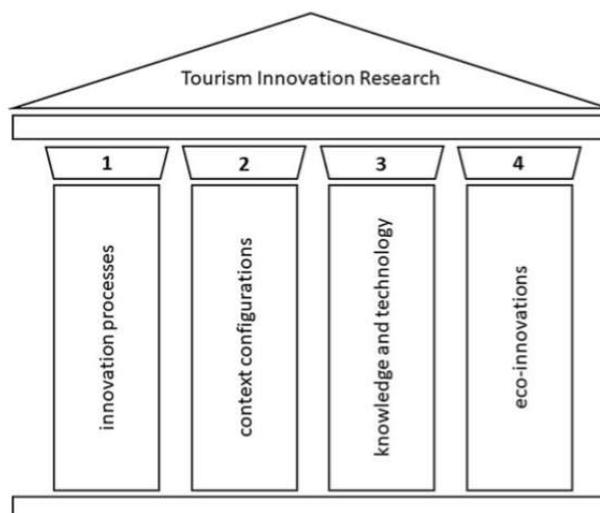dding the company. The tourism policy and destination governance patterns and actions are categorized in this pillar. The third pillar is knowledge and technology as well as showing contributions in knowledge, capacity, and technology diffusion and absorption. This pillar is crucial throughout the innovation process. Knowledge transfer in the tourism industry depends on employees' workplace perception and customers as co-creators. The fourth pillar is eco-innovation which explores the tourism eco-innovation concept. The research on this area appreciates the cost-saving effects of eco-innovation when it is long-term oriented. Eco-friendly and sustainable tourism are also categorized in this pillar.

3. Methodology

This research adopted a structured review of domain-based articles. Domain-based view article is structured on commonly used methods, theories, and constructs in the form of tables and figures (Paul & Criado, 2020). The related information is shown in tables on classic structured review articles, a method that uses keywords to search the literature in selected databases, identify emerging themes and literature gaps, and contribute to theory development (Marasco et al., 2018). A domain-based view provides readers with insightful information from the data reported. It shows the methods, theories and constructs already applied. Using domain-based view literature on methods, theories, and constructs, gaps can be identified based on the searched content (Paul & Criado, 2020). This research's literature review process included journal selection, year limitation, article selection and classification, and analysis. The process of literature review method is illustrated in Figure 3 below.
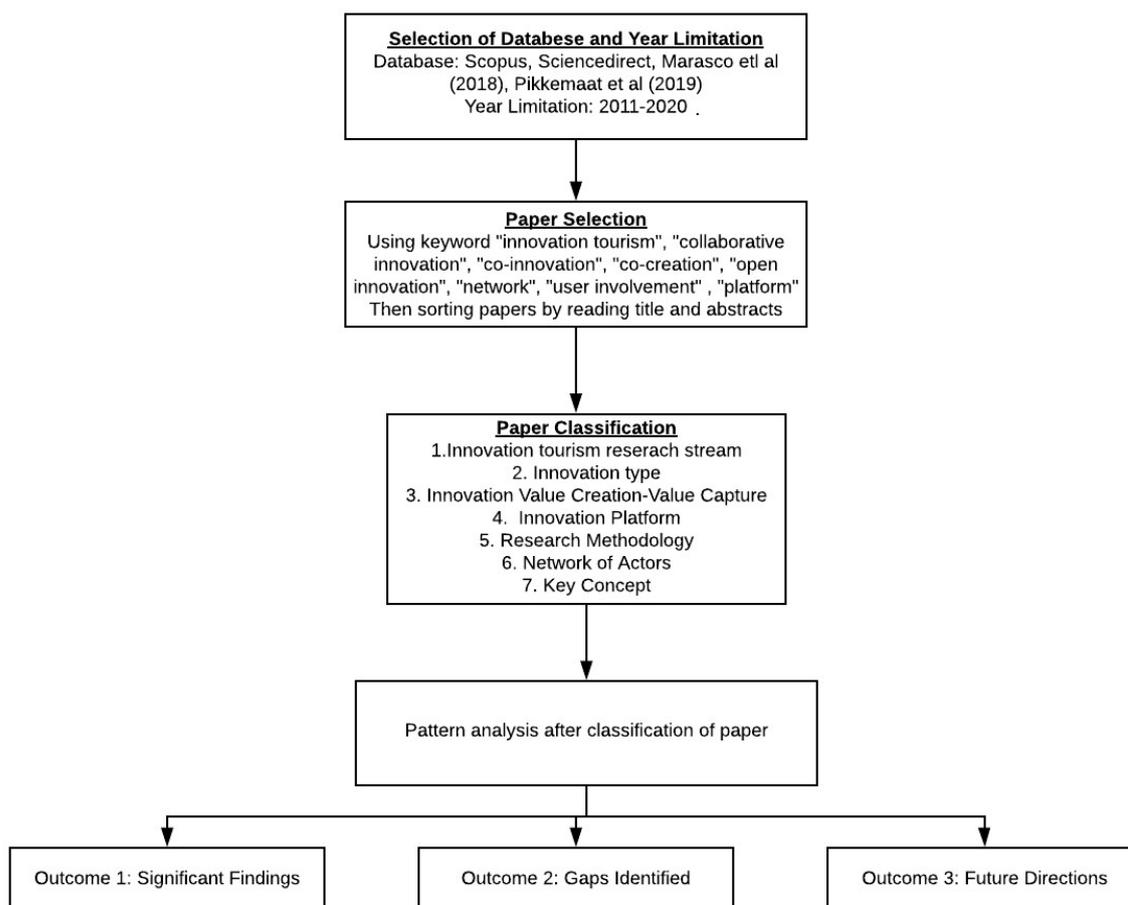
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┌─────────────────────────────────────────┐
│  Selection of Databese and Year Limitation │
│  Database: Scopus, Sciencedirect, Marasco etl al │
│        (2018), Pikkemaat et al (2019)     │
│        Year Limitation: 2011-2020  .      │
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│              Paper Selection              │
│  Using keyword "innovation tourism", "collaborative │
│  innovation", "co-innovation", "co-creation", "open │
│  innovation", "network", "user involvement" , "platform" │
│  Then sorting papers by reading title and abstracts │
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│            Paper Classification           │
│     1.Innovation tourism reserach stream  │
│            2. Innovation type             │
│  3. Innovation Value Creation-Value Capture │
│          4.  Innovation Platform          │
│          5. Research Methodology          │
│            6. Network of Actors           │
│              7. Key Concept               │
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│   Pattern analysis after classification of paper │
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│ Outcome 1:   │ │ Outcome 2:   │ │ Outcome 3:   │
│ Significant  │ │ Gaps         │ │ Future       │
│ Findings     │ │ Identified   │ │ Directions   │
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Figure 3.
Literature Review Method

