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Idea generation techniques in pop-up tourism labs

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A B S T R A C T

This study is the first of its kind – at least to the author's knowledge – that employs the knowledge creation theory to propose a new model of idea generation in short-term tourism innovation labs. This qualitative multi-case study explores six labs to reveal the elements of the idea generation techniques used in the labs. Furthermore, by modifying the existing knowledge creation process model, this study assembles the elements into a sequence. It shows that collaborative knowledge creation in tourism can potentially be enabled by employing techniques that include an informal introduction, individual thinking and presentations, group and plenary discussions, followed by a recapitulation at the end. The study offers a practical guide for designing idea generation techniques in tourism labs.

1. Introduction

Idea generation techniques have been widely used to support innovation processes in organizations (Linsey et al., 2011). An idea generation technique can be defined as "a plausibly effective prescription expressing more than common knowledge" to support the formation of new ideas (McAdam, 2004; Smith, 1998, p. 109). The most discussed examples are brainstorming and brainwriting. A brainstorming process starts with the explanation of the problem by a facilitator, followed by a verbal exchange of the participants' ideas (Linsey et al., 2011). Conversely, brainwriting involves the exchange of written ideas (Litcanu, Prostean, Oros, & Mnerie, 2015). Despite the popularity and potential of the idea generation techniques, existing literature has mostly focused on the effectiveness and outcome of one or a few techniques. Thus, previous studies have paid little attention to what elements are assembled in the techniques (Wöhler & Reinhardt, 2021).

Furthermore, idea generation techniques are normally used in innovation workshops and labs. Innovation labs are physical or virtual environments where suitable tools and methods are used to support the process of innovation or idea generation (Gey, Meyer, & Thieme, 2013). Innovation labs are also a form of collaborative innovation, which is crucial in tourism (Marasco, De Martino, Magnotti, & Morvillo, 2018). By collaborating with customers and other stakeholders, tourism firms can increase their innovation capacity through knowledge transfer (Hjalager, 2010). This is especially important for small- and medium-sized tourism firms, as their innovation approach is rarely knowledge-based and systematic due to a lack of resources (Nordin & Hjalager,

2017).Thus, innovation labs have the potential to enable systematic and knowledge-based innovation approach in tourism firms (Høegh-Guldberg, Eide, & Yati, 2022).

Some innovation labs are temporary and physically mobile as a way of ensuring agility and flexibility – they are known as 'pop-up' innovation labs (Bloom & Faulkner, 2016). These pop-up labs have the potential for collaborative innovation in tourism, where different tourism stakeholders can meet without the need for costly resources. However, despite the palpable benefits in other sectors (e.g. see Holotiuk & Beimborn, 2019; Schmidt & Brinks, 2017), these labs are rarely studied in the tourism sector. Consequently, little is known about the idea generation techniques used in pop-up tourism innovation labs. This study aims to fill these gaps by answering the research question: *How do idea generation techniques enable collaborative knowledge creation in pop-up tourism innovation labs?*

To answer the aforementioned question, this study explores six cases in the light of previous literature on idea generation techniques and the knowledge creation theory. The cases involve six pop-up innovation labs in tourism that used different idea generation techniques. The findings of the study – which are based on the participants' perspectives – reveal a new model of idea generation techniques that has the potential to enable collaborative and innovative knowledge creation in tourism.

2. Theoretical framework

This section consists of two sub-sections. The first sub-section elaborates on the importance of knowledge sharing and knowledge creation

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for innovation, especially in tourism. It also presents the knowledge creation model that is relevant to this study. Next, the second sub-section presents previous studies on idea generation techniques in general and in tourism innovation labs.

2.1. Knowledge sharing and knowledge creation for tourism innovation

Innovation can be viewed as the result of knowledge creation and application (Popadiuk & Choo, 2006). Thus, knowledge sharing in organizations that leads to new knowledge creation is the key to innovative solutions (Nonaka & Takeuchi, 1995). Consequently, knowledge sharing is indispensable for tourism innovation (Hoarau & Kline, 2014; Pikkemaat, Peters, & Bichler, 2019). However, not all knowledge is easy to share. Nonaka and Takeuchi (1995) assert there are two types of knowledge: explicit and tacit knowledge. Explicit knowledge is formal, systematic, and can be codified into documents. Therefore, explicit knowledge can be shared easily. Conversely, tacit knowledge is less systematic, highly personalized, and difficult to formalize. Tacit knowledge is acquired from experiences and practices in a specific context. Thus, it is difficult to articulate and share.

Tacit knowledge is increasingly regarded as the key to tourism innovation and competitive advantage (Marasco et al., 2018; Weidenfeld, Williams, & Butler, 2010). This is because tacit knowledge is more common in small and micro tourism firms, as they tend to have fewer resources to codify and create explicit knowledge (McTiernan, Musgrave, & Cooper, 2021). Therefore, sharing tacit knowledge among tourism firms is important, especially for collaborative innovation (Marasco et al., 2018). Moreover, acquiring tacit knowledge from external sources is crucial for innovation in small and micro tourism firms (Hoarau, 2014). This can be done by undertaking practices together or learning by doing with external stakeholders (Hoarau & Kline, 2014). However, knowledge sharing depends on several factors – among them trust, leadership, social network, and technological support (McTiernan et al., 2021; Riege, 2005). Therefore, there is a need for more case studies on knowledge sharing with external stakeholders in tourism involving different types of interactions and environments (Hoarau & Kline, 2014; Raisi, Baggio, Barratt-Pugh, & Willson, 2020; Weidenfeld et al., 2010).

While knowledge sharing is vital in tourism innovation processes, the shared knowledge also has to be captured, codified, and made explicit so it can be adapted into new services or experiences (Hjalager, 2010). According to Weidenfeld et al. (2010), the most common way to codify tacit knowledge so that it becomes explicit knowledge is through simple activities such as discussions and brainstorming. In tourism, this can be done through seminars, meetings, and inter-organizational exchanges that include activities such as observational learning (Weidenfeld et al., 2010). Nonaka and Takeuchi (1995) suggest a framework for knowledge conversion, known as the SECI model of knowledge creation. SECI stands for Socialization, Externalization, Combination, and Internalization.

