

**REGULAR ARTICLE**

WILEY

# Tracking hidden innovations in tourism

Anne Jørgensen Nordli  | Martin Rønningen

Department of Business, Economics and Marketing, Inland Norway University of Applied Sciences—Lillehammer Campus, Lillehammer, Norway

**Correspondence**

Anne Jørgensen Nordli, Department of Business, Economics and Marketing, Inland Norway University of Applied Sciences—Lillehammer Campus, Lillehammer, Oppland, Norway.  
Email: anne.nordli@inn.no

**Funding information**

Sparebankstiftelsen Hedmark Foundation

Hidden innovations are innovations that have been overlooked, forgotten or ignored. In this context, this study explores hidden innovations in tourism—innovations not captured by frequently used quantitative instruments such as the Eurostat's community innovation survey (CIS). The study also explains why several innovations have remained hidden in the tourism industry. It identifies and analyses processes producing hidden innovations and determines the characteristics and types of these innovations. The study analyses 13 interviews in four tourism businesses—one Alpine centre and three hotels. Empirical testing indicates the inadequacy of CIS measurement in capturing these innovations. The findings reveal several hidden innovations. In the tourism context, we find two types of hidden innovations—hidden stage-wise and stage-merged innovations. These hidden innovations have two triggers. The first trigger refers to the evaluation of work processes carried out at the decentralized levels of companies. The second trigger is the work climate combining staff willingness (W) and opportunities (O) (WO-oriented work climate)—where the employees are willing to engage with innovation and are provided with an innovation opportunity. This study has important implications for extending the understanding of hidden innovations, especially in tourism, and guiding managers to facilitate, motivate and support work environments that allow employees' freedom and help them take responsibility to generate ideas and innovations.

**KEYWORDS**

community innovation survey, hidden innovation, innovation triggers and drivers, tourism, WO-oriented work climate, work processes

## 1 | INTRODUCTION

Hidden innovation refers to innovation that is overlooked or not reported in official research and development (R&D) and innovation statistics such as the community innovation survey (CIS). Since 1992, the Eurostat has been using the CIS instrument to conduct biennial innovation surveys in all European countries and some other countries. The phenomenon of 'hidden innovation' has been unveiled in the tourism industry (Camisón & Monfort-Mir, 2012; Nordli, 2016; Rønningen & Nordli, 2016) as well as in other fields (Barrett et al., 2007; Green et al., 2007; Hansen & Serin, 1997; Trigo, 2013). In

this context, it must be noted that statistical reports based on the CIS result from the Norwegian tourism industry's claim that the industry has very low innovation rates (Wilhelmsen & Foyn, 2012); the same conclusion is drawn in CIS studies investigating the effects of innovation on growth in tourism (Martin-Rios & Ciobanu, 2019). The low innovation rates may be attributed to hidden innovations. However, Hjalager (2010) argues that the tourism industry should be represented in survey programmes, such as the CIS. The literature also agrees that there is limited research-based knowledge of innovation in tourism services, and hence, there is a need for furthering empirical research and theoretical elaboration (Camisón & Monfort-Mir, 2012;

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

© 2021 The Authors. *Creativity and Innovation Management* published by John Wiley & Sons Ltd.

Hall & Williams, 2008; Hjalager, 2010). There is a need to provide a comprehensive overview of the innovation activities in the tourism industry and compare the tourism industry with the other industries. This approach can be problematic if the measurement is biased and leads to hidden innovations. In order to understand and interpret survey findings, it would be crucial to gain a better understanding of the elements that are and are not measured. In this context, the CIS is rooted in manufacturing and referred to as an assimilation approach considering services. Given that services innovation is fundamentally similar to manufacturing innovation, the former can be measured according to the measures developed for the latter. Hence, CIS can be used to measure services innovation (Coombs & Miles, 2000). However, service researchers argue that services innovation and their output are intrinsically characterized as immaterial, interactive and co-productive, which make it challenging to adopt the traditional categories of innovation and measurement (Coombs & Miles, 2000; Tether, 2005). Camisón and Monfort-Mir (2012), Nordli (2016) and Rønningen and Nordli (2016) agree that innovation in tourism can be biased by measurement based on scoreboards initially developed for manufacturing and later adapted to measure services innovation. These studies note that the unmeasured service characteristics lead to several hidden innovations that contribute to low innovation. However, these hidden innovations were never investigated in detail.

A limited number of studies have discussed hidden innovations in tourism, and this study is a starting point of the research on hidden innovations. This study reveals several examples of hidden innovation, by exploring how the CIS instrument works in the sampled companies. One example of hidden innovation is the comprehensive reorganization of a bike park's procedures for welcoming customers and providing experiences until the afternoon. This is a type of innovation that meets the CIS' definition of innovation. Another hidden innovation found in the study is the implementation of new internal education programmes for employees—an organizational innovation that also innovates the service delivery process. Both the innovations were overlooked in the CIS measurement, though these innovations were described by respondents as significant to the overall guest experience.

In the tourism context, it is crucial to address the validity of using CIS instruments while gaining an understanding of innovations that are overlooked, forgotten or ignored. This study undertakes a qualitative exploration of hidden innovations in four tourism businesses: an Alpine centre and three hotels. Until now, few studies have explored or identified the different types of hidden innovations and examined processes producing these innovations. This study aims to uncover hidden innovations in these enterprises, revealing their characteristics and types and identifying and analysing processes that bring them about. It also investigates why innovations are hidden and considers how they can be captured by improving innovation surveys such as the CIS.

The study contributes to the literature on hidden innovation in services and tourism. It enhances the understanding of hidden innovation by implying processes, types and drivers to hidden innovation, all

summarized in a final framework. It is necessary to gain a better understanding of hidden innovations and how innovations can be captured in surveys to meet the call for valid quantitative analyses of the tourism industry (Hjalager, 2010). For practitioners, the study's findings demonstrate how business managers at different levels can facilitate and motivate innovation efforts among staff members.

## 2 | LITERATURE REVIEW

Studies that include the term 'hidden innovation' present an assorted understanding of the term, and perspectives and research questions around the term vary substantially. For example, studies have focused on low- and high-technology products and indicated that low-technology products are partly hidden from political attention in policies. Other studies have focused on outsourced innovation activities, referring to them as hidden innovations, or on policies for enhancing hidden innovations (Abreu et al., 2010; Hansen & Serin, 1997; O'Brien, 2016). This study considers hidden innovation in line with Camisón and Monfort-Mir (2012), who define it as innovations not captured by measurement used in innovation surveys like CIS. Our aim is not to offer a comprehensive review of a heterogeneous research using the term 'hidden innovation'. Instead, we discuss the typical features and different types and processes of hidden innovations in the tourism context.

A Nesta report from 2007 used the same understanding and claimed that hidden innovations often represent substantial innovations that directly contribute to successful work and performance in a sector (Nesta, 2007). While Nesta identifies different types of hidden innovations, the empirics are from industries completely different from tourism—construction and banking. Djellal and Gallouj (2010) use the term 'invisible innovations' as a synonym for hidden innovations. They define invisible innovations as the innovation gap representing the difference between the real number of innovations and the number of innovations measured by the traditional indicators, such as R&D or patents, or by the measurement used by CIS, for example. The innovation gap is particularly observed in the service sector (Abreu et al., 2010; Djellal & Gallouj, 2010), given that the conventional measurement of innovation remains better adapted to technological products and process innovations than to services. Djellal and Gallouj (2015) state that many innovations in services are like the major part of an iceberg under water; they are hardly visible, but they are real. Abreu et al. (2010) found 'hidden parts' of innovations in services in their empirical study using CIS 4 and case study. They identified hidden parts using a broader set of indicators than the traditional indicators focusing on R&D expenditures and patent numbers.

Overall, the literature suggests that several innovations, especially in the service sector, are hidden and considers them as phenomena in tourism (Camisón & Monfort-Mir, 2012; Nordli, 2016; Rønningen & Nordli, 2016). However, it is not clearly addressed why some innovations become hidden—why respondents in surveys like CIS do not report them.

## 2.1 | Service innovation processes and hidden innovations

Service innovation is often described as incremental, characterized by small changes, not technology driven and not creating industry-wide stir (Djellal & Gallouj, 2010; Sundbo & Gallouj, 2000; Tether, 2005). Similarly, in the tourism industry, service innovations have been characterized as more incremental, stepwise (Nordli, 2018a), bundled and intertwined (Eide & Mossberg, 2013). Incremental steps may amount to significant changes over time in services (Bloch, 2007; Tether, 2005), and measurement based on the Oslo Manual, like CIS, may be expected to capture such innovations (Bloch, 2007). Continuous improvements may also enhance innovation and competitiveness (Bessant, 1992). By combining these characteristics with the reality of hidden innovations, it is reasonable to conclude that hidden innovations are not likely to be radical innovations. Radical innovations are commercialization of breakthrough ideas (Hopp et al., 2018); they cannot be ignored by the top management or overlooked in a survey. While hidden innovations are incremental, they can still be a key to companies' performance and competitiveness, given that bundled changes may represent substantial improvements, as per Bloch (2007).

While it is reasonable to expect hidden innovations to be incremental, additional characteristics are unknown. While radical innovations may be driven by technology (Verganti, 2011), the factors or triggers driving hidden innovations in tourism are yet to be determined. Specifically, the triggers or drivers may include the following questions: Where does the idea to the hidden innovations originate from? Which actors, situations, conditions or happenings start and push the innovation process? The literature has identified several drivers and triggers to tourism innovation, such as cross-functional work teams, the use of external information, collaboration and innovation systems (Nordli, 2018b; Rønningen & Lien, 2014). New literature also shows how entrepreneurs or employees with entrepreneurial qualities can start and drive innovation processes (Presenza et al., 2019; Presenza & Petruzzelli, 2019). The service innovation literature also stresses employees' ability, willingness and opportunity to be drivers in the innovation processes (Engen, 2016). The latter study does focus not only on the individuals but also on the importance of the work climate. Despite the focus, the literature has not addressed triggers to hidden innovations.