Review Steps
This research identified the concept of multi-stakeholder innovation in the tourism industry and existing integrated literature within the research scope. This focused on the selected category. The first step involves the selection of a scholarly database by setting relevant keywords. The scholarly database used included Scopus, Science direct, and two previous literature reviews in tourism innovation (Marasco et al., 2018; Pikkemaat et al., 2019). It focused on research conducted between 2011-2020. The second step provided an extensive list of paper selections from the user database. This step generated many previous research on tourism industry innovations. The screening was based on keywords, title, and the 1,454 articles that matched the criteria. Third, the generated results are refined with keywords such as collaborative innovation, co-innovation, co-creation, open innovation,

network, user involvement, platform, collaboration, multi-stakeholder, and actor. These keywords only generate articles on multiple actors' collaboration in the innovation process. The articles with fewer actors in the innovation process or with closed innovation were eliminated. The 175 relevant articles were selected.

Fourth, the shortlisted literature was evaluated through the abstract and introduction, theoretical framework, findings, and conclusions, determining its relevance. The shortlisted articles attempted to fulfill the following criteria in the sections mentioned above:

- Discuss the tourism industry innovation (included in 4 research streams).
- Describe the role of multiple stakeholders/actors in the innovation process to define the type of innovation and network actors.

- Mention the actor that creates and capture the value from the innovation process
- Define the platform utilized by the stakeholder in the innovation such as digital, physical, or combination.
- Mention any key concepts (variables) that indicate multi-stakeholder innovation.
- Other research methodology of the classified literature.

The criteria above determined the relevant papers further evaluated and classified. Finally, based on the criteria above, 70 articles were further reviewed and analyzed. The reviewed articles summary is shown in Appendix Tables I, II, III, and IV.

The final step was pattern analysis which determined the findings, gaps, and direction for future research. This five-review step is explained in Figure 4.
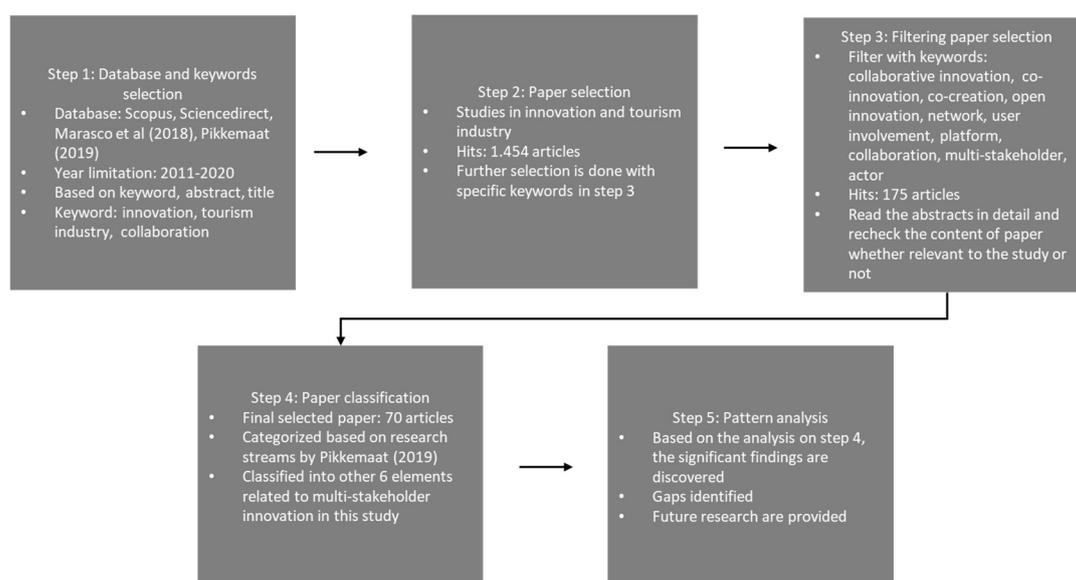
Step 1: Database and keywords selection
- Database: Scopus, Sciencedirect, Marasco et al (2018), Pikkemaat (2019)
- Year limitation: 2011-2020
- Based on keyword, abstract, title
- Keyword: innovation, tourism industry, collaboration