According to Nonaka and Takeuchi (1995), the knowledge creation process starts with the Socialization phase, where tacit knowledge is shared among individuals in an organization during social interactions. Mutual trust is important in this phase. Next, in the Externalization phase, the shared tacit knowledge is made explicit through dialogues so that it can be documented either through words or images. The collected explicit knowledge is then combined, modified, and converted into more complex and systematic explicit knowledge in the Combination phase. This new explicit knowledge is then distributed among individuals. Lastly, the newly-created explicit knowledge is converted into tacit knowledge by individuals in the Internalization phase. The conversion from explicit to tacit knowledge can be done by reflecting on, and practicing, the new knowledge. Nonaka and Toyama (2003) also emphasize that the knowledge creation process is a spiral – rather than a circle – which becomes bigger as new knowledge creation is triggered.

However, the SECI model is not free from criticism. For example,

Gourlay (2006) argues that some of the knowledge conversion modes in the SECI model are flawed and need more empirical evidence. Also, Li and Gao (2003) highlight the fact that the SECI model originated in the Japanese manufacturing sector, and thus it might be context dependent. And due to the complexity of tacit knowledge, the model is problematic and difficult to test (Farnese, Barbieri, Chirumbolo, & Patriotta, 2019). Therefore, previous studies stress the need for further investigations of this model in different contexts and organizational forms, including in tourism (Martínez-Martínez, Cegarra-Navarro, & García-Pérez, 2015).

In the tourism context, previous studies point out some differences when applying the SECI model. For example, Rao, Fang, and Liu (2023) argue that it is more difficult to codify tacit knowledge in the tourism industry compared to manufacturing due to the intangible nature of tourism products. Also, Chalkiti and Sigala (2008) comment on the challenges involved in observing the internalization phase in their case study about an online tourism forum. Thus, they recommend further studies that include interviews with the participants.

Although the model has been widely used in the tourism literature, it has mainly been tested *within* an organization (e.g. see Martínez-Martínez et al., 2015; Rao et al., 2023). Thus, little is known about knowledge transfer and knowledge creation *between* organizations through collaborative innovation processes in tourism (Raisi et al., 2020), something which is crucial for small and micro tourism firms (Hjalager, 2010; Hoarau & Kline, 2014). Even in other industries, there are very few studies that apply the SECI model in inter-organizational contexts. One exception is the work of Lievre & Tang (2015), who found that the socialization phase was less successful due to cultural differences. However, this study was limited to just two health care organizations with different cultures. Thus, further investigation is needed regarding this matter.

Another context that needs to be considered when using the SECI model is the duration of the knowledge creation processes. Most studies are based on long-term knowledge creation processes. A few examples of studies involving short-term projects include the works of Adenfelt and Lagerström (2006) and Schulze and Hoegl (2006). Adenfelt and Lagerström (2006) highlight the importance of trust building at the beginning of the projects, as the project members are often new to each other. Similarly, Schulze and Hoegl (2006) emphasize the need for informal face-to-face meeting in the socialization phase.

Although there are other knowledge creation models (e.g. see Zollo & Winter, 2002), this study employs the SECI model. Despite the criticisms, the SECI model is the most comprehensive model to take into consideration the interplay between tacit and explicit knowledge in individual, group and organizational levels (Alavi & Leidner, 2001). The model is appropriate for this study as the cases examined involve knowledge transfer among individuals, groups, and organizations.

2.2. Idea generation techniques in tourism innovation labs

Innovation labs have been deployed as a space for collaborative innovation where knowledge is shared and created among different stakeholders (Capdevila, 2017). Activities in the labs usually involve techniques for idea generation, as the generation of ideas is an important part of the innovation process. And in the idea generation process, lab participants normally share their knowledge in groups, which have at least one facilitator or moderator. Thus, the idea generation techniques performed by the facilitators should enable knowledge creation in the innovation labs.

There are numerous studies on idea generation techniques, especially in the field of engineering. However, these studies mostly focus on the effectiveness of one or a few specific techniques (Wang, 2014). Moreover, they emphasize the outcome of the idea generation techniques, rather than the participants' viewpoints (e.g. see Linsey et al., 2011; Petersson, Lundberg, & Rantatalo, 2017). The participants' points of view is important as they are the ones who share and create knowledge in the idea generation process (Wöhler & Reinhardt, 2021).

There are also a few similar studies in the context of tourism innovation labs and workshops. For example, Šker and Floričić (2020) compared the effectiveness of brainstorming versus brainwriting techniques. They found that brainwriting generates more innovative ideas, substantiating the work of Litcanu et al. (2015) in the engineering field. However, brainstorming is needed to refine those ideas into innovative tourism products (Šker & Floričić, 2020). Thus, a combination of both might be the most effective. Another example is the work of Bertella, Lupini, Rossi Romanelli, and Font (2021). They developed and tested a technique that was based on the theory of change, design thinking, and a sustainable business model. Nevertheless, few studies investigate the elements that constitute the idea generation techniques, either in tourism or other fields (Wöhler & Reinhardt, 2021).

This study aims to explore the building blocks or elements of the idea generation techniques in pop-up tourism innovation labs, instead of merely evaluating the effectiveness of specific techniques. Examples of previous studies that explore the basic aspects of idea generation techniques are the works of Smith (1998) and Wöhler and Reinhardt (2021). Smith (1998) identified 50 types of operational "devices" or "active ingredients" from 172 idea generation techniques elaborated in previous literature (for the complete list, see Smith, 1998, pp. 115–118). The active ingredients can take the form of instructions, stimuli, or conditions. Smith (1998) categorized these active ingredients into strategies, tactics, and enablers. Strategies are particular mental activities that are active devices for generating ideas (e.g. group discussions). Tactics are stimulatory devices that support the strategies (e.g. visual displays). Enablers are passive devices fostering conditions that encourage idea generation (e.g. goal setting). Smith (1998) also argues that there is no single best device or technique – the combination of a set of devices may prove most effective in a specific idea generation process.