Knowledge about hidden innovation is also a condition for obtaining comprehensive and valid empirical data for future innovation research.

An understanding of innovation processes is also essential for studying services innovation and tourism (Alam & Perry, 2002; Alsos et al., 2014; Fuglsang, 2008; Hall & Williams, 2008; Hjalager, 2010; Nordli, 2016; Toivonen, 2010; Toivonen & Tuominen, 2009). One process perspective considers innovation to be a linear process (Cooper, 1990). Linear process models focus on strategy, planning and sequential development including several distinct successive stages anchored in the senior management. Although this perspective is not common in services (Sundbo & Gallouj, 2000), the stage-wise thinking

of the linear model has been adopted in service innovation. Referred to as the new service development (NSD), it has become an independent process perspective for service innovation (Alam & Perry, 2002). Linear processes have distinct stages, such as idea generation/screening, strategic planning, business analysis, and development and implementation. R&D models are stage-gate models; NSD processes are linear stage-wise process models (Alam & Perry, 2002; Cooper et al., 2002; Cowell, 1988). In these realms, innovations are comprehensive and require high investment. These innovations are also backed by the decision making of the senior management, given that the innovation processes entail considerable resources and support, and hence, a considerable economic risk. Despite the risk of setbacks, businesses that follow linear, stage-wise processes may be confronted with the need to adjust the processes. It is reasonable to assume that innovations, registered by the CIS, are the result of such stage-wise innovation processes. In this study, these are referred to as stage-wise innovations.

Another process perspective is accelerated innovation, where planning and execution are rarely separate stages (Eisenhardt & Tabrizi, 1995; Moorman & Miner, 1998). As per Toivonen (2010), planning and implementation are merged in certain service processes. She calls these processes 'innovations' following the model of rapid application and asserts that they are deliberate strategies. Unlike stage-wise processes, rapid applications or accelerated innovation processes occur locally, for example, at the departmental or sectional level, and are carried out rapidly from ideation to implementation. Given this, it is reasonable to address questions about senior management's awareness of innovations evolving from accelerated innovation processes and the consequent entry of these innovations in surveys. Because these innovations result from merging the stages referred to in the stage-wise model, we refer to such accelerated processes and rapid applications as 'stage-merged innovations'.

The third perspective of practice-driven innovation provides solutions to emergent problems based on spontaneous actions developed through the application of a certain practice. These innovations are recognized as a posteriori (Toivonen, 2010) or *bricolage* innovations (Fuglsang, 2010). They are usually developed by an individual and are not necessarily considered innovations by their innovators. Hence, we do not expect practice-driven innovations to be detected by the CIS or CIS-like measurements. Because these innovations may fall outside the scope of the CIS definition of innovation in terms of substance and significance, they are not captured through the CIS instrument. Therefore, only the first two processes pertain to this study on hidden innovations, though we acknowledge hidden innovations with other forms or variants.

## 2.2 | Community innovation survey

The CIS is a biennial innovation survey conducted by the Eurostat in most European countries. It has been criticized for not capturing hidden innovation (Djellal & Gallouj, 2000, 2015; Djellal & Gallouj, 2010; Gadrey & Gallouj, 1998; Gallouj & Weinstein, 1997; Tether, 2005).

This study takes CIS as a central measurement. Based on the guidelines for innovation surveys published in the Oslo Manual (OECD/Eurostat, 2005), the definition and operationalization of innovation in CIS focus on measuring four types of innovation—product, process, market and organizational innovations. The CIS questionnaire briefly introduces the four types, and each innovation is measured using two to four items (see <https://ec.europa.eu/eurostat/web/microdata/community-innovation-survey>). This study uses the CIS questionnaire to investigate research questions on hidden innovations and thus uses the same definition as that in the CIS.

The CIS may have errors as a result of its choice of respondents at an enterprise (Nordli, 2016). The CIS is sent to a firm's headquarters, which selects a respondent, for example, from the R&D department. In the tourism industry, as in many other service industries, businesses seldom have an R&D department. Given this, as confirmed by our sampled firms, we assume that the senior managers or deputies complete the CIS. Thus, our respondent sample includes a group of senior managers. Because we consider hidden innovations at the decentralized levels, our respondent sample also includes department managers.

### 2.3 | Research questions

The literature review provides three research questions. First, the literature suggests that the tourism enterprises do not report several innovations, and hence, they are characterized as hidden innovation (Camisón & Monfort-Mir, 2012; Nordli, 2016; Rønningen & Nordli, 2016). However, the studies have failed to address why these enterprises do not report all the innovations in CIS-like—a fact that reveals a knowledge gap. Because the literature has not provided comprehensive explanations, we have listed some factors that may shed light on the hidden character. First, the hidden character may be attributed to the many incremental, low-technology or immaterial innovations in the tourism industry (Nordli, 2018a), which can be overlooked by external actors and the senior management of the tourism enterprises while reporting innovations (Djellal & Gallouj, 2015; Nordli, 2016; Rønningen & Nordli, 2016). Second, it is easy to overlook the innovation activities carried out by sections, groups, or individuals at a decentralized level (Engen, 2016) if the top management has not been explicitly involved in the processes. Both the aforementioned assumptions can be linked to how tourism enterprises are organized. Precisely, these enterprises do not have R&D departments that would have mapped information on innovation activities of different scales, at both the centralized and decentralized levels.

Based on the given context, the *first research question* (RQ 1) is why are some tourism innovations hidden—why are some innovations not reported by enterprises in CIS-like surveys? The second part of the question describes the introductory paragraph in Section 1 (cf. the definition of hidden innovation in Camisón & Monfort-Mir, 2012). This question also investigates whether enterprises do not report innovations because of their incremental characteristics, their

occurrence at decentralized levels and/or the absence of departments that can map such innovations.

Several researchers have asserted that the understanding of innovation processes is essential for studying services innovation and tourism (Alam & Perry, 2002; Alsos et al., 2014; Fuglsang, 2008; Hall & Williams, 2008; Hjalager, 2010; Nordli, 2016; Toivonen, 2010; Toivonen & Tuominen, 2009). However, no study has analysed the processes producing hidden innovation, which indicates a knowledge gap. We examine the process perspectives on innovation to find possible answers. Given this context, the *second research question* (RQ 2) asks whether hidden innovations in tourism unfold as accelerated stage-merged processes, stage-wise processes or other processes and whether the processual characteristics of hidden innovations allow a categorization of hidden innovation.

As Section 2.1 shows, little is known about which actors, situations, conditions or events start and push hidden innovation processes. In Section 2.1, we present the possible drivers and triggers of hidden innovations; however, more research is needed to obtain more knowledge about triggers. Hence, *Research Question 3* (RQ 3) explores the triggers of hidden innovations in tourism.

By answering the three research questions, we seek to provide an understanding of and insights on hidden innovations in tourism. Finally, we propose a framework that illustrates how hidden innovations in tourism are triggered and unfold.

## 3 | METHODOLOGY

The study uses the qualitative content analysis (QCA). Although the QCA has its starting point in the methodological basis of the quantitative content analysis (Philipp Mayring, 2014, chapter 3.1), it conceptualizes the process of assigning categories to text passages (in this study, transcribed interviews) as a qualitative interpretive act, following the content analytical rules. The QCA has become a widely accepted and popular method across the field of social sciences. Mayring's work (Philipp Mayring, 2015) has been a landmark in the methodological literature, from its first edition in 1983 through its 12th edition in 2015 (Schreier et al., 2019). Although the QCA can be a hybrid of quantitative and qualitative methods (mixed methods) or a genuinely qualitative method (Schreier et al., 2019), this study opts for the latter method. There are two compelling arguments for adopting the QCA approach in this study. First, the QCA requires specific research questions, expressed as real questions like our three research questions, as opposed to only a topic, as in some qualitative studies (Philipp Mayring, 2014). Second, Mayring considers QCA a category-driven qualitative analysis (Schreier et al., 2019). Given that this study tracks hidden innovations and investigate its processes and triggers in order to categorize different types of hidden innovations, an analysis that assigns categories is a good fit for the study.

Philipp Mayring (2014) suggests a detailed seven-step procedure for conducting the QCA; these steps are applied to this study. Sections 1 and 2 of this manuscript represent Steps 1 and 2. Step 1 presents the specification of the research questions and their

relevance to practice; Step 2 links research questions to theory. Section 3 focuses on Steps 3, 4, 5 and 7. Section 4 represents Mayring's Step 6—presentation of the results.

The study's design (Step 3) combines the explorative and descriptive research designs (Philipp Mayring, 2014, p. 12). The explorative design formulates new categories (inductive category development), and the descriptive design works with interview transcriptions to derive deductive categories. The categories of triggers result from an inductive analytical process, whereas the categories (types) of hidden innovations stem from a theoretical knowledge on the service innovation processes—a deductive analytical approach. The category development is also addressed in Section 3.4.

The study uses qualitative interviewing to examine the experiences of employees and managers at different levels of the tourism businesses, which suggested as an appropriate method by Weiss (1995). The exploratory qualitative data of our study can contribute towards the development of appropriate quantitative instruments (Miles & Huberman, 1994). Our study may also improve the ability of the CIS to capture currently hidden innovations.