Step 2: Paper selection
- Studies in innovation and tourism industry
- Hits: 1.454 articles
- Further selection is done with specific keywords in step 3

Step 3: Filtering paper selection
- Filter with keywords: collaborative innovation, co-innovation, co-creation, open innovation, network, user involvement, platform, collaboration, multi-stakeholder, actor
- Hits: 175 articles
- Read the abstracts in detail and recheck the content of paper whether relevant to the study or not

Step 4: Paper classification
- Final selected paper: 70 articles
- Categorized based on research streams by Pikkemaat (2019)
- Classified into other 6 elements related to multi-stakeholder innovation in this study

Step 5: Pattern analysis
- Based on the analysis on step 4, the significant findings are discovered
- Gaps identified
- Future research are provided

Figure 4.
Review Steps

Paper Classification
This involved analyzing and classifying 70 out of 175 reviewed articles from the online database, following the following seven elements—first, tourism innovation research stream. Based on Pikkemaat (2019), the four pillars of tourism innovation were derived as: innovation process, context configuration, knowledge and technology, and eco-innovation. This latest literature review conducted thematic analysis following findings from previous literature by (Gomezelj, 2016; Hjalager, 2010; Marasco et al., 2018) and derived the four pillars from several articles on tourism innovation. Following the research streams by (Pikkemaat et al., 2019), this research classified previous research into these four pillars, becoming the latest classification of innovation stream in the

tourism industry. This research classified previous research based on their research stream to determine how the network actors in each stream are formed. The first innovation research pillar focuses on processes. The second pillar focuses on specific context configurations. The third shows contributions in knowledge, capacity, and technology diffusion and absorption. The fourth pillar involves an emerging field and explores eco-innovations in tourism and hospitality (Pikkemaat et al., 2019).

Lee et al. (2012) stated that innovation is shifting paradigms. In business, organizations' innovation has evolved in several stages, including, from closed innovation to collaborative, to open, and currently to co-innovation. Previous research are classified

based on the type of innovation to measure innovation development as open, collaborative, or adopting co-innovation. Each innovation is distinctive and determines the innovation process actors. Therefore, this research focused on multi-stakeholders, indicating this classification is relevant.

The innovation characteristic (Value Creation – Value Capture) was illustrated by Chesbrough & Appleyard (2007). This research argued that it is essential to assess the value creation and capture to identify the creator and capture in the tourism innovation process. The open innovation by Chesbrough should be a balance between value creation and capture. This research believed it is crucial to map previous research based on their value creation and capture process. Therefore, this research determined whether the multi-stakeholder innovation resides within the company or community and whether the values are captured solely by the company or all stakeholders within the ecosystem.

The innovation platform formed by previous research identified three aspects, including digital, physical, and combination. The innovation platform can be shown as a hub where stakeholders collaboratively participate in the process (G Parmentier & Mangematin, 2014; Guy Parmentier & Mangematin, 2011). Therefore, it should be added in the screening of existing research to determine the used platforms. Previous literature is classified into quantitative, qualitative, mixed-method, and review/conceptual papers on research methodology.

It is essential to determine the network actors while conducting a literature review on multi-stakeholder innovation. This research argued that acknowledging the participating actors determine the innovation type. It is important to emphasize that multiple parties perform the innovation processes. Addressing the key concepts in previous research identifies essential variables explaining how the stakeholder engages in the innovation process. The key concept classification highlights technical or the central terminology in the multi-stakeholder innovation process.

4. Finding and Discussion

The relevant articles were classified and categorized based on their stream in tourism innovation research, including, innovation process, context configuration, knowledge and technology, and eco-innovation. The categorized articles are illustrated in Table 1, 2, 3, and 4, respectively, in Appendix.

The classified articles were analyzed to understand the research development in tourism innovation, identifying findings, gaps, and implications for future research. These results are discussed in the following section.

