Business model innovation and business concept innovation as the context of incremental innovation and radical innovation

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Abstract: Innovation is a means for obtaining competitive advantages in the tourism and hospitality sectors. However, the innovations, knowledge, and technologies acquired may be easily accessible for competitors. This study, which is based on interviews with 115 senior managers, seeks to show how tourism and hotel firms innovate, and how the achievement of successful innovations is possible. A model for business innovation is proposed, which takes full advantage of internal and external sources of innovation for the generation of sustainable competitive advantages. The findings show the effects of business model innovation and business concept innovation. The adoption of new models and concepts that support innovation are shown to be important. Specifically, the keys to successful incremental and radical innovations lie in adopting a new contextual and conceptual framework through which innovations can occur and customer needs can be met, thereby giving rise to new competitive advantages.

Highlights

Business model innovation modifies the context of internal innovation
Business concept innovation modifies the logic and patterns of internal innovation
Innovation strategy, business concept, and business model are interrelated
Business concept innovation is a central pillar in business model innovation
Successful innovation is not only about technological and scientific progress

Business model innovation and business concept innovation as the context of incremental innovation and radical innovation

Abstract

Innovation is a means for obtaining competitive advantages in the tourism and hospitality sectors. However, the innovations, knowledge, and technologies acquired may be easily accessible for competitors. This study, which is based on interviews with 115 senior managers, seeks to show how tourism and hotel firms innovate, and how the achievement of successful innovations is possible. A model for business innovation is proposed, which takes full advantage of internal and external sources of innovation for the generation of sustainable competitive advantages. The findings show the effects of business model innovation and business concept innovation. The adoption of new models and concepts that support innovation are shown to be important. Specifically, the keys to successful incremental and radical innovations lie in adopting a new contextual and conceptual framework through which innovations can occur and customer needs can be met, thereby giving rise to new competitive advantages.

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1. Introduction

An analysis of innovation in service firms is interesting, due to the importance of innovation in these firms and the weight of the service sector in the economy (Miles, 2005). It is also very clear that innovation is particularly important in tourism (Aldebert et al., 2011; Hjalager, 2010; Martínez-Ros and Orfila-Sintes, 2009; Novelli et al., 2006; Stamboulis and Skayannis, 2003; Sundbo et al., 2007; Williams and Shaw, 2011). Tourism and manufacturing firms do not innovate in the same manner, nor do all firms in the services sector (Martínez-Ros and Orfila-Sintes, 2009; Sundbo et al., 2007), although all services have common innovation aspects. This study focuses on the tourism sector, particularly on the hotel industry.

Tourism firms and the broader service sector share certain features that influence innovation. The hotel industry is part of, and has similarities with, the tourism sector, as well as with other service-sector firms.

Innovation is a requirement for operating in today's competitive tourism environment (Novelli et al., 2006), even to the point that firm competitiveness within the tourism sector and the hotel industry depends on innovation achievement (Orfila-Sintes and Mattsson, 2009; Sundbo et al., 2007). Therefore, innovation is a relevant subject in tourism research, mainly due to its positive impact on economic performance, although the consolidation of innovation phenomenon in tourism requires further theoretical and empirical studies (Hjalager, 2010).

A critical innovation factor is knowledge (Hjalager, 2010), both scientific and technological knowledge and sector-specific knowledge. Non-technological knowledge and non-technological innovations are crucial for the competitiveness of tourism firms. It means that it is possible to distinguish between different kinds of innovations – technological and non-technological –, which is important because innovations based on external knowledge readily accessed by competitors might be quickly and easily imitated. In tourism and hospitality, technological innovations are commonly the result of external technology, external technological knowledge and scientific knowledge available for any firm in the industry, but as Chapman et al. (2002) note, the same occurs in other industries where the technology developers are external to the industry, because they sell new technologies to everyone.

Technological innovation in tourism and the hotel industries is mainly supplier-dominated (Evangelista and Savona, 2003; Pavitt, 1984). This probably is the most evident and clear innovation type, as well as the most studied in the manufacturing sector. However, internal innovations in tourism and hotel industries are mainly non-technological; thus here is a great challenge for researchers in tourism and hotel innovation, as well as in the service sector. It also provides great opportunities for advancing the field of innovation. Non-technological innovations, such as in business models and business concepts, are a way to demonstrate innovation’s potential for service firms. It should be noted that manufacturing firms are not restricted only to

technological innovations, so the study of business model and business concept innovation in the service industry can have applications for manufacturing firms as well.

The aim of this study is to show the influence of business model innovation and business concept innovation on successful incremental and radical innovations. In other words, to assess whether firm innovation – distinguishing between degrees of novelty – depends on new business models or new business concepts. Thus, the existing business model in the firm, or the business concept established, may preclude certain innovations, or in contrast, it may represent an important protection against imitation. Therefore, this study examines whether internal innovation options are limited, and consequently, the application and exploitation of internal knowledge and external knowledge.

At the same time, this provides a framework for understanding how non-technological developer firms innovate. Most of the innovation capacity of these firms is not focused on the generation of technological knowledge and scientific knowledge, nor does it depend exclusively on companies developing innovations outside this sector. This study presents empirical evidence on innovation in hotel firms, analyzing the relationship between business concept innovation and business model innovation, and the relation of both of these innovation types to incremental and radical innovations obtained by hotel firms.

2. Background and hypotheses

2.1. Innovation in hotel firms

The literature about innovation in the service sector is still very limited (Adegoke, 2007; Ettlie and Rosenthal, 2011; Flikkema et al., 2007), and it is even more limited, both theoretically and empirically, for the tourism industry. The number of theoretical studies on innovation in the tourism industry is astonishingly low (Williams and Shaw, 2011). Thus, it is not surprising that there are relatively few studies on innovation in the hotel industry, and that statistical analyses of this phenomenon are even rarer. This situation is a consequence on one hand of conceptual problems related to the characteristics of service, tourism and hotel firms, and on the other hand, to the lack of available data.

The characteristic features of services are clearly present in hotel and tourism firms, influencing how innovation manifests itself in these companies (Orfila-Sintes et al., 2005; Orfila-Sintes and Mattsson, 2009). This implies that each of the hotel and tourism industry characteristics are taken into account in innovation activities, such as close interaction with clients, coterminality, high content of information in services, and the importance of the human factor (Orfila-Sintes et al., 2005).