### 3.1 | Sampling, businesses and respondents

Following Step 4 of Philipp Mayring (2014), we used a purposeful sampling strategy to select the tourism businesses (Marshall, 1996; Silverman, 2005). Purposeful sampling allowed us to choose from the relevant features or processes (Silverman, 2005). We selected the four different-sized (measured by employee size) companies (Table 1) to reflect the variation in size. We wanted our sample to include firms that had introduced innovations or worked with innovations. As previous studies have shown experience businesses to be the most innovative (Fuglsang et al., 2008), we chose firms that emphasize experiences as a core element of their services. The four business are presented in Table 1 as Company A, Company B, Company C and Company D. Company A manages two large Alpine centres (among

the largest in Norway); Company B is a small family-run hotel; Company C is a small mountain hotel; and Company D is an enterprise in a small group of companies. The companies are described more broadly in Section 4. The study included interviews with senior and department managers from these companies (Table 1). The senior or top-level staff were interviewed because they respond to the CIS at the behest of Statistics Norway (responsible for the CIS in Norway). We also sought responses from the lower levels of the organizations, such as the department managers and employees, as they have a better knowledge of the local processes.

To address hidden innovation, we conducted at least two interviews in each company—one with a senior manager and another with a department manager. Interviews with senior and department staff enabled comparison of innovations reported at both levels and provided an opportunity to identify hidden innovation—innovations not reported by senior managers. In Company A, the largest company with two Alpine centres, we conducted six interviews—five in the larger Alpine centre and one in the smaller centre. Because the other three businesses have fewer employees, we interviewed only the manager and one department manager in each of the businesses.

We conducted 13 interviews and numbered and labelled the respondents from A to D (representing the four businesses). Table 1 provides all the details on the levels and information coding, for respondents in each company.

### 3.2 | Data collection and interviews

Prior to the interviews, respondents were told that the interview focused on the innovations in their businesses and on testing an innovation questionnaire. All the respondents were asked to complete the Norwegian version of the 2010 CIS questionnaire (questions measuring product, process, organization and marketing innovations, respectively). We used the answers to identify the items measured by the CIS measures and to lay the foundation for follow-up interviews about the firms' innovation activities. We asked the senior and department managers to answer the CIS. After the completion of the questionnaire, the interviewees were asked to describe the innovations they had reported in the CIS questionnaire. For more details on the questions asked, see Appendix A. To identify the processes behind the innovations, we asked the respondents to describe the processes from the ideation to implementation.

### 3.3 | Identification of hidden innovation and analysis

We adopted two approaches to identify hidden innovations. First, we compared the innovations found at decentralized levels with those reported by the senior managers, in order to determine if the former innovations were hidden innovations. To deepen the understanding of why innovations are hidden, we asked the department managers

**TABLE 1** Sample companies and respondents

Company	Department level	Top level
Company A Alpine Centre 1	Interviews with five department managers (A1–A5)	Interview with the senior manager (Atop)
Company A Alpine Centre 2	Interview with one department manager (A6)	
Company B small hotel	Interview with the food and art manager (B1)	Interview with the senior manager (Btop)
Company C small hotel	Interview with the kitchen manager (chef) (C1)	Interview with the senior manager (Ctop)
Company D hotel (one in a group)	Interview with the hotel manager (D1)	Interview with the group manager (Dtop)

TABLE 2 Hidden innovations in sample businesses

Hidden innovations found among department managers	Description of hidden innovations (innovations identified in interviews but not reported by senior management in the CIS)	Stage-merged process	Stage-wise process	Formal evaluation	Informal evaluation	WO-oriented work climate
A1 Ski school	A product concept is changed without changing the name (treasure hunting). The change implies a new product/service.	X		X		X
	The snake: a new technique used to teach ski to children. This was a new element added to an existing service, which led to an innovation of the service process.		X		X	X
A2 Information and ticket sales	Small process innovations based on employees' experiences (2–3 people discussing the possibility or advantage of improvements regarding managing guests in the booking system).	X			X	X
A3 HR and finance	Changes in responsibilities and reorganization at the department level, with significantly increased satisfaction among employees (an organizational innovation).	X		X		X
A4 Cycling (summer)	Change of work processes in a bicycle shop in order to handle guests in the bicycle rental system—mainly a process innovation but partly a product innovation.	X			X	X
A5 Outside operations	Development of several kinds of aids for the internal maintenance of lift systems. A combination of incremental product innovation (new aids or outfits for maintenance) and process innovation (maintenance of lift systems).		X	X		X
A6 Ski school, rentals and shop	Improved services related to rental boot adjustments by training/education of employees. This improvement constitutes an organizational innovation that innovates the service process and significantly affects customer satisfaction.		X	X		X
	A process innovation to update the rental booking system.		X	X		X
	Introduction of new routines regarding how service operators should advise customers while selling boots, gloves and ski glasses/lenses. These changes involve steps of incremental improvements that constitute a services and process innovation.	X		X		X
	New employee recruitment processes involving an organizational innovation.		X	X		X



TABLE 2 (Continued)

Hidden innovations found among department managers	Description of hidden innovations (innovations identified in interviews but not reported by senior management in the CIS)	Stage-merged process	Stage-wise process	Formal evaluation	Informal evaluation	WO-oriented work climate
B1 The kitchen	An exclusive wine-tasting concept related to a special menu that represents a product/service innovation.		X			X
C1 Food and art	Introduction of a new local food concept (product/service innovation).		X			X
	Arts integrated into hotel decoration and new art exhibitions—product/service innovations.		X			X
D1 Hotel in a small company group	A new takeaway concept: a product/service innovation implemented by a local stage-wise process triggered by formal evaluation.  Note: This small company group consists of four enterprises run individually by separate managers, despite all being subordinate to the senior management of the group of companies. The CIS questionnaire is sent to the senior managers of the group company. Accordingly, this respondent is categorized as a department manager.		X	X		X
	Establishment of a management group (across departments) and a strategy group that represents an organizational innovation.		X			X
Hidden innovations found among senior managers	Hidden innovations revealed via post-CIS interviews (forgotten innovations or efforts misinterpreted as not being innovations)	Stage-merged process	Stage-wise process	Formal evaluation	Informal evaluation	WO-oriented work climate
Atop Senior manager Alpine centre	Atop stated that he is aware of employees' efforts to implement many adjustments and improvements, which over time add up to innovations exerting a significant total effect (e.g., higher service quality level or faster responses to customers' claims). He learns about these efforts and innovations subsequent to their implementation and often by accident. Senior management encourages employees to be innovation oriented; he is certain of the innovative behaviour of employees, but cannot enumerate or specify every small-scale innovation, as they have not been recorded.					X
Btop Senior manager Hotel 1	A new dining concept (a new service) is implemented based on guests' demands. This is a hidden innovation because the manager did not interpret the new concept as an innovation according to CIS instructions. Later, when asked to reflect on the efforts of the company, he realized that their new dining concept should have been reported. This example is a hidden innovation owing to Btop's misinterpretation of CIS definitions and instructions.		X	X		X
			X	X		X

(Continues)

(A1–A6, B1, C1 and D1) whether the senior management was involved in the innovation process, whether they had reported the innovations to senior managers and whether they believed that senior managers were familiar with the innovations (see Appendix A).

Second, we conducted interviews with senior managers. After the senior managers had answered the questionnaire, we noted the innovations unreported by senior managers. They had either forgotten to report them or failed to interpret them correctly as innovations, owing to misinterpretation of the CIS. These innovations were also categorized as hidden innovations. We also asked the four senior managers (A<sub>top</sub>, B<sub>top</sub>, C<sub>top</sub> and D<sub>top</sub>) if they believed that innovations had occurred without their involvement or knowledge. This question was posed to understand about their awareness of hidden innovations. These managers were also asked if their companies had protocols for registering innovations or innovation processes, such as methods for reporting innovations to upper management or routine requests by senior managers about innovations.

Interviews were designed to facilitate open conversations; in other words, we ensured that the interviewees were at ease with the questions and spoke freely (Seidman, 2013). We used a semistructured interview guide based on the research questions as a checklist to ensure that the conversations covered all the relevant areas of the research (see Appendix A). Interviews lasted about 1 h and were audio recorded and transcribed.

### 3.4 | Systematizing and analysing data

The analysis integrated inductive category formation and deductive category assignment (Philipp Mayring, 2014; Step 5). We divide the interpretive acts of analysis into three steps. The first step categorized transcribed information about innovations into measured and hidden innovations. Step 2 interpreted the processes leading to hidden innovations and the characteristics of the innovations. This step was a deductive interpretation based on the innovation process literature presented in Section 2.1. Step 3 identified triggers to hidden innovations. The triggers were a result of inductive category development. These three steps of category interpretation yielded two types of hidden innovations characterized by specific process and trigger characteristics, which are further explained in Section 4. Table 2 presents the main findings on hidden innovation, whereas Table 3 presents key quotes from the interviews that are used evidentially in the presentation of findings in Section 4.

According to Philipp Mayring (2014), in Step 7, various strategies can be employed to ensure the quality of the study (quality criteria). We used the QCA's rule-guided procedures to strengthen the reliability criterion. As suggested by Johnson and Christensen (2013), we used using 'critical friends and external audits' to ensure the validity of the method and study design. We

TABLE 2 (Continued)

Hidden innovations found among senior managers	Hidden innovations revealed via post-CIS interviews (forgotten innovations or efforts misinterpreted as not being innovations)	Stage-merged process	Stage-wise process	Formal evaluation	Informal evaluation	WO-oriented work climate
	A new cooking competition concept (a new service) was introduced based on guests' demands. This is a hidden innovation because the manager did not interpret the new concept as an innovation according to the CIS instructions.					
	Improvement in the interactional qualities of services (e.g., new ways to manage guests in the reception or the restaurant). This improvement represents an incremental service innovation that the senior manager forgot to report to the CIS. This innovation was implemented through rapid application processes triggered by informal and formal evaluations.	X		X	X	X
	The senior manager for Hotel 1 claimed that, in general, he encourages employees to be innovation oriented.					
C <sub>top</sub> Senior manager Hotel 2	C <sub>top</sub> admitted during the interview that he had misinterpreted CIS instructions and did not report an innovation related to the hotel's hospitality and its storytelling concept, which had significantly improved the services and service quality.	X			X	X
D <sub>top</sub> Group manager	Senior manager was sure that innovations were introduced in the organization without his knowledge. He stated that he fully trusts his employees; they are recruited as department managers with authority to carry out development tasks.					X

Abbreviations: CIS, community innovation survey; HR, human resources.