Likewise, Wöhler and Reinhardt (2021) single out the factors that are helpful for idea generation techniques. These include visualization of ideas, evaluation of ideas, fun, and the number of different ideas induced. However, the participants of the idea generation workshops in the study by Wöhler and Reinhardt (2021) – as well as in most previous studies – were students. Thus, Meinel and Voigt (2017) stress the importance of studies involving participants with different backgrounds, such as professionals. And Brem, Puente-Diaz, and Agogué (2016) suggest the need for cross-disciplinary studies.

To sum up, previous literature on idea generation techniques has mostly focused on the effectiveness and outcomes of one or a few specific idea generation techniques but neglected the elements making up those techniques. Moreover, only a few studies have employed established theories such as the knowledge creation theory. In the tourism field, such studies are even fewer, especially regarding short-term tourism innovation labs.

3. Research design

The purpose of this study is to explore the lived experiences/perspectives of the participants in the labs in order to answer the research question. Thus, the qualitative case study approach is deemed appropriate. Moreover, multiple cases were chosen to better understand the phenomenon (Stake, 1995). The case selection strategy is purposive sampling. Six pop-up innovation labs aiming to promote innovation in tourism – which are still rare in Norway – were selected for this study. Moreover, these labs were still in the idea generation stage of the innovation process.

The participants of the labs were invited by the organizers. Even though the overriding purpose of these labs was to cultivate innovation in tourism, they had different specific purposes and involved different participants. Therefore, the background of the participants varied depending on the particular purposes of the labs. Most importantly, the idea generation technique used in each lab was unique. Moreover, the locations of the labs were different. Thus, each case yielded new and valuable contributions to the study (Tracy, 2010). The six cases are

described in the Cases presentation section.

The data gathering methods include observations and interviews. The observations (participant and non-participant) were carried out by taking sequential notes and photographs during the lab activities. The notes were then transferred to the observation guide, which included descriptive and reflective notes. The observation procedures and guide followed the example from Creswell and Poth (2017). Three researchers, including the author, performed participant observations in Cases 1 and 2. Two researchers, including the author, acted as non-participant observers in Cases 3 and 4. And the author was the sole non-participant observer in Cases 5 and 6.

A total of 28 in-depth, semi-structured, one-on-one interviews were conducted either face to face, via phone, or via Zoom and Teams, depending on the practicality during the Covid-19 restrictions. The average duration of each interview was 60 min. All interviews were recorded and transcribed. The interview guide was developed using questions inspired by previous literature on innovation and idea generation techniques (e.g. Linsey et al., 2011; Wöhler & Reinhardt, 2021). Examples of the interview questions include: 'How did you experience the methods and tools? How different was it when you worked individually versus in a group? Did your ideas change after the group discussions?' Apart from the facilitators, all interviewees were asked similar questions.

However, different additional questions developed inductively after the answers from the interviewees (Guest, Bunce, & Johnson, 2006). Moreover, the follow-up questions varied depending on the idea generation techniques used in the labs. The interviewees were mainly the participants of the labs, as this study emphasizes their perspectives. However, five interviews were conducted with the facilitators or moderators of the labs in order to glean valuable supporting data. Three to six participants with different backgrounds from each case were interviewed to ensure the data provided significant and meaningful claims (Tracy, 2010). The interviewees were anonymized and code names assigned to them. For example, 1A means the informant A of Case 1, 2B is the informant B of Case 2, and so on.

The author analyzed the data using qualitative content analysis. The coding process consisted of two cycles and followed the steps suggested by Erlingsson and Brysiewicz (2017). The first cycle started with reading and re-reading the interview transcripts and observation reports, which were then condensed into smaller meaning units to formulate codes. The codes were then categorized to develop themes. The first cycle followed loosely the themes of the interview guide. The second cycle was matched with the theory of knowledge creation and previous literature on idea generation techniques, following the abductive approach (Easterby-Smith, Jaspersen, Thorpe, & Valizade, 2021; Maanen, Sorensen, & Mitchell, 2007). Data saturation was reached when the author could no longer develop new codes or themes (Fusch & Ness, 2015). Lastly, to ensure validity, the coding of the observation reports and interview transcripts was done separately. The themes were then compared, which led to similar findings (Casey & Murphy, 2009). Validity was established when the findings from both the observations and the interviews revealed the same conclusions (Guion, Diehl, & McDonald, 2011).

4. Cases presentation

This study explored six cases that had some similarities and also differences. Table 1 presents the details of the cases. The main similarity of the cases is that they were all within the same context – experience-based tourism – which specializes in tourism experiences rather than mass tourism (Stamboulis & Skayannis, 2003). Also, the labs had broadly the same ultimate goal – idea generation related to innovative experiences. Cases 1 and 2 focused on meal experiences. Cases 3, 4, and 5 were related to cultural experiences. And Case 6 concerned sustainable tourism experiences. All cases involved participants from different organizations and/or backgrounds. Lastly, the labs were all short-term and physically mobile. Thus, it is appropriate to call them "pop-up

Table 1
Descriptions of the cases.