Hotel firms, as service companies active in the area of tourism, have specific features with respect to innovation. The configuration of hotel service characteristics are: (1) production and consumption happen at the same time (consumer and producer have to be in the same physical place); (2) intangible and tangible elements (a room is tangible but the right to sleep for a night in a quiet, clean, comfortable, etc. room is intangible); (3) transport and storage are not possible (a room is only available in one location for a specific period of time), which increase the difficulties of managing intangible aspects, because tangible and intangible elements are inevitably interrelated and linked; and (4) variability (it cannot be exactly repeated, because circumstances, conditions, configurations or assigned resources are not completely the same). In addition, another relevant, differentiating characteristic of tourism firms is that the competition is not only between firms in one geographic destination, but also between firms in different destinations.

Given these characteristics, the innovation process requires focusing on the close relationship with customers and the level of employee commitment. A service innovation needs the participation of prospective clients and staff cooperation (Orfila-Sintes and Mattsson, 2009).

Intangible and tangible service elements are interrelated in the hotel industry. This means that the intangible characteristics of service – as a night sleeping in a nice, quiet, clean and comfortable place – depend in part on how the hotel and its rooms are – physical and tangible characteristics of a service provided. In turn, these service characteristics are dependent on tangible and intangible aspects integrated or not integrated into the service provided, such as how employees treat guests, and the hotel's operating systems.

Furthermore, hotel firms are not technology-based or science-based firms (Hertog et al., 2011; Nieves et al., 2014; Orfila-Sintes and Mattsson, 2009). The technological innovation pattern of hotels is suppliers-dominated (Castellacci, 2008; Evangelista, 2000; Evangelista and Savona, 2003; Orfila-Sintes et al., 2005; Pavitt, 1984). Consequently, many innovations – resulting from technological knowledge and scientific knowledge – are embodied in machinery, equipment, hardware and software acquired by hotels, or deployed by external companies for hotel firms. However, in addition to innovation in the hotel industry that entails the adoption or use of innovations generated externally (Castellacci, 2008; Lim, 2009; Scaglione et al., 2009), hotel companies develop their own innovations, which requires that both technological innovations and non-technological innovations be taken into account (Hertog et al., 2011; Nieves et al., 2014; Orfila-Sintes and Mattsson, 2009). Accordingly, the Oslo Manual (OECD and EUROSTAT, 2005) stresses that technological innovations do not reflect a large portion of the innovations generated in the services sector.

In addition, innovation does not end with the development of new knowledge, but with the application of new knowledge with the aim of meeting customers' needs. This, in relation to the prevailing technological innovation pattern, paints a more complex picture of innovation in hotels than mere technology push. In fact, tourism and hotel firms do not innovate mainly due to the development of new scientific knowledge (Sundbo, 1997) or new technologies (Nieves et al., 2014; Orfila-Sintes and Mattsson, 2009), though some technologies are internally developed by hotels (Orfila-Sintes and Mattsson, 2009), but from the confluence of three aspects. The first is the absorption and assimilation of external technological and scientific knowledge, and new technologies. The second is the generation of internal knowledge, in most cases of a non-scientific and non-technological nature. The third is the combination and application of internal knowledge and external knowledge in unique and original ways. Indeed, although the confluence of these three aspects is important for innovation in all companies, sometimes one of them is overlooked, resulting in a skewed picture of the innovation process, especially in hotels where all of them play a critical role.

The innovation process is not enclosed inside firm boundaries; useful external sources of innovation can be found outside the firm. Both internal and external innovation

sources are important for innovation (Chesbrough, 2007; Von Hippel, 1988). Moreover, firms do not innovate in isolation; collaboration with other companies or institutions increases innovation opportunities. Consequently, innovation can be generated internally from internal and external sources of innovation, internally in collaboration with other entities, externally in collaboration with other entities, or acquired from other firms. Tourism companies – including hotels – use all these options, but each of them has different effects on firm competitive advantages.

The choice of a collaboration partner depends on its role in the generation or exploitation of one innovation. On one hand, some innovations require knowledge not available for a tourism firm because it is not accessible or assimilable by a tourism firm. On the other hand, an innovation might require its exploitation along the value chain or in the package of services offered to the tourist in order to obtain all the benefits created by it.

2.2. Degree of innovation novelty: incremental and radical

Innovation is the commercialization of an invention, but it can be also described as bright new ideas that are brought to the market by implementing these bright new ideas into firms' products, processes, or organizational methods. Therefore, product, process and organizational innovation are identified as the three main types of innovation.

Product innovation is the commercialization of a significantly improved or completely new product or service (OECD and EUROSTAT, 2005). It is the result of new knowledge or technologies (including Information and Communication Technologies, ICTs), or new uses or combinations of existing knowledge or technologies (including ICTs).

Process innovation is the introduction of new or significantly improved methods in firm operations (OECD and EUROSTAT, 2005), which cover every activity from service sales to service production and delivery. It is also the result of new knowledge or technologies (including ICTs), or new uses or combinations of existing knowledge or technologies (including ICTs).

Organizational innovation is a new or significantly improved management or organizational method or business practice (OECD and EUROSTAT, 2005). As with the two first types of innovation mentioned above, it is the result of new knowledge or technologies (including ICTs), or new uses or combinations of existing knowledge or technologies (including ICTs).

The notion of knowledge as a critical resource is underpinned by its role in the achievement of product, process and organizational innovations. In fact, innovation is not only the result of new scientific or technological knowledge, but also encompasses new uses or combinations of existing scientific or technological knowledge (Li et al., 2013; Miller et al., 2007; Schumpeter, 1934). In addition, there is another knowledge that has considerable importance in hotel and tourism innovations – sector specific knowledge. Sector specific knowledge is the most essential in innovation achievement, because it allows firms to: (1) develop new uses for or combinations of existing scientific and technological knowledge; (2) understand how new scientific and technical knowledge might be applied; and (3) (often overlooked in manufacturing or science based firms studies) internally generate important non-technological and non-scientific innovations.

The innovations – product, process and organizational – have different degrees of novelty, because the novelty is intrinsic to the innovation. Thus, the degree of novelty of an innovation is another classification with two categories – incremental and radical.