4.1 Significant Findings
The 70 selected articles were classified into the four pillars research streams by Pikkemaat (2019). Most previous research focused only on the third and first pillars, namely knowledge & technology with 22 research or 31,42%, and innovation process with 21 research or 30%. The fourth pillar, eco-innovation, was the least discussed with only ten research or at 14,28%. Most research focused on the knowledge & technology research stream, specifically knowledge sharing, technology usage diffusion, and absorption. This was followed by the innovation process, specifically within destinations and businesses (Konu, 2015; Yeh & Ku, 2019; Zach & Hill, 2017). The limited information on the innovation process involving multi-stakeholder results in an insufficient understanding of their contributions within the tourism industry.

The innovation second pillar on tourism research focuses on organization and destination configuration correlating with each other. This includes research emphasizing tourism policy and destination governance actions (Carson et al., 2014; Mei et al., 2013; Ropret et al., 2014). Few research focused on eco-innovation issues, with only a few emphasizing sustainability, cost-savings,

and circular process within tourism (Aquino et al., 2018; Gabriel et al., 2016; Martini et al., 2017). Feng et al. (2018) described co-innovation through an integrated network between tourism committees, NGOs, and tourists for poverty alleviation in rural tourism.

Lee et al. (2012) classified the previous research on tourism innovation based on the type of innovation identified from the actors involved, the key concepts (convergence, collaboration, co-creation), and the innovative outputs. The literature review showed that most research were influenced by the concept of open innovation by Chesbrough (2003). The open innovation (innovation 3.0) concept allows innovation beyond the firm. Forty-one research or 58,5%, are classified as open innovation, whereas 10 or 14,20% emphasized collaborative innovation, and the 19 research at 27,14% examined the co-innovation type of innovation. Neuhofer et al. (2012) and Polese et al. (2018) examined co-innovation for knowledge and technology pillars highlighting the co-creation experience between the network actors, including tourists.

The mapping of value creator and capturer showed that the community created value in the tourism industry but was solely captured by the company. The multi-stakeholder in the tourism industry create value while the company/destination captures the value in new product, services, value chain, customer value, and others. The recent research assessing the previous literature on the multi-stakeholder within innovation support the open business strategy by Chesbrough.

The value in the tourism industry is created by multi-stakeholders such as suppliers and consumers and not solely in-house. 52,11% to 47,89 research show that the company contributed most value and captured solely, not the ecosystem. Therefore, the created innovation in tourism does not prioritize mutual benefits by the entire ecosystem. As indicated by Chesbrough, open innovation should be balanced between value creation

and capture. When the value is collaboratively created by the community and captured by the entire ecosystem, it is beneficial to all the stakeholders in the ecosystem. Therefore, the co-innovation process should be promoted within the tourism industry to apply balance. Several research included multiple stakeholders, such as tourists and communities in their innovation network as the value creator and capturer; (Cannas, 2018; Feng et al., 2018; Jimenez-Zarco et al., 2011; Konu, 2015; Marques & Borba, 2017; Peng & Lin, 2016; Sigala, 2017; Zhang et al., 2015).
The literature review showed three types of innovation platforms within tourism innovation, including digital (online), physical (offline), and combination (online and offline). There are 27 research, or 38,50%, explored the physical platform of innovation, while 18 or 25,70% research focused on digital platform, and 10 research or 14,20% used combination platforms. The remaining 15 research did not mention any platform where stakeholders communicate, engage, or collaborate. These platforms are used to communicate and create and capture value among the stakeholder. Most research exploring digital platforms highlighted ICT adoption as the key concept (Del Chiappa & Baggio, 2015; Del Vecchio et al., 2018; Gössling et al., 2018; Lu et al., 2015; Makkonen & Hokkanen, 2013; Torrent-Sellens et al., 2016).

A total of 37 and 17 research used qualitative and quantitative methodologies, while 8 were reviews or conceptual papers. Previous research used different terms to describe actors/stakeholders, hence, the tourism context was the selected criteria. Generally, tourism suppliers include destinations, hotels, travel agencies, tourism communities, local governments, and DMO. When the community creates value, it affects individuals within the ecosystem. Zhang et al. (2015) investigated eco-innovation that promotes sustainability tourism using the system approach. The co-innovation network is between academicians, policymakers, tourism operators, and residents.

The previous research' key concepts included collaboration, co-creation, engagement, coordination, network, participation, ICT facilitation or technology adoption, sharing knowledge, and participative leadership/governance among stakeholders. These findings show that previous research on multi-stakeholder in innovation used different terms and techniques.