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
What was the goal?	To stimulate participants' idea generation for developing innovative meal experiences	To stimulate participants' idea generation for developing innovative meal experiences	To generate ideas for improving a tourism guiding app	To generate ideas for improving a tourism guiding app	To generate ideas for designing indigenous/cultural tourism experiences	To engage local residents in deciding for their own sustainable future
Where was it held?	In a hotel	In a hotel	In an office space	On a digital platform (Zoom)	In a hotel	In a hotel
How many participants?	20	18	5	6	37	22
How many participants in a group?	3 to 5	3 to 4	2 to 3	3	6 to 7	4 to 8
Who were the participants?	Mostly chefs; researchers	Mostly staff of hospitality firms; researcher	Staff of cultural tourism sites; researchers	Staff of cultural tourism sites; researchers	Mostly staff of indigenous tourism firms, cultural institutions, and local government; researchers	Local residents
How many facilitators?	3	1	2	2	6	2
Who were the facilitators?	Chefs	Specialized advisor	Owner of the app and a researcher	Owner of the app and a researcher	Local government and cultural institution staff; researchers	Researchers
Who were the organizers?	Tourism network organizations	Tourism network organizations	The app firm and a university	The app firm and a university	Local government, cultural institutions, a university	A destination management organization and a university
How long was the pop-up lab?	8 h	8 h	4 h	4 h	6.5 h	4 h
What materials were used and how?	Slide presentations, cooking demonstrations (show and tell method), discussions, food tasting	Slide presentations, creativity exercises with drawing and music, discussions	An assignment before the lab, slide presentations, IGP method using pens, paper and post-it notes	An assignment before the lab, slide presentations, IGP method, using digital meeting platform (Zoom), and digital collaboration board with digital post-it notes (Miro)	Slide presentations, Gáfestallan method, and 2 rounds of IGP method, using paper and pens.	Slide presentations, Utopia method (Socratic dialogue, open space dialogue, reflexive dialogue), using paper and markers
What were the outcomes?	Idea examples and potential new knowledge for the participants, to share and work with their organizations	Idea examples and potential new knowledge for the participants to share and work with their organizations	Ideas for improving the app	Ideas for improving the app	Ideas for creating indigenous/cultural tourism experiences, including the challenges and opportunities	Concrete project ideas related to sustainable tourism experiences

innovation labs".

Conversely, the main differences include the number of participants, the organizers, the background of the facilitators, the outcomes, and most importantly, the idea generation techniques used. Participants of Cases 1 and 2 were invited by the organizers for the purpose of inspiring them with innovative ideas. Thus, the incentive was to improve the participants' own learning. Moreover, the organizers hired professionals to facilitate the labs. In contrast, Cases 3 and 4 were mainly about gathering ideas for improving a guiding application (app). Aside from an independent researcher from the local university, the organizer and the facilitator was the owner of the app firm, while the participants were its customers. However, even though the outcomes of the labs were beneficial for the app firm, the participants admitted that they had learned something from the labs. Also, the participants were motivated by the networking opportunity. On the other hand, even though Cases 5 and 6 were organized and facilitated by different parties, the purposes were related to improving the local community. Thus, the motivation of the participants was to contribute to their local area.

Despite using different techniques, all cases started with an introduction from the facilitators that included slide presentations. Aside from Case 6, all participants and facilitators made a short self-introduction at the beginning of the labs. Moreover, all techniques included group discussions as the participants were divided into groups.

The first case had no specific name for the technique used. However, one of the participants labeled it a "show and tell" method, as the facilitators showed their practical knowledge while doing the cooking demonstrations. Before the cooking show, the first activity consisted of presentations from the facilitators and group discussions. The facilitators also encouraged discussion among the participants in their own groups and in plenary during the cooking display, so they could share knowledge with each other.

The second case also had no specific name for the technique, which was quite the opposite of that used in Case 1. The technique consisted of creativity exercises after the introductory slide presentation. The exercises included listening to music, tasting a beverage, drawing, and coloring. There were also discussions and group workings.

Similarly, Cases 3 and 4 started with presentations from the facilitators. Next, the technique consisted of individual presentations, and group and plenary discussions, a formulation known as the IGP (Individual, Group, and Plenary) method (Gausdal, 2015). However, Case 4 was held on a digital meeting platform (Zoom) and the participants were different from those of Case 3. There was a small assignment before each lab, in which the facilitators asked the participants to gather user feedback on the guiding app they aimed to further develop. The users of the guiding app were customers or visitors of the participants' organizations.

Case 5 started with short introductions from the facilitators. Afterward, an ice-breaking session (or get-to-know each other session) – known as "Gáfestallan" (Schlecht, 2021) – was conducted by the facilitators in each group before the IGP method. Gáfestallan is based on the indigenous culture and aims to help the participants and facilitator in each group get to know each other on a personal level. Next, the IGP method was conducted over two rounds. The first round of the IGP method aimed to generate ideas for indigenous tourism experiences and the second round was devoted to discussing the challenges and opportunities. In contrast to the other cases that did not have a facilitator for each group, the participants of Case 5 were divided into six groups and each had one facilitator.

Lastly, Case 6 employed the "Utopia method" comprising three phases of dialogues: Socratic dialogue, open space dialogue, and reflexive dialogue (Jakobsen & Storsletten, 2020). The first phase involved the collection of individual ideas, the second phase consisted of group discussion, and the final one included presentations of the groups' ideas in the plenum. The facilitators used the concept of "utopian realism", as the aim of the lab was initially to encourage the local residents to envision the sustainable future of their specific geographical area from

an ecological-economical perspective (Ingebrigtsen & Jakobsen, 2012). However, since the area was a well-known tourism destination, the outcome of the lab turned out to be ideas for sustainable (ecological) tourism experiences. This might be also because the participants were from local tourism firms. Also, in contrast to the other cases, the facilitators were not aware of the background of the participants (e.g., their occupations) even after the lab had wrapped up. The participants were just known as local residents who possibly knew each other and had volunteered to participate.

5. Findings

This section answers the research question: *How do idea generation techniques enable collaborative knowledge creation in pop-up tourism innovation labs?* The findings answer the research question by presenting the elements of idea generation techniques and arranging them into a sequence based on the knowledge creation process model. The elements and sequence were pieced together based on the participants' points of view. Thus, the findings introduce a new model of idea generation technique that has the potential to enable collaborative knowledge creation.

5.1. Elements of idea generation techniques

This sub-section presents the elements of idea generation techniques that promote knowledge sharing among the participants in the pop-up tourism innovation labs. Inspired by Smith's (1998) three categories, these elements are grouped into: activities, tools, and conditions. Table 2 presents the respective elements.