Schumpeter (1934 & 1942) described radical innovation as the key to economic development, through a process of creative destruction, a revolutionary "change" – a breakthrough – in product, process, or organization. In other words, this type of innovation breaks with previous structures, procedures, activities (Damanpour, 1996; Martínez-Ros and Orfila-Sintes, 2009), and products in a firm (Martínez-Ros and Orfila-Sintes, 2009).

A radical innovation, then, is an innovation with a high degree of novelty, which breaks with what existed previously and is the result of non-obvious paths or ideas.

Consequently, a radical innovation involves great challenges and opportunities (Teece, 2010; Tushman and Anderson, 1986).

In contrast, incremental innovation is an innovation with a low degree of novelty, as well as less risk and cost than radical innovation (Martínez-Ros and Orfila-Sintes, 2009; Tushman and Anderson, 1986), though with considerably less potential for positive impact on firm performance. Thereby, incremental innovation does not break with previous products, processes or organizational methods, because it is a significant improvement of previous products, processes or organizational methods (Martínez-Ros and Orfila-Sintes, 2009), as this carries a lower degree of novelty. Nonetheless, consecutive incremental innovations could result in a radical innovation.

It is possible to apply, without any adjustment, the terms "incremental innovation" and "radical innovation" to the tourism and hotel industry because both are extrapolated directly to these sectors.

Hotel chains have opportunities for incremental product innovations, radical organizational innovations (Williams and Shaw, 2011), radical product and process innovations, and incremental process and organizational innovations. Likewise, hotel groups, hotels in general, and other tourism and service firms, can also access a broad range of innovation opportunities. However, these options are open to internal innovations only if these firms take advantage of non-technological and non-scientific innovations.

The existing literature, in addition to detailing different types of innovations, also uses a wide variety of innovation definitions. The Oslo Manual, in an attempt to bring together these definitions, considers innovation as that which is significantly improved or is new for the company or the market (OECD and EUROSTAT, 2005). Nonetheless, the most widely accepted definition (mentioned previously) comes from a portion of the seminal work of Schumpeter (1934), which states that innovation is the introduction into the market of an invention or a new brilliant idea. This conception of the term innovation, widespread in the literature, does not judge the success of the invention or new idea, only requires that it implies progress and reaches the market. In this regard, Armbruster et al. (2008), Damanpour et al. (1989), Rammer et al. (2009), Wang et al. (2008), and

Chesbrough and Rosenbloom (2002) recognized the need to introduce the label "successful" to avoid confusions about the meaning of the term.

2.3. Business model innovation

Magretta (2002) and Teece (2010) highlight the need to refer to customers and the value proposition when defining a business model. Thus, business model innovation could be defined as a new configuration of what is done in the company and how it is done, in order to provide a new value proposition to customers. In other words, it is the new or significantly improved system of activities required for the generation of a new value proposition. Furthermore, in order to ensure that the term business model innovation does not include mere changes or reconfigurations that have no impact on firm competitiveness, the label "relevant" is used.

The understanding of this innovation and its role in the innovation process requires a description of the connections between knowledge, technology, and innovation, with a special emphasis on the importance of industry-specific knowledge.

Hotels generate knowledge from their current operations and from their market, and acquire knowledge from external sources as well. However, in order to collect and assimilate knowledge from external sources, an effective absorption capacity is required (Zahra and George, 2002). Hence, innovation is the result of the combination of different kinds of knowledge – technical, non-technical, market knowledge, etc. But innovation also requires creativity. New ideas rise from creativity, and a new idea becomes an innovation when it is implemented and when it exploits a market opportunity. Therefore, a new idea is implemented through the combination of different kinds of knowledge, and is subsequently introduced onto the market.

The nature of knowledge in hotels is mainly related to their business, both tacit knowledge and explicit knowledge, which can be used in the innovation process. Fundamentally, experience is a way to increase industry-specific knowledge.

The workforce might possess valuable knowledge for the achievement of firms' competitive advantages. Much of such knowledge is tacit and the result of professional experience. Tourism firms' innovations are mostly based on practical experience (Gallouj, 2002; Metcalfe and Miles, 2000; Sundbo, 1997; Sundbo et al., 2007). Indeed, employees are crucial in the learning process, as well as in the innovation process. The human factor is key in tourism and hotel firms, where human resources play a prominent role in knowledge generation, assimilation, and application. For that reason, having employees with a high level of education and specific training creates a propitious environment for innovation. However, employees generate, assimilate, combine and apply knowledge within the business model.

Industry-specific knowledge is necessary for the achievement of non-technological and non-scientific innovations as well as technological and scientific innovations. In these two sets of innovations, the role of industry-specific knowledge is less evident in the second than in the first one, because technological and scientific innovations are usually associated exclusively with scientific or technological knowledge. Technological and scientific innovations are the result of applying technological or scientific knowledge. However, how such knowledge is applied in the achievement of an innovation depends on industry-specific knowledge. As business model innovation articulates a significant amount of industry-specific knowledge, this innovation could serve as a basis for achieving other innovations with different degrees of novelty.

Furthermore, Schumpeter (1934) recognized that innovation is not necessarily the discovery of a new technology or knowledge, because sometimes the technologies and knowledge required already exist, and are merely awaiting their application towards meeting a specific need. Thus, innovation involves finding and satisfying an unmet need, or finding and solving a customer problem. Hence, commercialization of a solution is critical for achieving an innovation, where business and market knowledge play a highly important role, and hotels' own innovations become possible.

Business model innovation, in turn, allows a firm to offer something different than its competition. Tourism involves visiting, seeing, and living in a different mode; in other words, it is a living experience (Stamboulis and Skayannis, 2003). In order to change a tourist's living experience, a new business model is necessary, which makes offering

new services and a new combination of services possible. At the same time, this opens up the possibility of a new range of incremental and radical innovations. Radical innovations and incremental innovations are built up and exploited in the new business models, improving the current business model's products, processes, and organization.