There are several previous studies on tourism that focused on conducting co-innovation and using the point of view of multi-stakeholder in creating and capturing the value of innovation. Hoarau & Kline, (2014) presents the model of innovation through co-creation. This case study has allowed us to illustrate examples of co-creation, knowledge sharing, and reflexivity during tourism firms' innovation processes. Differ from Marques & Borba (2017) which conduct co-innovation in the case study of creative tourism context, this study focuses on digital technologies act in the co-creative remaking of a city. Co-creative processes help to promote creative tourism. Based on this study, technology stimulates higher involvement of both residents and tourists, creating better synergies for the ecosystem. Polese et al., (2018) conduct a case study by using the perspective of service-dominant logic and service science, propose different organizational layouts for producing and harmonizing value co-creation allow the elaboration of a framework that underline the main stakeholder groups (actors), the kind of resources exchanged (resource integration), the tools employed (technology), and the institution exchange among users (institutions). This study applies the model obtained to the tourism sector for managing and optimizing value co-creation and sustainability in the long run.

A case study conducted by Lalicic, (2018) identifies that stakeholders interact with each other, reach agreements and solve joint problems on the platform. This paper aims to visualize the communication processes between stakeholders who discuss, reach consensus and engage with user-generated ideas through an open innovation platform facilitated by Destination Management Organization (DMO) as the orchestrator. Insufficient evidence within the case evidence to confirm the role of DMOs or government as orchestrators of innovation processes. Thus, this study will explore a central actor as an orchestrator within the innovation process of tourism.

The study by Cannas (2018), explores the collective value generated by the interactions of multiple actors who perform a cultural tourism event through which alternative spaces of value creation and value appropriation have emerged. Due to the direct stakeholders' engagement by symmetric interactions and collaborative practices, actors co-create value through a mix of social, cultural, economic, and environmental mechanisms, and generate outcomes. But this study does not investigate deeply the value co-creation mechanisms and meanings, as well as on the outcomes of innovation because they did not directly investigate tourists due to time constraints.

Furthermore, Eide et al. (2017) mentioned that knowledge about innovation and value co-creation within experience-based sectors has increased, this study argues that there is a need to focus on challenges that tourism management faces overtime when it wishes to maintain innovations in an experience concept. This study addresses three important reasons and suggests an analytical model which employs four theoretical constructs namely, the experience concept, the experience system, internal engagement, and external engagement. Future research can both include a more direct focus on consumers in the theoretical framework, or in other ways, participation of consumers, not only in co-production but also in maintaining experience concept innovations.

Action research employed by Chiabai et al. (2011) regarding the use of the website, where the stakeholders are placed at the center of the decisional process. The analysis provides an indication of how to personalize and differentiate the cultural tourism offer according to the stakeholders' perspectives.

Innovative techniques of stakeholders' engagement are offered by information and communication technologies tools that can play a vital role in today's cultural destinations. However, the study shows that the Web is yet to be utilized as an effective tool in stakeholders' participation processes.

From previous studies we can see how incorporating a value co-creation through the engagement of tourists, would enable policymakers to stay in line with tourists' needs and invest in following their wishes which leads to significant improvement in the quality of the services offered to tourists.

4.2 Gap Identified

This research identified five gaps that can be considered in future. For instance, more information is required on the process and eco-innovation pillar of the innovation stream. The results showed that the innovation process is broadly investigated as the second most written article. However, research focused on the final output of the process. More information is required concerning how the actors collaborate within the innovation process. Furthermore, the recent finding showed that the eco-innovation pillar on sustainability lacks discussion. Based on Pikkemaat et al. (2019), more empirical evidence is required in eco-innovation and open innovation at the enterprise and destination level.

There is limited number of research in co-innovation. Following the consumer role in the value creation process, (Lee et al., 2012; S.L. Vargo & Lusch, 2014) inferred that co-innovation is essential and should be discussed further. This type of innovation acknowledges consumers' roles as crucial in the value creation process. Previous research began to focus on value co-creation, but more research is still needed to deepen knowledge on collaboration (e.g., stakeholder engagement).

Third, there is a gap to add to the open innovation by Chesbrough, which requires a balance between value creation and capture. The third gap was on value creator and capturer; most research show that the created value is community-driven but solely captured by the company. The value created by multi-stakeholders follows open innovation. However, (Chesbrough & Appleyard, 2007) suggested that open innovations require a balance between value creation and capture. Fourth, there was a lack of information and practical applications of innovation platforms within the tourism industry. (Lalicic, 2018; Schut, 2017; Tui, 2013) stated that innovation platforms are crucial for stakeholders because they facilitate collaborations and participation. Previous research had limited information on the innovation platform in the tourism industry, specifically on their practical practices. This research argued that there are insufficient discussions on platforms for collaborations between multi-stakeholders, specifically in its practical application within the tourism industry.

Fifth, the system approach methodology is significant in innovation tourism research. Following the effects of stakeholders' involvement in the processes and outcomes, it is suggested that future research should apply case research such as (Yin, 2014), method (Perry, 2000), or soft systems (Checkland & Scholes, 1990). When this area is explored, it will illuminate scholars and industry practitioners on stakeholders' different views or interests and their solutions.