5.1.1. Activities

The following activities stimulated idea generation and knowledge sharing in the labs: informal introduction, individual thinking, dialogues, and physical activities. Almost all interviewees emphasized the importance of an informal introductory or ice-breaking session. They stated that getting to know each other is a crucial prerequisite for building trust and can also be the motivation for sharing knowledge. Especially in Case 5, the Gáfestallan method was well received by the participants. However, they also suggested that the introductory session should be longer, as it takes time to know someone. For example, an informant of Case 5 expressed:

In [our culture] it is exactly like that … we wish to know each other. We want to create a little relationship and so we need time. It's not enough to have one or two hours, we might need to use the whole first session or even the first evening. There, we could have activities to get to know each other and find out who you are, what you do, and where you come from. And then I could wish to talk more about what we can do together. – 5D.

Next, an activity reserved for individual thinking is required by the participants. They also argued that the individual thinking session should come before the group activities. An informant of Case 4 explained the reason:

Table 2
Elements of the idea generation techniques.

Activities	Tools	Conditions
• Informal introduction	• Textual materials	• Clear goals and instructions
• Individual thinking	• Verbal explanations	• Time management
• Dialogues	• Visual materials	• Group size and composition
• Physical activities	• Tangible objects	• Physical space
		• Positive atmosphere
		• Freedom
		• Amusement

I think it works well when you get the time to think on your own first and write it down, especially because I'm a person who talks a lot, so it's very important for other people [to have the same opportunity to talk]. – 4C.

After the individual thinking, the important activities are group dialogues. All informants agreed that dialogue-based group activities are highly beneficial for idea generation, given that each participant has the opportunity to talk. This is because the dialogues enabled knowledge sharing and learning, which is important for idea generation. To illustrate, an informant of Case 4 reflected:

It was a very nice dialogue, very nice group. Especially, I learned a lot from the others. – 4A.

Lastly, participants of Cases 1 and 2 demanded context-related physical activities. As Cases 1 and 2 were related to meal experiences, the participants expected to be involved in the meal preparation. This is also because the participants of Case 1 were mostly chefs. Thus, they were eager to participate in the cooking demonstrations, and one of them stated:

We should be maybe more in the kitchen, where we are all gathered, and all receive tasks…and not just sitting and listening. Because then you become quieter, and not everyone will ask questions. – 1C.

5.1.2. Tools

The tools or stimulatory materials that the participants perceived as helpful for supporting the activities are: textual materials, verbal explanations, visual materials, and tangible objects. In the cases of this study, textual or written materials were presentation slides from the facilitators, written individual ideas on paper or sticky notes, and written collected and/or combined ideas that were presented in the plenary session. These tools were particularly useful as they were straightforward and could easily inspire the participants. For example, a participant in Case 4 pointed out the benefit of writing down their individual ideas:

And also if people write it down, they are kind of forced to have an opinion, have a thought about it. – 4C.

Verbal explanations included in the cases were clarifications from the facilitators and stories based on the experiences of both the facilitators and participants. An example of verbal explanations from the facilitators was the "tell" of the "show and tell" method in the cooking demonstrations (Case 1). While doing the cooking demonstrations, the facilitators also explained what they were doing and why they were doing it. Meanwhile, the participants in Cases 5 and 6 were encouraged to tell stories from their life experiences. How these stories can be useful for idea generation was explained by a participant in Case 5:

It was very informative … because they also told us somehow what they know, what they're thinking, how they're feeling, what they are interested in, so it was very helpful. – 5C.

Next, visual materials used in the cases were images or pictures in the slide presentations, the participants' own drawings, and the cooking demonstrations (in Case 1). However, these materials should be related to the purpose or context of the labs. The author observed that the participants in Case 5 actually built upon the ideas from the images of tourism experiences shown by one of the facilitators. Also, a participant in Case 2 explained how the pictures of innovative meal examples from the facilitator's presentations were beneficial:

He had many interesting examples, in my head it became more an interesting presentation than an interesting lab. – 2D.

Lastly, tangible objects related to the context and goal of the lab were only used in Case 1. For example, while doing the cooking demonstrations, the facilitators handed the cooking ingredients to the participants so they could feel and smell the texture and pass them around.

According to the author's observation, this small act meant a lot for the participants, as it prompted them to ask more questions of the facilitators. By contrast, this was absent in Case 2, even though the purpose of the lab was the same as in Case 1. Thus, one of the informants said:

If there were something we could touch and feel, something we could smell or taste, it could have boosted our creativity. – 2A.

5.1.3. Conditions

The function of the conditions – or passive elements – is to establish an atmosphere that promotes idea generation, instead of directly stimulating new ideas. According to the participants, these conditions are: clear goals and instructions, time management, group size and composition, physical space, positive climate, freedom, and amusement. Each condition might also influence the others.

The first and most important conditions are clear goals and instructions. All informants mentioned that it was crucial for them to get a clear purpose and lucid instructions from the facilitators. An informant in Case 6 explained the purpose and instructions of the lab:

It was loud and clear, they told us what they were going to do or what we were going to do, and how we were going to conduct the lab, and they also gave us some hints of what not to do. For instance, they told us very clearly that you are here representing yourself as a private person, you are not here to address issues of your companies or the opinion of your companies, things like that. They were kind of narrowing our space down to a place where we understood where we were. And that's good. – 6D.

Next, time management is another essential element. This includes the length of the activities and the inclusion of breaks between different activities. The informants commented that they needed enough time to think on their own and time for discussions. In some cases, where the size of the groups was bigger (e.g. 6–8 participants in a group), more time was needed for the discussions. An informant in Case 5 illustrated:

The conversations in the group could have had a few more rules …more structure, because we lost the time aspect in my group … We were supposed to do this in so many minutes, but we went way over time and we didn't do everything we were supposed to. – 5E.

Therefore, the group size and composition is also an important element to consider. The number of participants in one group should be carefully considered so that each participant has an equal amount of time to speak in the group discussions. Also, the group composition influences the idea generation process. Some informants said that they preferred to work with people they had something in common with. Conversely, some informants expressed the need for different points of view in the idea generation process. For example, an informant in Case 1 stated:

I think it's always very interesting when we can combine and meet different kinds [of thoughts] … I mean I'm a chef and you're a scientist, and then we have different angles but suddenly it developed something new … that's also very inspiring and gives me new ideas all the time. – 1B.