Therefore, a new business model creates new options for applying and exploiting knowledge and technology in different ways than competitors do, providing a platform for internal innovations (incremental and radical) in the hotel and tourism industry. Of course, innovation depends on both resources and capabilities within the firm and resources and capabilities accessible by the firm. Martínez-Ros and Orfila-Sintes (2009) point out the importance of firm resources and capabilities in innovation. But a new business model changes the stock of resources and capabilities in the firm, and consequently innovation options. This is because a new value proposition is one of the elements necessary for the creation of a new business model (Amit and Zott, 2001; Chesbrough and Rosenbloom, 2002; Magretta, 2002; Osterwalder et al., 2005; Teece, 2010; Zott et al., 2011), involving changes in the services or products offered to the customer and thereby, changing a tourist's living experience. Moreover, the achievement of a new value proposition requires the modification of productive services carried out in the organization. Penrose (1959) detailed the productive services as the result of using sets of resources and capabilities. Thus, new business models cause changes in resources and capabilities within the company (used by the firm), and also transforms how resources and capabilities are used (the use of resources and capabilities).

Knowledge, as part of resources and capabilities, also changes both the knowledge that is used and how that knowledge is used. This happens through knowledge generation, knowledge acquisition, and knowledge application – all of which are necessary for incremental and radical innovation. In fact, innovation is the result of generating, acquiring, combining and applying knowledge (Aranda and Molina-Fernández, 2002; Asheim and Coenen, 2005; Demsetz, 1991; Grant, 1996b; Schoonhoven et al., 1990). Thus, innovation may not only be affected by the new value proposition, but also by the new system of activities. A business model consists of a system of activities configured to create, deliver and capture value (Chesbrough, 2007; Zott and Amit, 2010). This system represents the context for generating, acquiring, applying and exploiting

knowledge, and consequently for achieving and exploiting innovations. But as a new business model involves changes in that system (Demil and Lecocq, 2010), it also leads to changes in the generation, acquisition, application, and exploitation of knowledge.

Hence, the following hypotheses are formulated:

Hypothesis 1: Relevant business model innovation has a positive effect on successful incremental innovations.

Hypothesis 2: Relevant business model innovation has a positive effect on successful radical innovations.

2.4. Business concept innovation

A business concept is a perception of how to manage and carry out an economic activity; it involves preconceived ideas, myths and behavioral rules. A business concept innovation reconceives or breaks with widely accepted ideas, myths and behaviors about how a business should be, changing the perception of how to run the business. Such an innovation is a new or significantly improved mental model relating to a business, which leads to substantial modifications in firm' methods and general knowledge. This, in turn, makes it possible for tourism companies develop their own innovations where knowledge and technologies are applied in a new direction. Moreover, as in the case of business model innovation, in business concept innovation it is also advisable to add the label "relevant" to describe those new or significantly improved mental models that are relevant for firm competitiveness.

If hotel firms do not generally develop new technologies or new scientific knowledge, then where are their innovations coming from? The answer to this question requires recognizing the existence of non-technological and non-scientific knowledge. This type of knowledge is specific to firm activity. In other words, it is knowledge accumulated from the learning process of each common activity in a tourism firm. Every firm, in every industry, has specific knowledge from its economic activity (Aldebert et al., 2011), which comes from firm's market, organization, and production and delivery

process, etc. The great potential of this knowledge (non-technological and non-scientific knowledge) in the hotel industry lies in the development of new business concepts. Such innovation changes dramatically as business and products are conceived, creating a pattern about how and what knowledge or other firm resources must be used in the firm.

Business concept innovation shifts the emphasis toward what resources and capabilities are necessary and how resources and capabilities should be used, instead of the value "intrinsic" of resources and capabilities. In other words, it is a completely different understanding of a business, with consequences on the configuration patterns of resources and capabilities. In addition, new or significantly improved business concepts could trigger changes in the knowledge base itself, but it mainly provides a new logic for how knowledge is combined and applied. Consequently, technology and knowledge will be applied in a different way, which may lead to the configuration of new or significantly improved products, processes, or organizational methods. Likewise, service (tourism product) characteristics will differ among firms with different business concepts.

Furthermore, strategic options are restricted for business concept (Ardichvili et al., 2003; Hedman and Kalling, 2003), such as the identification of market opportunities, firm products and services offered (Ardichvili et al., 2003; Hedman and Kalling, 2003), and innovation opportunities. In particular, in the innovation process, the options identified in the phases of conception, invention, and exploitation limit achievable outcomes (Drejer, 1997; Drucker, 1985; Schumpeter, 1934). Relevant business concept innovation enables the identification of new options in the conception, invention, and exploitation of innovation. Li et al. (2013) highlight that the changes in interpretation and conceptualization leads to the pursuit of needed changes to achieve innovations within the company, as well as to the creation of new knowledge combinations. Also, Hamel (2001) details a business concept innovation theoretically as self-innovation, taking into account its possible relation with other innovations and its high impact on the firm. However, business concept innovation is also based on a deep understanding of customer needs, enabling a complete transformation of business (Hamel, 2001), which leads to changes in the business, and in the innovation process. Indeed, business concept delimits the identifiable and exploitable customer needs. In addition, if

innovation is the commercialization of an invention (Drejer, 1997; Schumpeter, 1934), and consequently, incremental and radical innovations emerge out of the identified needs of the customers (at least in the case of successful innovation), then, business concept constrains incremental and radical innovation. That is, new ideas are conceived, put into practice, and exploited based on the conception of customer needs; even identifiable and exploitable opportunities depend on business concept. Therefore, business concept innovation provides new options in the innovation process, as well as a new understanding of customer needs. This opens new identifiable and exploitable incremental and radical innovation opportunities. These arguments are tested in the two following hypotheses:

Hypothesis 3: The impact of relevant business concept innovation on successful incremental innovations is positive.