**TABLE 3** Quotes from interviews

Respondents	Quotes	Quote number
Department managers	‘The management has clearly stated that they want us to develop new products. I think they are aware of the benefits of using the expertise in each department’. (A1)	Q1
	‘We continuously improve or develop the services; the innovations are not similar to finishing the manufacturing of products’. (A2)	Q2
	‘The manager is involved in many development processes, but mostly when the work involves cost calculation and funding—not smaller innovations. We have initiated improvements in procedures, routines, and practices without the involvement of senior managers. We always had a culture of working independently, and innovations are quite extensive when senior managers are involved, I would say’. (A3)	Q3
	‘In the case of work processes (high voice), we have made several changes and adjustments. Although the changes are small in nature, they have simplified our work, accelerated processes, and enhanced the work conditions in the bike shop and customer experience. We test ideas and change work processes continuously’. (Followed up by describing examples) (A4)	Q4
	‘As I remember it, this idea started with a discussion between two of my employees’. (A4)	Q5
	‘The idea was presented and discussed on one of our regular Monday evaluation meetings’. (A1)	Q6
	‘It all started with a discussion on an evaluation meeting we had after the season had ended’. (A6)	Q7
Senior managers	‘I know that my employee put efforts into continuous adjustments and improvements; these changes lead to significant improvements in our services. I usually hear about these innovations after the implementation. I have given my employees the freedom to take such decisions’.	Q8
	‘I seek to encourage my employees to be innovation-oriented’. (Atop)	
	‘The most important thing for a business like ours is to encourage our employees to think. To achieve this, you need to be an engaged manager who gives employees an opportunity to analyze, express curiosity, and think differently. I want them to take responsibility and feel free to act. Success is not easy, and it is definitely not easy to report in a questionnaire’. (Ctop)	Q9
	‘I fully trust my employees; they are recruited as department managers with the authority to carry out development tasks’.	Q10
	‘In our company, we have no routines for reporting improvements or innovations to a higher level’. (Dtop)	Q11

addressed the credibility issue by using purposeful sampling of companies (Patton, 1999), which revealed a rich picture of innovation. The interviews of personnel from different organizational staffing levels contributed to reliability. For ensuring validity and the quality of analysis, the study conducted triangulation of multiple analysts (Patton, 1999). Both the authors were involved in all the stages of the study—both were involved in the interviews and analyses. To attest the innovations’ degree of significance, we included the following criteria: the idea and the process should involve more than two employees and have consequences for how the work was unfolded in the whole department; department managers should be involved or confirm the innovation. This means that, for example, practice-based innovations (e.g., *bricolage*) were not categorized as hidden innovations.

When assessing the validity and credibility of the study, we also acknowledged the limitations of a qualitative, empirical study featuring a small sample size of businesses. It cannot be argued that these findings will be consistent with the findings in similar businesses in general. However, in qualitative studies, we can propose some tentative and general interpretations. The small sample in our study provides empirical evidence that serves our purpose of an exploratory study. We have confronted and compared our empirical findings with available research on hidden or invisible innovation to increase the validity of our research. We summarized our exploratory findings

through a model that partly rests on and integrates research on related topics, in order to strengthen the validity and credibility of this research.

## 4 | FINDINGS

### 4.1 | The four businesses and their hidden innovations

Company A runs two large Alpine centres in Norway; it employs approximately 200 people (50 person-years). The company offers several downhill skiing and summer experiences, including biking and downhill biking, which are organized by departments headed by department managers. The company faces strong competition from domestic companies and Alpine centres abroad. To maintain or increase its competitiveness, it introduces new and attractive services regularly. Some new products or services require significant investment, such as new and more advanced lifts offering increased comfort and capacity, new restaurants and new lounges with better facilities. Hence, the upper management must approve heavy investments, participate in part in their development processes and stay abreast of those innovations. Interviews with department managers revealed additional innovations developed at the department level; however,

these innovations were not reported by the top management in the study's questionnaire. Table 2 presents the hidden innovations in Company A, based on the responses of A1–A6 and Atop. It must be noted that Table 2 presents all the hidden innovations found in each of the sample businesses.

Company B is a small family-run hotel, comprising five full-time workers and 15–20 part-time workers. According to the family, the hotel is an attraction and accommodation business. In 2015, Company B won the 'World Luxury Hotel Award'. The company is close to a winter destination; it offers cabins, flats and apartment blocks. It features a golf course and emphasizes food, dining and wine experiences. Wealthy customers demand extraordinary food and wine menus, preferring local food, storytelling and other experiential elements related to the menus. Hence, the owner/top manager has invested heavily in new facilities such as a new apartment building, which prioritizes novel and exciting architectural solutions. The top manager focused on these investments when filling the CIS questionnaire; he forgot other smaller innovations, such as new food-experience concepts (see Table 2).

Company C is a small mountain hotel, comprising five full-time workers and 15–20 part-time workers. It emphasizes mountain experiences, such as cross-country skiing, biking and hiking, during both winter and summer seasons. In winter evenings, the company offers a storytelling experience based on the company's tourism history. This hotel also emphasizes food experiences and art exhibitions. It has invested heavily in buildings of high architectural quality. The top manager reported new buildings and spectacular architecture as innovations in the CIS survey; owing to own involvement during involvement, the manager added storytelling and new winter experiences at night because he had been involved in their implementations. Respondent C1 was involved in Company C's marketing; hence, C1 reported other innovations related to food and art, which the top manager did not report in the CIS (see Table 2).

Company D is an enterprise in a small company group that consists of four enterprises. It features an amusement park, a children's farm, cabin accommodations and a hotel with restaurants. All four enterprises are run individually and have separate managers, who are all subordinate to the senior management of the company group. The hotel has approximately five persons working full time and 15–20 part-time workers on the payroll. In total, the group has approximately 50 full-time employees and 80 workers in peak season. CIS procedure implies that the questionnaire should be sent to the top management of the group company. Top management completed the survey and reported several innovations, including new facilities in the water park, a new roller coaster, new and technically advanced outdoor play equipment, and the thematizing of hotel rooms. These innovations were demanding, expensive and easily visible and depended on thorough planning. Respondent D1, the hotel manager, spoke of other innovations, including a new takeaway concept and the new organization of the management; these innovations were not reported by the top management of the group company did not report in the questionnaire (see Table 2).

## 4.2 | Types of hidden innovations and their associated processes and triggers

This section explains the key findings from the interviews, fulfilling Mayring's Step 6. Several examples of innovations went undetected by senior managers; therefore, they were categorized as hidden innovations (Table 2). This section discusses the answers to RQ 1 and RQ 2. Table 3 shows some key quotes from the interviews that are used evidentially and illustratively.

Concerning RQ 1, hidden innovations seem to arise for two reasons. First, several innovations are developed and implemented in departments or at lower levels of the enterprises. These innovations are primarily incremental; they do not involve senior management and hence are not reported to senior management (or otherwise recorded)—senior management does not know about them. Table 3 presents the key quotes that underline and explain this nature of hidden innovations, whereas Table 2 exemplifies these innovations. Q7–Q9 (Table 3) show how top managers trust their employees and encourage them to act in terms of improving and innovating services—department managers confirm this experience in Q1 and Q3. In many occasions of innovative work (illustrated with Q2 and Q4 in Table 3), several steps of incremental innovations contribute towards significant improvement, in line with the findings from Bloch (2007) and Tether (2005). As enterprises have never been asked or ordered to report innovations to any formal bodies (such as Statistics Norway), they have not introduced procedures to record innovations. Innovations are also hidden owing to the misinterpretation of instructions and forgetfulness (see top management examples in Table 2). In the study, senior managers were aware of the innovations but forgot to report them because of the absence of procedures to record them. Alternatively, they misinterpreted CIS definitions and instructions, interpreting innovation to mean great leaps requiring significant investment.

When senior managers either forget to report innovations or misinterpret CIS instructions, actual innovations are not reported in the CIS, which leads to hidden innovations.

Findings support the arguments of Abreu et al. (2010) and Djellal and Gallouj (2015) regarding the occurrence of hidden innovations in services; they also support the findings of Camisón and Monfort-Mir (2012) and Nordli (2016) regarding hidden innovations in tourism. We find that hidden innovations are rather incremental, not radical and related to technology only to a small degree (Ettlie et al., 1984; Hansen & Serin, 1997; O'Brien, 2016). Technological innovations, such as new ticketing and booking systems, have been captured by the CIS. In Table 2, the examples of hidden innovations reported by respondents (A1–A6, B1, C1 and D1) are the ones unreported by the senior managers; the examples of hidden innovations reported by Atop, Btop, Ctop and Dtop describe innovations that senior managers did not report because of either misinterpretations or forgetfulness. Related thoughts of senior managers about the innovation processes in their organizations are also included in Table 2—confirmed in Q5–Q7 (Table 3). To sum up, hidden innovations remain hidden because the survey respondents *do not know* about the innovation,

do not have the innovation in mind or do not perceive the innovations as significant, while answering the questionnaire.