4.3 Implication for Future Research

This research provided a roadmap of valuable literature for academicians and practitioners in the tourism industry to stimulate further research. Furthermore, with the effects of the pandemic on tourism, this research can guide practitioners on the importance of innovation in collaboration with stakeholders to restore and boost the industry.

This research provided directions for further research in tourism multi-stakeholder innovation. The findings and identified gaps established research implications. Previous research focused on multi-stakeholder innovation, but more research is required on the collaboration process (e.g., stakeholder

engagement). Furthermore, more research are required on co-innovation involving consumers. Developing future collaboration will benefit the stakeholders, including the consumers. This can be achieved when future research fill the gap on the importance of ecosystem and community-driven activities instead of company-driven and company captured. Based on the SDL concept, a balance is required between value creation and capture.

Based on the methodology, future research should apply a holistic or system approach to develop tourism innovation. Therefore, this will enhance future collaboration to benefit the stakeholders. Finally, research on innovation platforms is essential to explore the multi-stakeholder collaborative innovation in the tourism industry. This will add knowledge on how stakeholders apply platforms to communicate, co-create, and collaborate with others in the innovation process.

5. Conclusions

This research reviewed previous empirical research on tourism industry innovation. The relevant content was first identified by going through the abstract and keywords and identified 70 related articles. Afterward, they were classified into seven elements, including tourism innovation research stream, type of innovation, Innovation Characteristic (Value Creation – Value Capture), innovation platform, research methodology, network actors, and key concepts. This research highlighted the empirical research development in the tourism industry innovations for the past ten years, specifically on multi-stakeholder involvement.

The findings identified some gaps that established implications for future research. The results recommended further analysis of tourism innovations, focusing on the process and eco-innovation to deepen knowledge on stakeholder collaboration, such as stakeholder engagement. There is limited research on the co-innovation paradigm, while the available

research provide less information on the innovation platform, specifically practical practices. The system approach in methodology should be implemented on stakeholders in the innovative processes and outcomes. Finally, this practical practices is expected to promote the community to focus on the less examined aspects of tourism innovation and provide insights for future research.

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Appendix

Table 1.
Tourism Innovation Research Pillar: Innovation Process

No	Authors	Type of Innovation	Value Creation - Value Capture	Network of Actors	Key Concepts	Innovation Platform	Methodology
1	Eide et al. (2017)	Co-Innovation	community-driven - company capture	internal actor: employee, external actor: tourist, hotel, transportation	engagement, co-creation	n/a	Qualitative
2	Grissemann et al. (2013)	Co-Innovation	community-driven - company capture	hotel owner, employee, customers	Employee engagement, customer participation, IT, networking	Digital	Quantitative
3	Martinez-Roman et al. (2015)	Open Innovation	company driven - company capture	tourism SME, suppliers, distributors, competitors	cooperation	Physical	Quantitative
4	Zach (2016)	Open Innovation	community-driven - company capture	tourism DMO	collaboration, leadership communication	n/a	Quantitative
5	Hjalager and Konu (2011)	Open Innovation	community-driven - company capture	destination, supplier, local community,	co-creation, co-branding, collaboration, partnership	Digital	Qualitative
6	Konu (2015)	Co-Innovation	community-driven - ecosystem	destination, customers, suppliers	co-creation, customers involvement	Digital	Qualitative
7	Marques and Borba (2017)	Co-Innovation	community-driven - ecosystem capture	local community, local business, tourists.	co-creation, ICT	Physical	Qualitative
8	Favre-Bonte et al. (2016)	Open Innovation	community-driven - company capture	destination, travel agency	network, partnership	Physical	Qualitative
9	Bjork (2014)	Open Innovation	community-driven - ecosystem capture	quadruple helix: public, academia, industry, civil society	coordination, co-creation, knowledge transfer	Physical	Mixed-Method

10	Gardiner & Scott (2018)	Collaborative Innovation	community-driven - company capture	government, tourism stakeholder, investor	innovation experience, collaboration	n/a	Mixed-Method
11	Alford & Duan (2018)	Open Innovation	community-driven - company capture	DMO	collaboration, partnership	Combination	Qualitative
12	Cassel & Pashkelich(2014)	Open Innovation	community-driven - company capture	the private sector, local government	participation, collaboration	n/a	Qualitative
13	Hoarau, H (2014)	Open Innovation	community-driven - company capture	NGO, researcher, tourism practitioners	knowledge sharing, ICT	Physical	Qualitative
14	Hoarau, H (2016)	Open Innovation	community-driven - company capture	tourism company, NGO competitors, researcher	knowledge sharing, co-creation	Physical	Review
15	Pikkemaat, B & Peters, M (2016)	Open Innovation	community-driven - company capture	DMO, entrepreneur, tourism business	collaboration, entrepreneurial, knowledge sharing	Physical	Qualitative
16	Neuhofer (2016)	Co-Innovation	community-driven - ecosystem capture	tourist, tourism suppliers	co-creation, ICT	Digital	Review
17	Pikkemaat et al. (2018)	Collaborative Innovation	community-driven - company capture	entrepreneurs, DMO	Networking, knowledge sharing, ICT	Digital	Qualitative
18	Schofield, P et al. (2018)	Open Innovation	community-driven - company capture	DMO, tourism partners	collaboration	Physical	Qualitative
19	Yeh, C, G & Ku, E.C (2019)	Open Innovation	community-driven - company capture	community	collaboration, knowledge sharing	Digital	Quantitative
20	Mitchell, P & Fisher R (2010)	Collaborative Innovation	community-driven - company capture	local community	partnership, collaboration	n/a	Qualitative
21	Chiabai A et al	Co-Innovation	community-driven - company capture	residents, tourists, local and external providers	ICT, participation, partnership	Digital	Mixed-Method

Table 2.