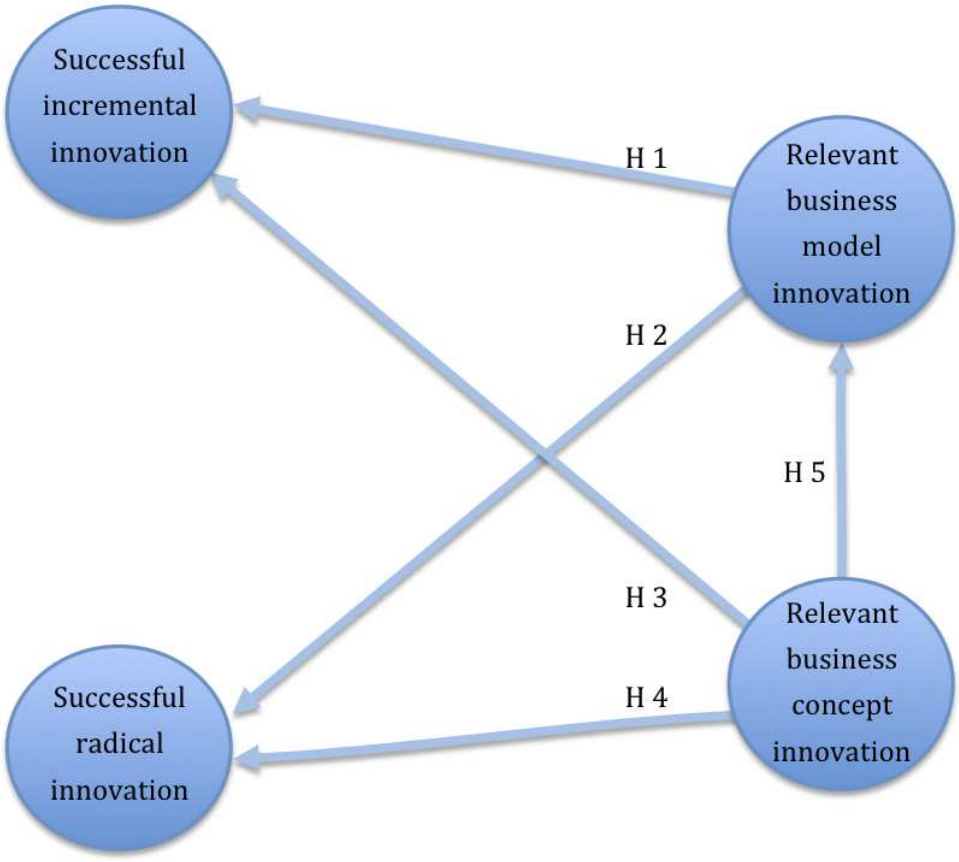
Hypothesis 4: The impact of relevant business concept innovation on successful radical innovations is positive.

Strategy, business models, and business concepts are not the same (Hedman and Kalling, 2003; Morris et al., 2005); each of them has a different meaning, and it is important to be aware of their interrelationships. Both business model and business concept integrate some strategic considerations (Morris et al., 2005), but they are not the same as strategy. A business model is a system of activities configured and implemented to provide a specific value proposition to the customer (Amit and Zott, 2001; Magretta, 2002; Osterwalder et al., 2005). A business concept is a notion of how customer needs might be served or the resources and capabilities deployed (Ardichvili et al., 2003); in other words, business logic. Thus, these terms are not synonymous, even though business model is based on business logic. Actually all products, processes, and organizational methods follow business logic. Moreover, with regard to innovation, the arguments mentioned above about the relationship between business concept innovation and other innovations remain valid for the case of business model innovation, although the foundation provided by business concept may have more relevance on business model innovations. This is due to the fact that a new business model design requires a deep understanding of what a business is and how it works – what that business really provides to the market, and how it meets customer needs –,

which is provided by business concept. In fact, business logic plays a critical role in finding a new configuration of what is done in the company and how it is done – resulting in a new value proposition. Hence, a relevant business concept innovation could be important for relevant business model innovation, in order to find another way of how it might be done. Indeed, business concept includes product and service concept, market concept, operations concept, supply chain concept, marketing concept (Ardichvili et al., 2003; Cardozo, 1986), and financial concept; in other words, elements related to the value concept, which determines the attainable new value propositions. Therefore, business concept innovations affect business model innovations. The following hypothesis tests this argument:

Hypothesis 5: Relevant business concept innovation has a high positive impact on relevant business model innovation.

Figure 1: Statistical model and hypotheses



H: Hypothesis

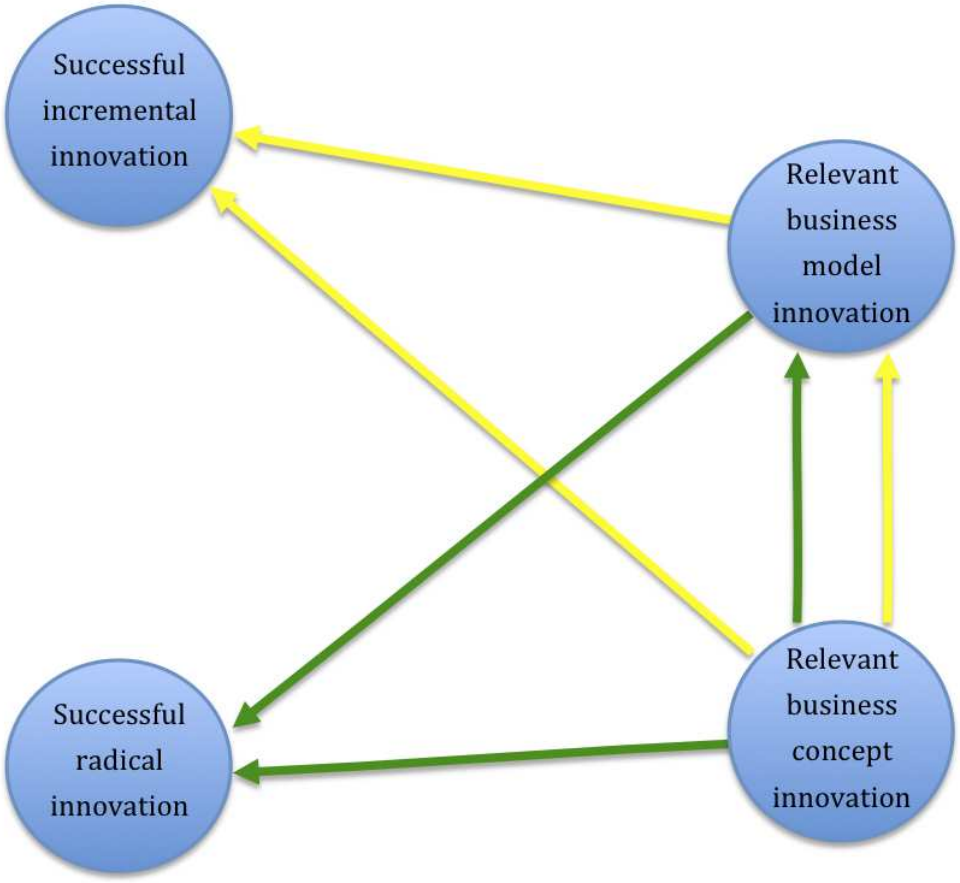
Another issue is whether business concept innovation has a limited effect on innovation if it is not implemented in a business model innovation. If the logic followed in order to create value lies in the business concept (and it determines how resources and capabilities are used, and a business model articulates a business concept in order to achieve a value proposition), then, resources and capabilities are generated or acquired in order to be deployed in an integrated system capable of achieving the designed value proposition. In fact, a business model is the architectural configuration necessary to realize a value proposition (Amit and Zott, 2001), but only when business model innovation is based on business concept innovation, can the firm obtain a completely new value proposition, which would be the outcome of new combinations and uses of resources and capabilities. The issue here is what the firm is doing and how the firm is doing it (Morris et al., 2005) with a unique combination and use of resources and capabilities. In other words, what is the foundation used when designing the new system of value creation, as well as the interactions and implications of the components of the new system. In effect, if the foundation used is a new or significantly improved business concept that is relevant from the competitive standpoint, then, as Morris et al. (2005) note, business model innovation is very difficult to replicate by competitors. This is because it is difficult for competitors to understand the new notion used in the design of interactions and implications among business model components integrated in the new architectural configuration. Furthermore, a well-conceptualized business model is robust and likely to be successful (Morris et al., 2005). In addition, a manager gives form to a new business concept through a new business model, applying knowledge in a specific sense. This reflects a new pattern of knowledge application, opening the door for the innovation. Innovation is the result of new knowledge or new combinations of existing knowledge or both (Asheim and Coenen, 2005; Grant, 1996a; Henderson and Clark, 1991; Henderson and Cockburn, 1995). "The reconfiguration of existing knowledge through new patterns of integration is more complex, but may be even more important …" (Grant, 1996a; 382). Moreover, managers' perceptions and decisions are based on their cognition (Tikkanen et al., 2005). Mental model transformation occurs in cognitive learning, creating a new conceptualization (Lumpkin and Lichtenstein, 2005). Business concept as a notion – understanding or logic to create value – is a mental model that determines perceptions. Therefore, because a business model articulates a business concept (Hamel, 2001), the pattern of application of knowledge and use of