The physical space or environment of the lab was also considered an influencing factor. Some informants stated that an interesting physical space or location could be their motivation to participate. Also, some informants commented on how it was more effective for knowledge sharing when they were seated face to face in the room. Most importantly, all informants preferred to be physically present in the labs. This might be due to the fact that some of the labs were conducted during the Covid-19 restrictions. Even though Case 4 – the virtual lab – was considered fruitful by the participants and the facilitators, an informant remarked:

I think you miss something when you don't have face-to-face interaction. – 4C.

Besides physical presence, a positive climate was also demanded by

all informants. The informants explained that all ideas should be appreciated and no one should talk negatively about others' ideas. This also means that domination by one or a few participants should be avoided. To illustrate, an informant in Case 6 expressed:

As a person, if you're asking for my feelings about this, it is important that my word is there, or that my word is being taken seriously … if I feel that my word is just taken away and put into somebody else's box and left and forgotten, I would probably not feel good about it. – 6D.

Also, the participants preferred some freedom, either regarding the direction of the group discussions or the group organization (i.e. who should represent the group). An informant in Case 6 stated:

I like the method because it works from the bottom up perspective, not the common top down perspective … you're not told to do this thing or that thing. – 6C.

Lastly, the participants also expected some kind of amusement in the activities. This could be something fun, surprise, or humor. Some informants expected a more surprising idea generation method or ideas from others. But several informants stated that fun and humor contributed to a positive atmosphere. The author observed that this was especially true for Case 6 and one of the participants described the facilitators:

[The facilitator] had humor, with no judgment, and I thought it was brilliant. And at the end of the day, this one [participant] who was quite headstrong and wanted to oppose everything, he was very happy and very satisfied … I think they did a great job. – 6B.

5.2. The knowledge creation process

While the previous sub-section presented the elements of the idea generation techniques, this sub-section assembles them into an implementable sequence by partially adopting the SECI knowledge creation process model. Fig. 1 summarizes the sequence.

Based on the informants' perspectives, it is essential to have enough time for an informal introduction before the whole process. Therefore, the sequence should start with an informal introduction. An informant in Case 5 stated the reason:

More informal meetings like this – casual – then you can build more trust. – 5C.

After the ice-breaking activity, the facilitators can present the goals and instructions in the preparation phase. Thus, in this stage, the textual and visual materials – together with the verbal explanations – can be delivered by the facilitators in the presentations. Next, the participants can have time for individual thinking and write down their ideas on a piece of paper or sticky (post-it) notes, if possible. Several informants noted the importance of time for individual thinking before other phases. For example, an informant in Case 5 said:

It's good to have time to reflect on your own first, to sit down with your own thoughts, and then share with others. – 5B.

Afterward, they can share their tacit knowledge and make it explicit by doing the individual presentation in the externalization phase – either verbally, textually, or visually (using drawings). Relevant tangible objects can also be used in this phase, as happened in Case 1 and was demanded by the participants in Case 2. Also, relevant physical activities for tacit knowledge sharing, such as cooking together, might also happen in this phase. The individual ideas are then discussed in the groups. In most of the cases, the participants put the sticky notes on a bigger piece of paper, in the middle of the table where the group had their discussions. In Case 4 this was done in the virtual collaboration board (Miro). And in Case 6, the author observed that one of the participants actually made a drawing of the ideas, then shared it and explained it to the group. And regarding the conditions, some participants suggested a change in the physical environment (or the room) in this phase. An informant in Case 3 reasoned:

I do believe it's important to get up and find new surroundings because when you are sitting the whole day, your head starts to shut off. – 3C.

Next, in the combination phase, the collected ideas from the groups can be presented to all participants. This can also be done verbally, virtually or textually. Thus, the explicit knowledge acquired through the group discussions can also be made explicit to the other groups in the plenary session. An informant in Case 1 illustrated:

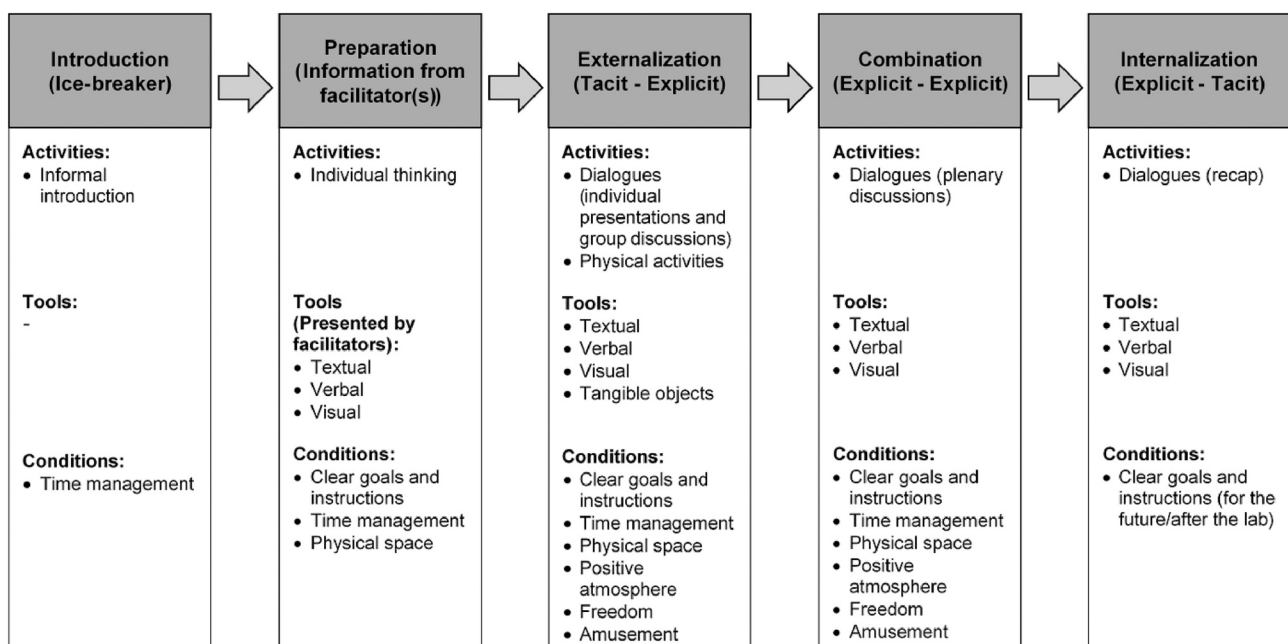*It's a little bit like the big picture, it's making sure that everybody is working for the same goal. – 1A.*

Fig. 1. The sequence of the idea generation techniques.