Tourism Innovation Research Pillar: Context Configuration

No	Authors	Type of Innovation	Value Creation - Value Capture	Network of Actors	Key Concepts	Innovation Platform	Methodology
1	Li et al. (2017)	Open Innovation	community-driven - ecosystem capture	employees, partners, volunteers	multiple parties' cooperation	Combination	Qualitative
2	Brouder (2012)	Open Innovation	community-driven - ecosystem capture	local community, entrepreneur	network, co-evolution, creative outpost	n/a	Qualitative
3	Carson et al. (2013)	Open Innovation	community-driven - company capture	community	networking, collaboration, knowledge exchange	n/a	Qualitative
4	Tolstad (2014)	Open Innovation	community-driven - company capture	tourism partner	network, collaboration	Physical	Qualitative
5	Carlisle et al. (2013)	Open Innovation	community-driven - ecosystem capture	the triple helix: public sector, private sector, academic institution	knowledge transfer, entrepreneurship, institutional support	Combination	Qualitative
6	Mei et al. (2013)	Open Innovation	company- driven - ecosystem capture	government, public sector, private sector, industry operators	network, collaboration	Physical	Qualitative
7	Ropret et al. (2014)	Collaborative Innovation	company-driven - ecosystem capture	tourism stakeholder	ICT, tourism policy	Physical	Quantitative
8	Peng & Lin (2016)	Co-Innovation	community-driven - ecosystem capture	tourist, business, community, government	knowledge sharing, collaboration, entrepreneurship	Physical	Qualitative
9	Chathoth et al. (2014)	Open Innovation	company-driven - ecosystem capture	tourist, hotel	engagement, co-creation, technology	Physical	Qualitative
10	Chen et al. (2017)	Open Innovation	community-driven - company capture	travel agents, suppliers	co-creation, ICT, collaboration	n/a	Quantitative
11	Elche et al. (2018)	Collaborative Innovation	company-driven - ecosystem capture	tourism stakeholder	collaboration, cooperative, partnership	n/a	Quantitative

12	Lalicic, L (2018)	Co-Innovation	community-driven - ecosystem capture	DMO, tourism stakeholder	collaboration, sharing knowledge, ICT	Combination	Qualitative
13	Milwood & Roehl (2018)	Open Innovation	community-driven - company capture	DMO, DMO partners	orchestration network, collaborative	Physical	Qualitative
14	Cannas, R (2018)	Co-Innovation	community-driven - ecosystem capture	community, tourist, business partners	co-creation, collaboration	Physical	Qualitative
15	Novelli, M et al	Open Innovation	community-driven - ecosystem capture	SME, tourism local players	Network, collaboration, knowledge transfer	Physical	Qualitative
16	Novani, S et al. (2015)	Co-Innovation	community-driven –ecosystem capture	entrepreneur, government, planning agency, tourist	co-creation, collaboration	Physical	Quantitative
17	Novani, S et al. (2019)	Co-Innovation	community-driven - ecosystem capture	academics, government, community, tourist	co-creation, collaboration	Physical	Mixed-Method

Table 3.
Tourism Innovation Research Pillar: Knowledge and Technology

No	Authors	Type of Innovation	Value Creation - Value Capture	Network of Actors	Key Concepts	Innovation Platform	Methodology
1	Camison et al. (2017)	Open Innovation	community-driven - company capture	destination, suppliers, subcontractors, customers, and support institutions	shared capabilities, active cooperation	n/a	Quantitative
2	Jimenez-Zarco et al. (2011)	Co-Innovation	community-driven - ecosystem capture	employee, competitor, customer	ICT, coordination	Digital	Quantitative