Concerning RQ 2, following two different processes, the analysis of the findings suggests two types of hidden innovations in tourism. Type 1 is generated through a stage-wise process (Alam & Perry, 2002; Cooper, 1990) but at the department or section level of the organizations. Type 2 is generated through a stage-merged process, representing an accelerated process and sometimes appearing as a rapid application (Toivonen, 2010). We refer to Type 1 as hidden stage-wise innovations and Type 2 as hidden stage-merged innovations. Table 2 presents several examples of the two types.

#### 4.2.1 | Type 1 - Hidden stage-wise innovations

Hidden stage-wise innovations are anchored in the department strategy and launched at the department level; they emerge in several steps, from formal or informal evaluations to successful plans, according to respondents in departments. However, these innovations are not reported to or recorded by the senior management. Table 2 shows the following examples of hidden stage-wise innovations: A1 (new teaching technique: the snake), A5 (new outside operations to run and maintain the ski lift), A6 (new or improved services in ski/equipment rental), D1 (new takeaway concept; new organizational and management model) and Btop (new dining and chef concepts).

Another example of a hidden stage-wise innovation is an innovation in the ski rental services related to rental services and the adjustment of boots (Table 2, A6). The idea for this innovation emerged from an annual evaluation, where employees shared that they lacked competence in boots-fitting services. The department manager delegated the responsibility for improving boot services to a small group of employees. These employees attended a training course; specifically, they learned to customize the inner shoes with warming tools, analyse the feet and find the best models, and adjust boot settings to offer customers an improved skiing experience. This innovation also involved investments in new equipment that staff needed to implement its new competence. A training plan for other employees was created; before the start of the new season, all the employees of the department participated in training and were introduced to new equipment and routines related to customer service. The head of the department (A6) reported that the service led to a significant increase in customer satisfaction and stronger engagement and motivation among employees. The process of developing and implementing the idea comprised fixed stages, which were strategically planned by the department manager and employees.

#### 4.2.2 | Type 2 - Hidden stage-merged innovations

Hidden stage-merged innovations are initiated by smaller groups of employees or department sections. These initiatives usually include an evaluation through discussions and a common perception of an

inhibitory operational problem, which, in turn, prompt new ideas implemented as solutions. Typically, the planning or discussion of a solution is mixed with action, and solutions may be modified quickly through a trial-and-error approach involving several smaller steps and adjustments that constitute the innovation. Table 2 presents the following examples of the hidden stage-merged innovations: A2 (new measures for treating customers in the booking system and new measures for streamlining the information flow via the booking system), A3 (organizational innovation: new solutions in the human resources [HR] department that improved employee job satisfaction), A4 (changes in the work processes of the bicycle rental service) and Btop (improvement in the interactional quality of services [e.g., new ways to treat guests at the reception or in the restaurant]).

The bicycle rental change is a solid example of a Type 2, hidden stage-merged innovation (Table 2, A4). On weekends, the staff rent out 120–140 bicycles and related equipment (helmets and other protection) at approximately the same time each morning. In the evenings, customers return bicycles and equipment, which are often soiled because of the wet muddy trails. Employees stay for hours to clean bicycles and equipment for the next day. Based on experiences, interaction and customer responses, a group of employees and the bike shop manager discussed these challenges, produced ideas and developed a possible solution. They reorganized the rental shop and outside facilities as self-service systems/stations. They also established new routines for welcoming and dealing with customers who used self-service systems/stations. The customers were encouraged to wash bicycles and equipment before returning them to the rental shop. All ideas were implemented very quickly (accelerated process) because the staff faced enormous challenges on fully booked weekends. The implication here was to ensure the success of the innovation, and hence, bicycle shop employee was provided extra training in managing guests using the new routines.

A general characteristic of both types of hidden innovations is that they are unknown, forgotten or misinterpreted by the senior management. Even if the department managers recognize these innovations, the senior management remain unaware of these innovations, owing to their incremental character and the absence of procedures to record and map them. Department managers are involved in some way with the processes of hidden stage-wise innovations. Hidden stage-merged innovations do not necessarily involve department managers; even if they are not involved, the innovation is suggested for a formal evaluation and confirmed by the department manager. The department managers play a role in distinguishing between hidden innovations and practice-based innovations (Fuglsang, 2010; Toivonen, 2010). Compared with the CIS-reported innovations (mostly stage-wise and linear processes), hidden innovations are typically small in scale and less financially demanding. Hidden stage-merged innovations are especially likely to represent several incremental improvements resulting in significant improvements (Bloch, 2007; Tether, 2005). Some of the hidden innovations, two food-experience concepts and the hosting/storytelling concept included—to a certain degree—the elements of *tradition*, which is also addressed as a driver of innovation by Presenza et al. (2019).

### 4.3 | Triggers of hidden innovation

As a result of addressing RQ 3, the analysis revealed two triggers of hidden innovation presented in the following section.

#### 4.3.1 | Evaluations trigger hidden innovations in tourism

Findings show that the majority of hidden innovations are triggered by formal or informal evaluations of work processes, outcomes and customer feedback (Table 2). These evaluations are carried out at the department, section or group level and do not usually involve senior management. Formal evaluations occur regularly, often as seasonal evaluations or regular weekly evaluations in which employees participate (see Q6 and Q7 in Table 3 and Section 4.2.1). These evaluations include identifying the problems and discussing solutions or new ideas. Informal evaluations—spontaneous and impulsive meetings among employees and, sometimes, the department manager—appear to be as important as formal evaluations. Several hidden innovations are prompted by informal evaluations initiated by employees directly involved in frontline services (Q8 in Table 3 illustrates this finding). These informal evaluations manifest as the exchanges of experiences and discussions of possible solutions during the working day or week. The problems, ideas and potential solutions are discussed with the department manager before implementation. Interactions with the department managers lead to distinguishing between hidden innovations and practice-based innovations. An interactive nature seems vital (Fuglsang, 2008; Jensen et al., 2007).

#### 4.3.2 | WO-oriented work climate triggers hidden innovations

In line with literature arguing that employees play a role in generating innovation (Engen, 2016; Engen & Magnusson, 2018; Suliman, 2001), our findings demonstrate how employees (including frontline employees) and department managers play roles in triggering and driving hidden innovations. The sampled department managers expressed a positive attitude towards their workplace and colleagues. They stated that they took responsibility for work outcomes, usually by interacting with colleagues, and expressed satisfaction when they solved problems or improved the group's collective performance. They also referred to employees as responsible, performance-driven, problem-solvers and concerned with service improvements. Employees and department managers appeared willing (interested and motivated) to engage in innovation (see Q1–Q7, Table 3), which fits with one of the three factors Engen (2016) finds crucial to frontline employees' participation in service innovation. Our findings also show how senior managers support innovative actions among employees and department managers (Q8–Q10, Table 3). Atop is aware of employees' efforts to implement adjustments and improvements; he encourages

employees to be innovation oriented and provides opportunity for them to act (see Table 2 and quotes from Atop in Table 3). Dtop states that he fully trusts his employees; they are recruited as department managers with the authority to carry out development tasks (Q10, Table 3). We interpret his statements to mean that employees are delegated authority and have access to resources offering an opportunity to act. Opportunity is another factor mentioned by Engen (2016). We find that hidden innovations are triggered in companies when its employees have the willingness (W) and the work conditions offer them an opportunity (O) to act innovatively. Based on the definition of work climate (Suliman, 2001) (the perceived work environment), we call the workplace combining willingness and opportunity a WO-oriented work climate, one that lets employees perceive opportunities and potentially increases their willingness. Engagement in formal and informal evaluations leads to actions released by the WO-oriented climate; it means that the WO-oriented climate lays a foundation triggering evaluation and hidden innovations. Evaluations may represent an opportunity to engage, and the informal evaluations that lead to hidden innovations may promote the willingness. Thus, our empirical findings support the idea that a WO-oriented work climate is a trigger to hidden innovation. The WO-oriented climates of Company A and Company C were found to be especially strong (indicated in Table 2 with a bold X).

## 5 | CONTRIBUTIONS

### 5.1 | Contributions to theory

This study contributes to the literature on hidden innovation in tourism by suggesting a framework illustrating how hidden innovations are triggered and unfold. Our findings confirm the presence of hidden innovations (Abreu et al., 2010; Camisón & Monfort-Mir, 2012; Djellal & Gallouj, 2010; Hansen & Serin, 1997; Nesta, 2007; O'Brien, 2016) and supplement prior research on hidden innovations in tourism (Camisón & Monfort-Mir, 2012; Nordli, 2016; Rønningen & Nordli, 2016), by expanding the understanding of hidden innovations in the sector.

Detailed insights about the two types of hidden innovation processes add knowledge to the incomplete understanding of how innovation processes occur in tourism companies. The study also reveals the incentives those processes draw on, which fills a knowledge gap underlined by Hjalager (2010). To the best of our knowledge, the two triggers identified here—evaluation (formal or informal) and a WO-oriented climate—have not been addressed in previous literature on drivers/triggers to tourism innovation (Divisekera & Nguyen, 2018; Eide & Fuglsang, 2013; Nordli, 2018b; Rønningen & Lien, 2014). However, recent publications address how entrepreneurial characteristics among employees or managers are crucial to innovation (Presenza et al., 2019; Presenza & Petruzzelli, 2019). In these case studies, the willingness and opportunity to innovate are also included as entrepreneurial skills.

Concerning the framework, it stems from the examination of the interaction between the two triggers and the two types of hidden innovations. It results in four hidden innovation paths with roots in the WO-oriented climate. This contribution and the paths are visualized in Figure 1.