resources and capabilities, resources and capabilities needed in the firm, and mental models that involve a business concept innovation, are mainly put into practice if the business concept innovation is implemented in a business model innovation. Thus, the following hypotheses test whether business concept innovations must be implemented in business model innovations in order to exercise considerable effect on firm' incremental and radical innovations.

Hypothesis 6: The total effect of relevant business concept innovation directly and through its use in relevant business model innovations positively influences successful incremental innovations.

Hypothesis 7: The total effect of relevant business concept innovation directly and through its use in relevant business model innovations positively influences successful radical innovations.

Figure 2: Total effects model and hypotheses



Hypothesis 6

Hypothesis 7

3. Method

3.1. Data

The hypotheses are tested focusing in a single industry: hotel firms. The analysis of a single and specific industry has advantages, among them are that knowledge, learning and innovation generation are more homogeneous (Alegre and Chiva, 2008; Santarelli and Piergiovanni, 1996). This avoids excessive diversity in the nature of the relationships between knowledge, learning, and innovation.

The target population is hotel firms that operate in Spain, specifically, hotel chains and hotel groups. Spain ranks second in the world as an international tourism destination (UNWTO, 2011, 2012, & 2013), with the most important hotel companies – from various nations – in the world (Dave, 1984; Fernandez and Marin, 1998; Martorell et al., 2012), involving a highly dynamic and competitive context (Pla-Barber et al., 2011; Villar et al., 2012). Thus, a list of 423 firms was obtained from the SABI database (Balance Analysis System Iberian Bureau Van Dijk) and TURESPAÑA (Ministry of Industry, Tourism and Trade of Spain), which includes only the firms that are at least 5 years old, have 30 or more employees, and have hotels of three or more stars.

Data was collected through an on-line survey with a firm director or another company-designated representative member of the firm management team. This survey consisted of a questionnaire previously tested with three hotel firms and an expert panel of six scholars, in order to ensure the interpretability, reliability and validity of data and its measures. The questionnaire has the next three sections: firm basic information; firm innovation; and firm growth.

The questionnaire was answered by 124 firms, with a response percentage of 29.3%. After eliminating incomplete responses, a representative sample of 115 valid responses

was obtained from the population identified. The sample was comparable to the population in terms of firm size and geographical location. The non-response bias was assessed through the method suggested by Armstrong and Overton (1977), consisting of the analysis of the difference between early respondents and late respondents. The results obtained between these two groups shows the existence of no significant differences for all the variables used in this study (at $p > 0.05$). Non-response bias is not a concern in the present research. The characteristics of the sample are described in the table 1.

Table 1: Sample characteristics

Personnel	
30-100	38.2 %
101-200	17.4 %
201-400	14.8 %
401-1000	9.6 %
More than 1000	20 %
Hotels around the world	
Bellow 15	69.6 %
15-49	13 %
50-99	7.8 %
More than 99	9.6 %

3.2. Measures

The constructs are as follows: successful incremental innovation has two items about incremental innovation (including technological and non-technological innovation) achieved in the last five years and during the life of the firm; successful radical

innovation has two items about radical innovation (including technological and non-technological innovation) achieved in the last five years and during the life of the firm; relevant business model innovation has two items, the first about business model innovations generated in the last five years, and the second about business model innovations generated during the life of the firm; and relevant business concept innovation construct has two items about business concept innovations generated in the last five years and during the life of the firm.

The five years period was chosen based on the studies of Bigliardi et al. (2011), Brown (1998), Debruyne et al. (2002), Fang et al. (2011), Laforet and Tann (2006), and Yahya et al. (2011).

The measure of the innovation by only innovation generated and exploited throughout the life of the company could distort the results due to the size changes or continuities and discontinuities in innovation during the organization life cycle (Koberg et al., 1996; Quinn and Cameron, 1983). As Abrahamson and Fairchild (1999) and Schumpeter (1934) note, new innovations may replace old innovations, leaving the old obsolete, so even among innovations generated over the life of a company there might be some that are no longer relevant or have become obsolete. On the other hand, focusing on a specific period of time might lead to the classification of certain innovative firms as non-innovative (Abrahamson and Fairchild, 1999; Armbruster et al., 2008). The use of variables to control these issues may allow the study of innovation, but in the analysis of the effects among different types of innovation these issues are so critical that they would distort the results. To avoid the aforementioned problems as well as other misspecification, while increasing the detail of the variables analyzed, each of the constructs consist of two items, one relating to the last five years and the other one relating to the whole life of the firm. Moreover, Van Riel et al. (2004) and Molina-Castillo and Munuera-Alemán (2009) highlight the importance of distinguishing between one shorter period and another longer period when the success or relevance of innovations is measured. A single dimension does not properly measure the success or relevance of innovation (Griffin and Page, 1996; Van Riel et al., 2004).