Lastly, the internalization phase should consist of recapitulation or wrapping up. The informants said that in this phase, they expected to know what would happen next with the collected ideas. Thus, clear goals for the future (after the labs) should be presented by the facilitators, including the instructions of what to do next (e.g. follow up). Moreover, the explicit knowledge created in the labs should be converted into tacit knowledge that can be used by the participants in their own organizations. In Cases 3 and 4, even though the purpose was knowledge creation for the app owner, the participants claimed they actually learned something that could be applied in their own organizations. To illustrate, an informant in Case 4 explained:

> *The app is interesting for itself, of course. But even more interesting is how we think about this themed, arranged, guided tour or tracks inside our exhibitions. – 4B.*

Internalization might happen in the final session of the lab activities (recapitulation) or after the labs, in the participants' own organization. For this reason, some participants actually expressed the need for a follow-up or second round of the lab. Thus, this means the spiral of knowledge creation is getting bigger and the process will be repeated if the second-round lab involves new participants. Fig. 2 illustrates the spiral of the knowledge creation process of the idea generation techniques.

5.3. Findings across cases

There are findings that were emphasized more by the informants in some of the cases, although there are no conflicting findings. First, the importance of physical activities and tangible objects were mostly mentioned by the participants in Cases 1 and 2, who were mostly chefs. Thus, the background of the participants influenced the findings related to the elements of the idea generation techniques.

Secondly, even though the importance of physical presence was mentioned by almost all informants due to the Covid-19 situation, it was especially emphasized in Case 4 (the digital lab). The informants in Case 4 acknowledge that they acquired new knowledge through the digital lab, but they would have preferred to gather it physically.

Thirdly, the informants in Case 5 were most vocal about the importance of the ice-breaking activities to build trust for knowledge sharing. Only Case 5 had the ice-breaking session. And lastly, the informants of Case 6 stressed more the importance of freedom and humor. Similarly, it was also only in Case 6 that the facilitators were mostly absent during the group discussions and used a lot of humor in the plenary discussions.

Fig. 2. The spiral of idea generation techniques.

6. Discussion

This study seeks to contribute to the literature on idea generation techniques and knowledge creation theory in tourism innovation labs. Correspondingly, it shows how idea generation techniques enable collaborative knowledge creation in pop-up tourism labs by employing the aforementioned theory. Thus, the following sub-sections discuss the theoretical and practical implications of the study.

6.1. Theoretical implications

The findings of this study indicate that idea generation techniques that include specific activities, tools, conditions, and partly follow the SECI knowledge creation model, have the potential to enable collaborative knowledge creation in pop-up tourism innovation labs. The SECI model suggested by Nonaka and Takeuchi (1995) is only partly applicable because one of the phases, socialization, did not happen in the cases of this study. As mentioned by previous literature, tacit-to-tacit knowledge transfer (the socialization phase) can only be achieved by doing things or practices together (Hoarau & Kline, 2014). And none of the cases in this study involved learning by doing, even though participants in Cases 1 and 2 actually demanded this (i.e. doing the cooking demonstrations together with the facilitators). This might be due to the short-term nature of the pop-up innovation labs, as there was not enough time for learning by doing. Also, it is more difficult to codify tacit knowledge in tourism (Rao et al., 2023). And in an inter-organizational context, the socialization phase is rather challenging due to possible cultural differences (Lievre & Tang, 2015). Thus, in this study, the preparation phase replaces the socialization phase in the knowledge creation process.

Moreover, the findings also show that apart from the existing phases in the SECI model, an additional phase – the informal introduction – is crucial at the beginning of the knowledge creation process. This first step is needed to build trust, which is important for knowledge sharing, a conclusion made by previous studies as well (McTiernan et al., 2021; Riege, 2005). This is also necessary because the labs were short-term and the participants did not know each other at the beginning of the process, reasoning which aligns with the works of Schulze and Hoegl (2006) and Adenfelt and Lagerström (2006). However, the importance of an informal introduction phase (or getting to know each other) has not been in the focus of previous literature on knowledge creation process and idea generation techniques.

While the sequence of the knowledge creation process partly concurs with Nonaka and Takeuchi (1995), the perceived spiral shape of the process in this study aligns with the suggestion of Nonaka and Toyama (2003). Also, the findings imply that the spiral becomes bigger if the labs have a second round, something which was desired by some of the informants.

Regarding the critiques of the SECI model, the findings partly agree with Li and Gao (2003) on the applicability of the model. This study shows that the SECI model potentially fits with the tourism context, and not solely with manufacturing companies, albeit with some adjustments. Also, this study substantiates, but only partly, Gourlay (2006) critiques of the model. While Gourlay (2006) argued that the model is flawed and not supported by empirical evidence, this study implies that only the internalization phase is rather challenging to verify with observations. Even though the informants claimed that they internalized the knowledge created from the labs, this is not observable, because the informants were from different organizations. Moreover, the internalization phase might happen after and outside of the labs. Thus, although this study has attempted to fill the gap in the work of Chalkiti and Sigala (2008) by using interviews to investigate the internalization phase, its nature is still elusive.