The starting points of these innovations are employees, especially the frontline employees, experience gained from daily work and customer responses; these aspects have been addressed by Engen (2012), Engen and Magnusson (2015, 2018) and Nordli (2018b). An important precondition and a trigger for the hidden innovation process is the WO-oriented work climate that leads to evaluation and action (Figure 1). Formal and informal evaluations are the other important triggers of hidden innovations. Evaluations—interactional processes including department or section staff or a working group level—generate ideas and knowledge about necessary improvements that increase the quality of the services. The trigger phase depends on an interaction; this is analogous to the studies that consider tourism innovation an interactive process (Fuglsang et al., 2011; Fuglsang & Nordli, 2018).

The WO-oriented work climate is a particularly important prerequisite for informal evaluation, which leads to hidden stage-merged innovations (Path 4), given that this path and process do not include formalized procedures or arrangements to capture employees' experiences and ideas. This path depends on department managers' acceptance of the idea, which acts as a mandatory stage between evaluation and implementation, when a department manager is not directly involved.

Even though it is possible to schedule a formal evaluation without a WO-oriented work climate, the WO-oriented climate is relevant to effective formal evaluation. A WO-oriented climate creates a foundation for formal evaluations, a space where employees are willing to engage. WO-oriented climate helps release initiatives and efforts to address challenges identified in daily practice, and it supports sharing in the formal evaluation. Formal evaluation triggering hidden stage-wise innovations (Path 1) is the most formal and controlled path; it is a time-demanding process because of its planning and stage-wise nature (Alam & Perry, 2002; Cooper et al., 2002). The examples of hidden stage-wise innovations were based on ideas generated by evaluations after a peak season; they were planned and unfolded throughout the off season and implemented before the next peak season. Utilizing time and work resources in the off season is sometimes beneficial, though it is less effective as a response to immediate problems during peak seasons. Although employees play vital roles in formal evaluation as well as in the stage-wise innovation process, innovation processes also depend on the end-to-end involvement of the department managers. Because the entire process is run at a local level—department level—this innovation process is smaller in scale and a faster variant of comprehensive, centralized, linear, staged process models (Alam & Perry, 2002; Cooper et al., 2002; Cowell, 1988). However, the stage-wise models are more time-intensive than the hidden stage-merged innovations. Whereas Path 1 is the most formalized path, Path 4 is the most spontaneous and less formalized path.

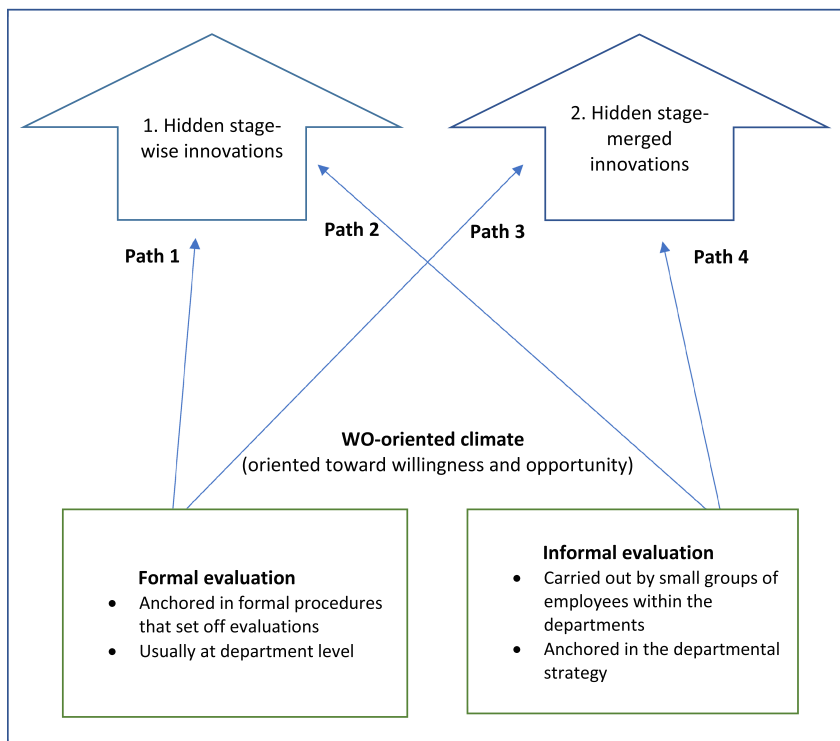
In Section 4.2, the hidden stage-wise innovations stem from a formal evaluation (Path 1), whereas the hidden stage-merged innovations stem from informal evaluation (Path 4).

Whereas Paths 1 and 4 represent the extremes of formalization and spontaneity, Paths 2 and 3 represent mixed solutions. Hidden stage-merged innovations often appear during busy high-season periods (Paths 3 and 4) when rapid response and implementation is necessary. As department managers have less control over the stage-merged innovations triggered through the informal evaluation (Path 4), they may use weekly evaluations to capture spontaneous ideas and give a quicker approval. In this way, the informal evaluation can be transformed into formalized evaluation before the implementation of the hidden stage-merged innovation (Path 3). Other findings demonstrate how informal innovations from smaller groups of employees become hidden stage-wise innovations (Path 2). Ideas may be prompted by informal evaluation, though they need detailed planning before implementation; they may need to be turned into stage-wise innovations (Path 2).

## 5.2 | Managerial implications

Our study has implications for managers and for application to the context of Norwegian tourism. Findings suggest how managers can facilitate hidden innovation. First, managers should focus on stimulating a WO-oriented work climate, which lays a foundation for evaluation and the initiation of the hidden innovation processes. Although formal evaluation routines are straightforward and simple for department managers to implement, they may be inadequate. Without a WO-oriented work climate, employees fail to make substantial contributions to problem identification, problem-solving, idea generation or planning. Department managers should be aware of the importance of providing employees sufficient scope to innovate as well as access to resources needed in the innovation process; this approach will contribute towards stimulating the opportunity factor of the WO-oriented climate (Engen, 2016). It seems that managers have less control over the willingness factor. Engen (2016) emphasizes that the innovation capability of willing employees can be utilized by providing them with an opportunity. At minimum, managers should make it clear to staff that they have access to resources and the opportunity and authority to act.

Rapid responsiveness may be particularly important for the tourism industry because companies often face seasonal peaks with busy workdays that demand rapid action. It may be helpful to have managers that pave the path for stage-merged innovations, perhaps by organizing formal evaluations or capturing ideas from informal evaluation. However, the most effective department managers are open to practices where planning may unfold while innovations are implemented, as with hidden stage-merged innovations. Department managers can also utilize the time available in off-season periods to plan innovations that can be implemented before the commencement of the next season, as in the case of Path 1 to hidden, local linear innovations.



**FIGURE 1** Hidden innovations in tourism and their triggers [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

### 5.3 | Contributions to methodology

Another implication of this study is the idea that national statistical offices conducting the CIS should ask senior management to introduce procedures capturing innovations developed at decentralized levels in their enterprises—departments, sections or groups. These decentralized innovations could also have their own category/question in the CIS. This approach will make it possible to analyse these innovations separately. The instructions for CIS from the statistical offices should also emphasize that the innovations are not restricted to single discrete changes but include a series of incremental changes that amount to substantial improvement. Bloch (2007) argues that this understanding has been acknowledged in the third edition of the *Oslo Manual* (sections 124 and 151), though it has not been well implemented in the CIS. The CIS uses the term ‘significant improvement’ but without further definition. Our study’s respondents did not interpret CIS instructions to include innovations created by a series of small steps.

If CIS instructions emphasize that (1) respondents can use an appropriate procedure to map innovations at the department and section levels and that (2) innovations created by many small changes can be reported, then it would be possible for CIS and CIS-like surveys to register a significant number of hidden innovations. Through the new instructions, the respondents of unreported innovations or changes not interpreted as innovations may acknowledge that the previous survey instructions led them to think about innovations at a centralized level. An appropriately designed CIS

questionnaire could substantially reduce bias against hidden innovations.

## 6 | LIMITATIONS AND FUTURE RESEARCH

This explorative study is limited to investigate four Norwegian companies. This limitation indicates that more research should be conducted to validate the findings. One way of validation is to replicate and extend the study by including more countries. As an additional validation, the study can investigate hidden innovation in other countries by conducting a similar study. For example, prior research has revealed that the use of a CIS-like questionnaire showed low innovation rates in the Danish tourism industry (Hjalager, 2002), whereas another Danish study on experience businesses found high innovation rates with a modified CIS measurement (Fuglsang et al., 2008)—a gap that has not been commented. Studies from the Central and Southern Europe also indicate a poor innovation capacity in the tourism industry (Orfila-Sintes et al., 2005; Ottenbacher & Gnoth, 2005), and a QCA approach, as in this study, may give answers to whether innovation is hidden in these countries. Accordingly, studies including more businesses and countries would be valuable to validate the findings of this study and give insight into hidden innovation in a broader context. Finally, as Section 5.2 explains in detail, it would be essential to implement a modified CIS measure including new procedures to conduct further research in tourism.



## ACKNOWLEDGEMENTS

Anne Jørgensen Nordli and Martin Rønningen gratefully acknowledge the financial support received from the project 'Regional dynamics and innovation capabilities in non-metropolitan contexts' (REDINN) funded by the 'Sparebankstiftelsen Hedmark Foundation'.