The definitions provided in the questionnaire are: incremental innovation is a non-technological and technological product, process, or organizational innovation

(excluding business model innovation and business concept innovation) with a low degree of novelty; radical innovation is a non-technological and technological product, process, or organizational innovation (excluding business model innovation and business concept innovation) with a high degree of novelty; business model innovation is a new or significantly improved architectural configuration of the system of creation, capture, and delivery of value; and business concept innovation is a new or significantly improved mental model about the business, encompassing even a new understanding of customer needs.

Successful incremental innovation and successful radical innovation include incremental and radical innovations generated and exploited in the firm, which are measured through the innovation process output in relation to firm competitiveness. In this respect, successful innovations involve the achievement of competitive advantages (Armbruster et al., 2008; Damanpour et al., 1989; Schumpeter, 1934 & 1942), and consequently, the selected items adequately describe successful innovations (Rammer et al., 2009; Wang et al., 2008).

Relevant business model innovation and relevant business concept innovation are measured with respect to competitively relevant model and concept innovation, respectively. These innovations are not mere changes, modifications or redesigns (Teece, 2010), but are a significant advance – in the business conceptualization, value proposition, or value creation system – with implications for the competitiveness of the firm.

The selected measure ensures a proper assessment of the innovations obtained by the companies under the conditions imposed in this study, based on Schumpeter's definition of innovation (1934 & 1942). Relevant and successful innovation is not only the materialization of something new or a change, but also includes progress that influence firm competitiveness and survival. In turn, this is because innovation involves, at the very least, an improvement in any of the aspects related to meeting customer needs. Therefore, the measurement of each item is a Likert scale of 7 points, from not at all important (1) to extremely important (7). This measure was selected because of the obvious difficulty in measuring the success and relevance of some innovations through their introduction in the market, such as: new process, organizational method or system,

business concept, and business model. In addition, other measures do not meet the requirements of this study because they do not cover all the innovations generated in the company (for example some innovations are not patentable). The sales generated by new products are a common indicator of success, but this is too narrow a focus since it reflects only product innovation (Rammer et al., 2009). Other possible measures, such as patents, do not imply that the firm achieves an innovation, because many patented inventions are not commercialized. The constructs and their dimensions are tested in the measurement model evaluation (see section 4.1 below).

In addition, all respondents stated that their innovations were generated in order to exploit them in their business activity. Here lies the importance of focusing on this industry: it allows, in an integrated manner, the analysis of the impact of business model innovation and business concept innovation on other innovations.

The firm size and firm turnover are included in the model as control variables. The firm size is measured through the number of employees (Mata and Woerter, 2013; Nieves and Segarra-Ciprés, 2015; Souto and Rodriguez, 2015).

3.3. Data analysis

The statistical technique used is Structural Equation Modeling (SEM) via Partial Least Squares (PLS). SEM is a second-generation statistical technique that ensures a rigorous analysis through two stages. The first examines the constructs measures (measurement model) and the second the relationship between the constructs (structural model). The advantage of PLS-SEM is that it does not require a large sample size and parametric data. PLS-SEM is appropriate for exploratory research and in the early stages of theory development. The sample size of this article exceeds by five times the requirements of PLS-SEM (Barclay et al., 1995; Chin and Newsted, 1999; Henseler et al., 2009). The statistical software used in the estimation of PLS-SEM was SmartPLS version 2.0.

Successful incremental innovation, successful radical innovation, relevant business model innovation, and relevant business concept innovation are reflective constructs.

4. Results

4.1. Measurement model evaluation

In order to evaluate the individual reliability, internal consistency, convergent validity, and discriminant validity of the measurement model, the loadings of all items on their factor, the composite reliabilities and Cronbach alphas, the average variance extracted (AVE), and the cross loadings are calculated.

The minimum acceptable value of loading values is 0.5 (Chin, 1998a & 1998b). The items of the constructs – successful incremental innovation, successful radical innovation, relevant business model innovation, and relevant business concept innovation – have loading values of 0.9, indicating good individual reliability.

Internal consistency is good, because composite reliabilities and Cronbach alphas are higher than 0.7 in each construct (Nunnally, 1978). Convergent validity is solid as well, because AVEs are over 0.5 (Fornell and Larcker, 1981).

Table 2: Evaluation of measurement model

Construct	Item	Loadings	Cronbachs alpha	Composite reliability	AVE
Successful incremental innovation	Incremental innovation achieved in the last five years	0.96	0.912	0.958	0.919
	Incremental innovation achieved during the life of the firm	0.957			
Successful radical innovation	Radical innovation achieved in the last five years	0.964	0.924	0.963	0.929
	Radical innovation achieved during the life of the firm	0.964			
Relevant business	Business model innovations generated in	0.97	0.937	0.95	0.905

model innovation	the last five years				
	Business model innovations generated during the life of the firm	0.97			
Relevant business concept innovation	Business concept innovations generated in the last five years	0.949	0.896	0.97	0.941
	Business concept innovations generated during the life of the firm	0.954			

The cross loadings table shows good discriminant validity, because the higher loading of each item corresponds to its construct.

Therefore, the measurement model is reliable and valid.