3	Hjalager and Nordin (2011)	Co-Innovation	community-driven - company capture	tourist, communities	co-design, collaboration, co-production	Combination	Review/ Conceptual
4	Hoarau and Kline (2014)	Co-Innovation	community-driven - company capture	researcher, destination, tourist	sharing knowledge, co-creation	Physical	Qualitative
5	McCabe et al. (2012)	Open Innovation	community-driven - ecosystem capture	hotel, tour operator, the tourism community	ICT, stakeholder collaboration	Combination	Qualitative
6	Neuhofer et al. (2012)	Co-Innovation	community-driven - company capture	tourist, communities, supplier	ICT, co-creation experiences	Combination	Review/ Conceptual
7	Sigala & Marindis (2012)	Open Innovation	community-driven - company capture	DMO, community	collaboration, participation, ICT	Digital	Review/ Conceptual
8	Sigala (2017)	Co-Innovation	community-driven - ecosystem capture	tourism suppliers, tourists, community	collaboration, co-creation	Combination	Review/ Conceptual
9	Booyens and Rogerson (2017)	Open Innovation	company-driven - ecosystem capture	suppliers, government, business forum	Networking, knowledge sharing	Physical	Mixed-Method
10	Farsani et al. (2014)	Open Innovation	community-driven - ecosystem capture	geotourism institutions, educational institutions	network, collaboration, knowledge transfer	Physical	Mixed-Method
11	Zach and Hill (2017)	Open Innovation	community-driven - ecosystem capture	tourism supplier, community	collaboration, shared knowledge, network, trust	n/a	Quantitative
12	Larsson and Lindstrom (2014)	Open Innovation	community-driven - company capture	destination, tourism partner	collaboration, knowledge sharing, co-evolution	n/a	Qualitative
13	Del Chiappa & Baggio (2015)	Collaborative Innovation	company-driven - ecosystem capture	accommodation, travel agencies, the travel association	ICT, knowledge sharing, network	Digital	Mixed-Method
14	Polese et al. (2018)	Co-Innovation	community-driven - company capture	tourism stakeholders, tourist	co-creation, technology adoption (ICT)	Digital	Qualitative

No	Authors	Type of Innovation	Value Creation - Value Capture	Network of Actors	Key Concepts	Innovation Platform	Methodology
15	Del Vecchio et al. (2018)	Open Innovation	community-driven - company capture	tourist	big data, co-creation, tourist involvement	Digital	Qualitative
16	Gossling, S et al. (2018)	Open Innovation	community-driven - company capture	hotel manager, tourist	co-creation	Digital	Qualitative
17	Gossling, S & Lane, B (2015)	Collaborative Innovation	community-driven - company capture	DMO	ICT, co-creation	Digital	Qualitative
18	Lu, J (2015)	Collaborative Innovation	company-driven - ecosystem capture	tourism partners	ICT adoption	Digital	Quantitative
19	Makkonen & Hakkonen (2013)	Collaborative Innovation	company driven - company capture	tourism planning, marketing experts	ICT, networking, economic impact, tourist attraction	Digital	Quantitative
20	Cabiddu, F et al. (2016)	Open Innovation	community-driven - company capture	tourism partners, tourist	co-creation, ICT, collaboration	Digital	Qualitative
21	Torrent-Sellens, J et al (2016)	Open Innovation	company-driven - ecosystem capture	tourism SME	ICT, co-innovative	Digital	Quantitative
22	Trunfio, M & Campan (2019)	Open Innovation	community-driven - ecosystem capture	DMO, local community, local firm	co-creation, participative governance, ICT	Combination	Review/ Conceptual

Table 4.
Tourism Innovation Research Pillar: Eco-Innovation

No	Authors	Type of Innovation	Value Creation - Value Capture	Network of Actors	Key Concepts	Innovation Platform	Methodology
1	Kokkranikal and Morrison (2011)	Open Innovation	community-driven - ecosystem capture	hotel, tour operator, the tourism community	entrepreneurial innovation, network, cooperation	Physical	Qualitative
2	He et al. (2018)	Open Innovation	company-driven - ecosystem capture	government, tourist, tourism enterprise	government support	n/a	Quantitative

3	Aquino et al. (2018)	Open Innovation	community-driven - ecosystem capture	community	entrepreneurship, community development	n/a	Review/ Conceptual
4	Feng, N et al. (2018)	Co-Innovation	community-driven - ecosystem capture	tourist, business operators, tourism committee, NGO	network, collaboration	Combination	Qualitative
5	Martini, U et al. (2017)	Open Innovation	company-driven - ecosystem capture	the private sector, public actors, local communities, tourist	partnership, co-creation, network	Physical	Mixed-Method
6	Sakdiyakorn & Si1arak (2016)	Open Innovation	community-driven - ecosystem capture	community, residents, academics, government, entrepreneur	network collaboration, ICT, entrepreneurial spirit	Physical	Qualitative
7	Gabriel, A (2016)	Collaborative Innovation	community-driven - company capture	university, local government, tourism agent	co-creation, creativity	Physical	Quantitative
8	Lin, D & Simmons, D (2017)	Open Innovation	community-driven - ecosystem capture	government, NGO, public	Participation, collaborative	Physical	Qualitative
9	Nguyen, T et al. (2019)	Open Innovation	community-driven - ecosystem capture	n/a	partnership, network	n/a	
10	Zhang, J et al. (2015)	Co-Innovation	community-driven - ecosystem capture	researcher, tourism operators, policymakers, residents	network	Physical	Quantitative