## ORCID

Anne Jørgensen Nordli  <https://orcid.org/0000-0003-3130-4704>

## REFERENCES

- Abreu, M., Grinevich, V., Kitson, M., & Savona, M. (2010). Policies to enhance the 'hidden innovation' in services: Evidence and lessons from the UK. *The Service Industries Journal*, 30(1), 99–118. <https://doi.org/10.1080/02642060802236160>
- Alam, I., & Perry, C. (2002). A customer-oriented new service development process. *Journal of Services Marketing*, 16(6), 515–534. <https://doi.org/10.1108/08876040210443391>
- Alsos, G. A., Eide, D., & Madsen, E. L. (2014). *Handbook of research on innovation in tourism industries*. Cheltenham: Edward Elgar Publishing. <https://doi.org/10.4337/9781782548416>
- Barrett, P., Abbott, C., Sexton, M., & Ruddock, L. (2007). Hidden innovation in the construction and property sectors. *RICS Research Paper Series*, 7(20), 1–21.
- Bessant, P. J. (1992). Big bang or continuous evolution: Why incremental innovation is gaining attention in successful organisations. *Creativity and Innovation Management*, 1(2), 59–62. <https://doi.org/10.1111/j.1467-8691.1992.tb00029.x>
- Bloch, C. (2007). Assessing recent developments in innovation measurement: The third edition of the Oslo Manual. *Science and Public Policy*, 34(1), 23–34. <https://doi.org/10.3152/030234207x190487>
- Camisón, C., & Monfort-Mir, V. M. (2012). Measuring innovation in tourism from the Schumpeterian and the dynamic-capabilities perspectives. *Tourism Management*, 33(4), 776–789. <https://doi.org/10.1016/j.tourman.2011.08.012>
- Coombs, R., & Miles, I. (2000). Innovation, measurement and services: The new problematic. In J. S. Metcalfe & I. Miles (Eds.), *Innovation systems in the service economy* (pp. 85–103). Boston: Kluwer Academic. [https://doi.org/10.1007/978-1-4615-4425-8\\_5](https://doi.org/10.1007/978-1-4615-4425-8_5)
- Cooper, R. G. (1990). Stage-gate systems: A new tool for managing new products. *Business Horizons*, 33(3), 44–54. [https://doi.org/10.1016/0007-6813\(90\)90040-1](https://doi.org/10.1016/0007-6813(90)90040-1)
- Cooper, R. G., Edgett, S. J., & Kleinschmidt, E. J. (2002). Optimizing the stage-gate process: What best-practice companies do—II. *Research-Technology Management*, 45(6), 43–49. <https://doi.org/10.1080/08956308.2002.11671532>
- Cowell, D. W. (1988). New service development. *Journal of Marketing Management*, 3(3), 296–312. <https://doi.org/10.1080/0267257X.1988.9964048>
- Divisekera, S., & Nguyen, V. K. (2018). Determinants of innovation in tourism evidence from Australia. *Tourism Management*, 67, 157–167. <https://doi.org/10.1016/j.tourman.2018.01.010>
- Djellal, F., & Gallouj, F. (2000). Innovation surveys for service industries: A review. In B. Thuriaux, E. Arnold, & C. Couchot (Eds.), *Innovation and enterprise creation: Statistics and indicators*. Valbonne: European Commission, Eurostat.
- Djellal, F., & Gallouj, F. (2010). Invisible innovation and hidden performance in services a challenge for public policy. *Intereconomics*, 45, 278–283. <https://doi.org/10.1007/s10272-010-0346-3>
- Djellal, F., & Gallouj, F. (2015). *Taking into account hidden innovation in innovation networks: The role of public-private innovation networks in services*. ffhalshs-01191137.
- Eide, D., Fuglsang, L. (2013). Chapter 15. Networking in the experience economy: Scaffolded networks between designed and emerging regional development. In J. Sundbo & F. Sørensen (Eds.), *Handbook on the experience economy* (pp. 287–309). Cheltenham: Edward Elgar Publishing.
- Eide, D., & Mossberg, L. (2013). Towards more intertwined innovation types: Innovation through experience design focusing on customer interactions. In J. Sundbo & F. Sørensen (Eds.), *Handbook on the experience economy* (pp. 248–268). Cheltenham: Edward Elgar Publishing.
- Eisenhardt, K. M., & Tabrizi, B. N. (1995). Accelerating adaptive processes: Product innovation in the global computer industry. *Administrative Science Quarterly*, 40, 84–110. <https://doi.org/10.2307/2393701>
- Engen, M. (2012). En eksplorativ studie av innovasjonsprosesser i reiselivsbedrifter. In M. Rønningen & T. Slåtten (Eds.), *Innovasjon og næringsutvikling i en reiselivskontekst* (pp. 29–52). Bergen: Fagbokforlaget.
- Engen, M. (2016). Frontline employees as participants in service innovation processes: Innovation by weaving. (PhD), Lillehammer University College, Lillehammer.
- Engen, M., & Magnusson, P. (2015). Exploring the role of front-line employees as innovators. *The Service Industries Journal*, 35(6), 303–324. <https://doi.org/10.1080/02642069.2015.1003370>
- Engen, M., & Magnusson, P. (2018). Casting for service innovation: The roles of frontline employees. *Creativity and Innovation Management*, 27(3), 255–269. <https://doi.org/10.1111/caim.12263>
- Ettlie, J. E., Bridges, W. P., & O'keefe, R. D. (1984). Organization strategy and structural differences for radical versus incremental innovation. *Management Science*, 30(6), 682–695. <https://doi.org/10.1287/mnsc.30.6.682>
- Fuglsang, L. (2008). *Innovation and the creative process: Towards innovation with care*. Cheltenham: Edward Elgar Publishing. <https://doi.org/10.4337/9781848440104>
- Fuglsang, L. (2010). Bricolage and invisible innovation in public service innovation. *Journal of Innovation Economics*, 5(1), 67. <https://doi.org/10.3917/jie.005.0067>
- Fuglsang, L., Højland, J., Sundbo, J., & Sørensen, F. (2008). Innovation i oplevelsesvirksomheder: Resultater fra en survey. Retrieved from [http://rudar.ruc.dk:8080/bitstream/1800/3103/2/Innovation\\_i\\_oplevelsesvirksomheder.pdf](http://rudar.ruc.dk:8080/bitstream/1800/3103/2/Innovation_i_oplevelsesvirksomheder.pdf)
- Fuglsang, L., & Nordli, A. (2018). On service innovation as an interactive process: A case study of the engagement with innovation of a tourism service. *Social Sciences*, 7(12), 258. <https://doi.org/10.3390/socsci7120258>
- Fuglsang, L., Sundbo, J., & Sørensen, F. (2011). Dynamics of experience service innovation: Innovation as a guided activity—Results from a Danish survey. *The Service Industries Journal*, 31(5), 661–677. <https://doi.org/10.1080/02642060902822109>
- Gadrey, J., & Gallouj, F. (1998). The provider-customer interface in business and professional services. *Service Industries Journal*, 18(2), 1–15. <https://doi.org/10.1080/02642069800000016>
- Gallouj, F., & Weinstein, O. (1997). Innovation in services. *Research Policy*, 26(4/5), 537–556. [https://doi.org/10.1016/S0048-7333\(97\)00030-9](https://doi.org/10.1016/S0048-7333(97)00030-9)
- Green, L., Miles, I., & Rutter, J. (2007). Hidden innovation in the creative sectors: Interim report for NESTA. Retrieved from [http://moemesto.ru/alz59/file/3940541/Nesta\\_Hidden%20innovation%20in%20the%20creative%20sectors\\_2007.doc](http://moemesto.ru/alz59/file/3940541/Nesta_Hidden%20innovation%20in%20the%20creative%20sectors_2007.doc)
- Hall, M. C., & Williams, A. M. (2008). *Tourism and innovation*. London: Routledge. <https://doi.org/10.4324/9780203938430>
- Hansen, P. A., & Serin, G. F. (1997). Will low technology products disappear? *Technological Forecasting and Social Change*, 55, 179–191. [https://doi.org/10.1016/S0040-1625\(97\)89490-5](https://doi.org/10.1016/S0040-1625(97)89490-5)
- Hjalager, A.-M. (2002). Repairing innovation defectiveness in tourism. *Tourism Management*, 23(5), 465–474. [https://doi.org/10.1016/S0261-5177\(02\)00013-4](https://doi.org/10.1016/S0261-5177(02)00013-4)