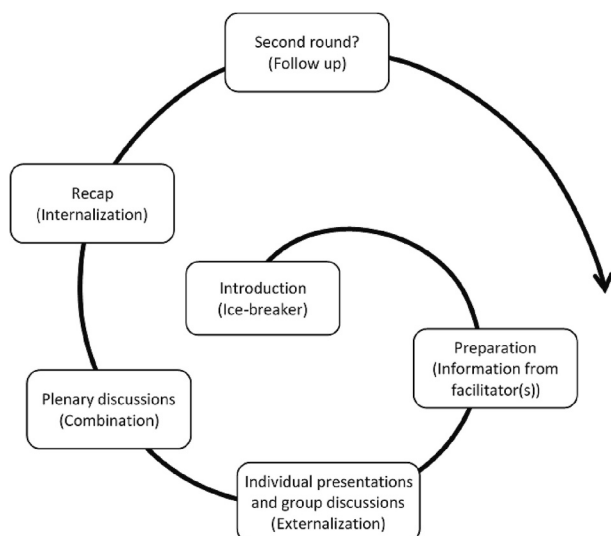Next, regarding the elements of idea generation techniques, the

findings align with the three categories inspired by Smith (1998). However, only some of the elements in this study are similar to Smith's (1998) "active ingredients", such as dialogues, visual tools, and tangible objects (see Smith, 1998, pp. 115–118). Moreover, some elements are exclusive to specific cases. For example, physical activities and tangible objects are exclusive to Cases 1 and 2. Thus, in line with Smith's (1998) work, this study indicates that the elements of idea generation techniques are context dependent.

The findings also endorse previous literature regarding the combination of the elements. This study shows the importance of combining visuals and dialogues (Šker & Floričić, 2020). Moreover, in line with the suggestions of Wöhler and Reinhardt (2021), the findings imply that an element of amusement or humor is also important to maintain a positive climate during the idea generation process. Therefore, facilitators with leadership styles that can maintain a positive ambience have more potential to enable knowledge creation in the idea generation process (Riege, 2005).

Lastly, this study supports previous studies that sharing tacit knowledge is indispensable for collaborative idea generation in tourism (Hoarau & Kline, 2014; Marasco et al., 2018; Weidenfeld et al., 2010). Thus, an idea generation process that includes individual tacit knowledge sharing might have more potential for knowledge creation in pop-up tourism innovation labs.

To sum up, besides partly or fully agreeing with previous studies, the findings have presented the previously neglected elements of idea generation techniques that enable knowledge creation in pop-up tourism labs. The novelty of the study lies in its effort to propose a framework for idea generation techniques in short-term innovation labs by altering the SECI knowledge creation model to generate the sequence. As a result, this study suggests a new model of idea generation technique that adds an additional phase (the introduction phase) to the existing knowledge creation model and modifies another phase (the preparation phase). This has never been attempted before in tourism studies or other fields, at least to the author's knowledge. Therefore, the study also extends the generalizability of the model beyond the manufacturing sector.

6.2. Practical implications

The suggested new model can be used by tourism practitioners, destination management organizations, and governments to design idea generation techniques for the purpose of promoting systematic, knowledge-based, and collaborative innovation in tourism. The model can be applied to short-term/pop-up innovation labs, which are suitable for the tourism sector as they require fewer resources than permanent innovation labs. It has the potential to enable collaborative knowledge creation in tourism labs that involve participants with different backgrounds.

The idea generation techniques employed in the labs should involve specific elements (activities, tools, and conditions). The elements can be arranged into a sequence that starts with an introduction session, followed by a preparation phase where the participants get the time to think individually. Next, the participants can share their ideas through individual presentations in the externalization phase. Then, the shared ideas are discussed in the combination phase. Finally, the discussed ideas are compiled and shared with all participants in the internalization phase.

Due to the short-term nature of the labs, an informal introduction of the participants should be emphasized at the beginning of the idea generation process, in order to build trust. Moreover, the findings of this study imply that the activities should be adapted to the backgrounds of the participants (e.g. cooking sessions for chefs). It is also crucial to combine visual tools with dialogue. Additionally, tacit knowledge sharing should be prioritized during the idea generation process. Finally, a series of short-term labs (multiple rounds of labs) might be beneficial for further developing the ideas generated in the initial lab.

7. Limitations and future research suggestions

This study has potential limitations that highlight future research avenues. First, the context is limited to short-term tourism innovation labs in Norway. Therefore, future research in long-term tourism innovation labs or other tourism context might be interesting. Secondly, the study is a qualitative multi-case design. Thus, there is always a risk of misinterpreting the interviews. However, to ensure validity, the author compared the data from the interview transcripts with the observation reports.

Thirdly, all cases in this study included group discussions in the idea generation process. Thus, cases with other techniques – such as brainwriting – might yield different findings. Fourthly, as none of the labs involved learning by doing activities, there was no socialization phase or tacit-to-tacit knowledge transfer. Therefore, future studies on idea generation techniques that include learning by doing are strongly encouraged. In addition, studies on the idea generation techniques that focus on ice-breaking activities might be interesting.

Next, the internalization phase of the SECI model needs further investigation. The data of this study is limited to the activities during the labs, as the researchers could not observe the internalization phase in the participants' organizations. Therefore, future research that includes the knowledge internalization in the participants' organizations after the labs might be of interest. Lastly, future studies that explore innovation processes that involve multiple rounds of pop-up tourism labs might be beneficial.

8. Conclusion

This study has shown that, in short-term tourism innovation labs, collaborative knowledge creation can potentially be enabled by using idea generation techniques that start with an informal introduction, are followed by individual thinking and presentations, and then group and plenary discussions, and end with a recapitulation. Moreover, the idea generation techniques should include context-specific activities, tools, and conditions.

This study also demonstrates that the SECI model is partly applicable in the context of short-term tourism innovation labs. Thus, it contributes to knowledge creation theory by extending the generalizability of the model with some modifications. Most importantly, this study is the first of its kind – at least to the author's knowledge – that employs knowledge creation theory to propose a new model of idea generation technique in short-term tourism innovation labs. Therefore, it also contributes to the literature on idea generation techniques in tourism and in general. Finally, the suggested new model can be used as a practical guide in the design of idea generation techniques that enhance systematic and knowledge-based innovation in tourism.

Author note

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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