- Hjalager, A.-M. (2010). A review of innovation research in tourism. *Tourism Management*, 31(1), 1–12. <https://doi.org/10.1016/j.tourman.2009.08.012>
- Hopp, C., Antons, D., Kaminski, J., & Oliver Salge, T. (2018). Disruptive innovation: Conceptual foundations, empirical evidence, and research opportunities in the digital age. *Journal of Product Innovation Management*, 35(3), 446–457. <https://doi.org/10.1111/jpim.12448>
- Jensen, M. B., Johnson, B., Lorenz, E., & Lundvall, B. Å. (2007). Forms of knowledge and modes of innovation. *Research Policy*, 36(5), 680–693. <https://doi.org/10.1016/j.respol.2007.01.006>
- Johnson, R. B., & Christensen, L. (2013). *Educational research: Quantitative, qualitative, and mixed approaches* (5th ed.). US: Sage Publications Inc.
- Marshall, M. N. (1996). Sampling for qualitative research. *Family Practice*, 13(6), 522–526. <https://doi.org/10.1093/fampra/13.6.522>
- Martin-Rios, C., & Ciobanu, T. (2019). Hospitality innovation strategies: An analysis of success factors and challenges. *Tourism Management*, 70, 218–229. <https://doi.org/10.1016/j.tourman.2018.08.018>
- Mayring, P. (2014). Qualitative content analysis: Theoretical foundation, basic procedures and software solution.
- Mayring, P. (2015). *Qualitative Inhaltsanalyse-Grundlagen und Techniken* (Beltz Pädagogik, 12., überarb. Aufl.). Weinheim, Germany: Beltz.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks, California: Sage.
- Moorman, C., & Miner, A. S. (1998). The convergence of planning and execution: Improvisation in new product development. *The Journal of Marketing*, 62, 1–20. <https://doi.org/10.1177/002224299806200301>
- Nesta. (2007). Hidden innovation: How innovation happens in six “low innovation” sectors. Retrieved from [http://www.nesta.org.uk/sites/default/files/hidden\\_innovation.pdf](http://www.nesta.org.uk/sites/default/files/hidden_innovation.pdf)
- Nordli, A. J. (2016). Measuring innovation in tourism with community innovation survey: A first step towards a more valid innovation instruments. *Scandinavian Journal of Hospitality and Tourism*, 17, 1–18. <https://doi.org/10.1080/15022250.2016.1247382>
- Nordli, A. J. (2018a). Exploring the CIS and hidden innovation in a service context. (PhD), Inland Norway University of Applied Science, Lillehammer.
- Nordli, A. J. (2018b). Information use and working methods as drivers of innovation in tourism companies. *Scandinavian Journal of Hospitality and Tourism*, 18(2), 199–213. <https://doi.org/10.1080/15022250.2017.1343682>
- O'Brien, K. (2016). Revealing hidden innovation: Patterns of external innovation investment in Australian businesses. *Technology Innovation Management Review*, 6(6), 41–48. <https://doi.org/10.22215/timreview/996>
- OECD/Eurostat. (2005). *Oslo manual: Guidelines for collecting and interpreting innovation data*. Paris: OECD Publishing.
- Orfila-Sintes, F., Crespi-Cladera, R., & Martínez-Ros, E. (2005). Innovation activity in the hotel industry: Evidence from Balearic Islands. *Tourism Management*, 26(6), 851–865. <https://doi.org/10.1016/j.tourman.2004.05.005>
- Ottenbacher, M., & Gnoth, J. (2005). How to develop successful hospitality innovation. *Cornell Hotel and Restaurant Administration Quarterly*, 46(2), 205–222. <https://doi.org/10.1177/0010880404271097>
- Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research*, 34(5 Pt 2), 1189–1208.
- Presenza, A., & Petruzzelli, A. M. (2019). Investigating business model innovation in Haute Cuisine. Role and behavior of chef-entrepreneurs. *International Journal of Hospitality Management*, 82, 101–111.
- Presenza, A., Petruzzelli, A. M., & Sheehan, L. (2019). Innovation through tradition in hospitality. The Italian case of Albergo Diffuso. *Tourism Management*, 72, 192–201. <https://doi.org/10.1016/j.tourman.2018.11.020>
- Rønningen, M., & Lien, G. (2014). Chapter 2. The importance of systemic features for innovation orientation in tourism firms. In G. A. Alsos, D. Eide, & E. L. Madsen (Eds.), *Handbook of research on innovation in tourism industries* (pp. 27–55). Cheltenham: Edward Elgar Publishing.
- Rønningen, M., & Nordli, A. J. (2016). Er reiselivsnæringene innovative? In E. Merok & T. Arnesen (Eds.), *Innovasjon i fragmenterte næringer*. Vallset: Oplandske Forlag.
- Schreier, M., Stamann, C., Janssen, M., Dahl, T., & Whittal, A. (2019). Qualitative content analysis: Conceptualizations and challenges in research practice—Introduction to the FQS special issue “qualitative content analysis I”. *Forum: Qualitative Social Research*, 20(3). <https://doi.org/10.17169/fqs-20.3.3393>
- Seidman, I. (2013). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. New York: Teachers College Press.
- Silverman, D. (2005). *Doing qualitative research* (2nd ed.). London: Sage.
- Suliman, A. M. T. (2001). Are we ready to innovate? Work climate-readiness to innovate relationship: The case of Jordan. *Creativity and Innovation Management*, 10(1), 49–59. <https://doi.org/10.1111/1467-8691.00190>
- Sundbo, J., & Gallouj, F. (2000). Innovation as a loosely coupled system in services. *International Journal of Services, Technology and Management*, 1(1), 15–36. <https://doi.org/10.1504/IJSTM.2000.001565>
- Tether, B. S. (2005). Do services innovate (differently)? Insights from the European innobarometer survey. *Industry & Innovation*, 12(2), 153–184. <https://doi.org/10.1080/13662710500087891>
- Toivonen, M. (2010). Different types of innovation processes in services and their organisational implications. In F. Gallouj & F. Djellal (Eds.), *The handbook of innovation and services: A multi-disciplinary perspective* (pp. 221–249). Cheltenham and Northampton: Edward Elgar Publishing. <https://doi.org/10.4337/9781849803304.00021>
- Toivonen, M., & Tuominen, T. (2009). Emergence of innovations in services. *The Service Industries Journal*, 29(7), 887–902. <https://doi.org/10.1080/02642060902749492>
- Trigo, A. (2013). The nature of innovation in R&D- and non-R&D-intensive service firms: Evidence from firm-level latent class analysis. *Industry and Innovation*, 20(1), 48–68. <https://doi.org/10.1080/13662716.2013.761380>
- Verganti, R. (2011). Radical design and technology epiphanies: A new focus for research on design management. *Journal of Product Innovation Management*, 28(3), 384–388. <https://doi.org/10.1111/j.1540-5885.2011.00807.x>
- Weiss, R. S. (1995). *Learning from strangers: The art and method of qualitative interview studies*. New York: Free Press.
- Wilhelmsen, L., & Foyn, F. (2012). Innovasjon i norsk næringsliv 2008–2010 (Rapporter nr. 46/2012). Retrieved from [https://www.ssb.no/teknologi-og-innovasjon/artikler-og-publikasjoner/\\_attachment/92171?\\_ts=13c81109870](https://www.ssb.no/teknologi-og-innovasjon/artikler-og-publikasjoner/_attachment/92171?_ts=13c81109870)

## AUTHOR BIOGRAPHIES

**Anne Jørgensen Nordli** is an associate professor at Inland Norway University of Applied Sciences. Her background is a Master of Science in Marketing. Her fields of research are service innovation, innovation in tourism, public innovation and brand management. She holds a PhD more specifically on measurements and understanding of innovation in tourism.

**Martin Rønningen** is a full-time professor at Inland Norway University of Applied Sciences (INN University). Rønningen's research has involved subjects as new forms of co-operation, destination development, destination image, holiday motivation, travel

behaviour and innovation in the tourism industry and the service industry in general. Rønningen is the leader of the PhD programme 'Innovation in Services Public and Private Sector' at INN University.

**How to cite this article:** Nordli AJ, Rønningen M. Tracking hidden innovations in tourism. *Creat Innov Manag.* 2021;30: 303–319. <https://doi.org/10.1111/caim.12440>

[circabc.europa.eu/ui/group/47133480-29c1-4c23-9199-72a631f4fd96/library/6f5dc4f5-920e-433a-8576-c97bcea6f863/details](http://circabc.europa.eu/ui/group/47133480-29c1-4c23-9199-72a631f4fd96/library/6f5dc4f5-920e-433a-8576-c97bcea6f863/details).

**A.1 | Step 1**

Respondents (senior managers as well as department managers) are contacted either by e-mail or by phone and kindly asked to participate in the study. It is explained to them that the study is about innovation and that it tests a questionnaire and addresses innovation and how they work with innovation generally. They are informed about anonymity.

Time and date for the interview are scheduled.

**APPENDIX A.**

**INTERVIEW GUIDE—EXAMINING THE USE OF THE CIS**

**QUESTIONS IN TOURISM COMPANIES**

The CIS questionnaire that is examined: Statistics Norway's Norwegian version of CIS 2008–2010. For English version, see <https://>

**A.2 | Step 2: The interview**

The interview (60 min, –/+)	Explanation of 'open/semistructured questions'	Respondent
Before the interview	The respondent is asked to read the questionnaire introduction and to answer all the questions about product innovation, process innovation, market innovation and organizational innovation.	All
Conversation about 'product innovation'	If you answered 'yes', i.e., that the company has implemented product innovations, what innovations did you think of? Please describe the innovation(s). Please describe in detail the work and efforts that led to the innovation(s): <ul style="list-style-type: none"> <li>• How was the working process?</li> <li>• Where did the idea come from?</li> <li>• Who was involved?</li> <li>• Was it initiated and developed at the top or department/section level?</li> </ul>	All
Conversation about 'process innovation'	If you answered 'yes', i.e., that the company has implemented process innovations, what innovations did you think of? Please describe the innovation(s). Please describe in detail the work and efforts that led to the innovation(s): <ul style="list-style-type: none"> <li>• How was the working process?</li> <li>• Where did the idea come from?</li> <li>• Who was involved?</li> <li>• Was it developed at the top or department/section level?</li> </ul>	All
Conversation about 'organization and market innovation'	If you answered 'yes', i.e., that the company has implemented organization or market innovation(s), what innovations did you think of? Please describe the innovation(s). Please describe in detail the work and efforts that led to the innovation(s): <ul style="list-style-type: none"> <li>• How was the working process?</li> <li>• Where did the idea come from?</li> <li>• Who was involved?</li> <li>• Was it developed at the top or department/section level?</li> </ul>	All
General questions about innovation	How do you, in general, work with innovation in your organization? Anchored in plans or strategy, procedures, routines, systematics, ad hoc ... etc.?	All
	Have your company (or department) introduced improvements of products/services/work routines that you did not report in the questionnaire? Please explain, and explain why you did not register them?	All
	To what degree does the top management know about the innovations you have reported, have they been involved to some degree?	Department manager
	To what degree does innovation processes go on in your organization without you (or other from top management) being involved?	Senior manager