Table 3: Cross loadings

	Successful incremental innovation	Successful radical innovation	Relevant business model innovation	Relevant business concept innovation
Incremental innovation achieved in the last five years	**0.96**	0.737	0.679	0.667
Incremental innovation achieved during the life of the firm	**0.957**	0.691	0.638	0.654
Radical innovation achieved in the last five years	0.72	**0.964**	0.616	0.62
Radical innovation achieved during the life of the firm	0.717	**0.964**	0.646	0.593
Business model innovations generated in the last five years	0.68	0.64	**0.97**	0.814
Business model innovations generated during the life of the firm	0.652	0.63	**0.97**	0.832

Business concept innovations generated in the last five years	0.636	0.572	0792	**0.949**
Business concept innovations generated during the life of the firm	0.675	0.624	0.823	**0.954**

4.2. Structural model: hypotheses testing

The bootstrap method was calculated with 1000 samples to evaluate the structural model. Path coefficients and t-statistics of the bootstrap procedure are calculated to examine the effect size and to validate the hypotheses. Hypotheses one ($p < 0.05$), two ($p < 0.01$), three ($p < 0.05$), and five ($p < 0.001$) are supported, all of them with suitable positive effect size above 0.36. Only hypothesis four is rejected. Relevant business model innovation and relevant business concept innovation have a positive effect on successful incremental innovation in firms, and relevant business model innovation has a positive effect on successful radical innovation.

Although the fourth hypothesis is not supported, it is clear that the impact of relevant business concept innovation on successful radical innovation is lower than on successful incremental innovation, because one relationship is significant and the other one is not, and because the lower beta corresponds to successful radical innovation (0.256). Relevant business concept innovation has a high positive impact on relevant business model innovation, due to the fact that this relation is significant and the effect size is very high with a value of 0.848.

Table 4: Path coefficient and hypotheses

	Path coefficient (β)	Hypothesis
Hypothesis 1: Relevant business model innovation has a positive effect on successful incremental innovations	0.37*	Not rejected
Hypothesis 2: Relevant business model innovation has a positive effect on successful radical	0.416**	Not rejected

innovations		
Hypothesis 3: The impact of relevant business concept innovation on successful incremental innovations is positive	0.369*	Not rejected
Hypothesis 4: The impact of relevant business concept innovation on successful radical innovations is positive	0.256	Rejected
Hypothesis 5: Relevant business concept innovation has a high positive impact on relevant business model innovation	0.848***	Not rejected

* Significant at $p < 0.05$ ** Significant at $p < 0.01$ *** Significant at $p < 0.001$

Relevant business concept innovations do not affect successful radical innovations directly, but if that direct effect is combined with their indirect effect through relevant business model innovation, the resulting total effect is significant. Hypotheses six and seven are supported at $p < 0.001$. Relevant business concept innovation has a positive effect on obtaining successful radical innovations if it is used in the generation of relevant business model innovations. Furthermore, path coefficients of relevant business concept innovation on successful incremental and radical innovations are higher in total effect than in direct effect; in successful incremental innovations that increase is from 0.369* to 0.682***, and in successful radical innovations from 0.256 to 0.609***.

Table 5: Path coefficient and hypotheses of total effect

	Path coefficient (β)	Hypothesis
Hypothesis 6: The total effect of relevant business concept innovation directly and through its use in relevant business model innovations positively influences successful incremental innovations	0.682***	Not rejected
Hypothesis 7: The total effect of relevant business concept innovation directly and through its use in relevant business model innovations positively influences successful radical innovations	0.609***	Not rejected

* Significant at $p < 0.05$ ** Significant at $p < 0.01$ *** Significant at $p < 0.001$

The effect of the firm turnover on radical innovation is significant at $p < 0.05$ ($\beta = 0.109$). However, its impact on incremental innovation is not significant ($\beta = 0.043$; $p > 0.05$). Therefore, firm turnover has a positive effect on successful radical innovation, but not on successful incremental innovation. Firm size (number of employees) has no significant effect on radical innovation ($\beta = 0.023$; $p > 0.05$) and incremental innovation ($\beta = -0.01$; $p > 0.05$).

The R^2 of successful incremental innovation is 0.514; for successful radical innovation it is 0.46; and for relevant business model innovation it is 0.72. All are very good values that show the usefulness of the model to explain the variance of 51% for successful incremental innovations, 46% for successful radical innovations, and 72% for relevant business model innovations.

The predictive relevance of the model is excellent, as Stone-Geisser's Q^2 is 0.68 in relevant business model innovation, 0.48 in successful incremental innovation, and 0.43 in successful radical innovation.

A large value for goodness of fit (GOF) is 0.36 or higher (Wetzels et al., 2009). In this study, GOF is exceptional with a value of 0.72. The proposed model adequately reflects the attainment of incremental and radical innovations.

5. Discussion

Chesbrough and Rosenbloom (2002) and Teece (2010) proposed from the observation of the business world that technological innovation and business models are intimately related, recognizing only the role of business models in capturing value from technological innovation. However, the results obtained in this study indicate that business model innovation influences the generation and exploitation of other non-technological and technological incremental and radical innovations. Therefore, business model innovation provides a new context for innovation. In fact, a business model restricts the potential value embedded in a new technology (Chesbrough and Rosenbloom, 2002; Teece, 2010; Zott et al., 2011) because it delimits the possible

applications of the technology (Chesbrough and Rosenbloom, 2002). Business model innovation, nevertheless, unlocks the potential of new technologies, technological knowledge, and non-technological knowledge, breaking the constraints of old business models. Thereby, new opportunities are opened up for the application, generation, and exploitation of technology and knowledge, allowing the achievement of profits that would be unthinkable in the old business model.

Furthermore, from a different viewpoint, Chesbrough (2007) highlighted the importance of adopting new open business models, which enable the use of internal and external innovation sources. Nonetheless, the influence of relevant new or significantly improved business models on the generation of other innovations is much more wide-ranging and important, as can be deduced from the results obtained. This kind of business model, besides influencing exploited sources of innovation, also influences first, the stock of resources and capabilities (available for innovation) in the company, and second, how resources, capabilities, and knowledge are used and combined. Hence, a relevant business model innovation has implications for the entire innovation process; in fact, innovation process takes place in a business model. Thus, the context of generation, acquisition, and application of knowledge in firms is determined by the business model. Accordingly, it is possible to assert that business models constitute a systematic and coherent framework for innovation.

In addition, Teece (2010) recognized the existence of barriers to the imitation of a business model, stressing that competitively relevant business models are the most complex, which prevents their replication. It follows that if technologies and knowledge generated, applied, and exploited in a business model are not fully replicable in another business model, relevant business model innovation influences the generation of other successful innovations. This is vital for the hotel industry and tourism industry because companies in these industries mainly apply technologies developed by companies outside these industries that are usually commercialized for all hotel companies or tourism firms. Thus, a hotel company or a tourism firm can achieve successful incremental and radical innovations, even with knowledge and technology available to competitors. In other words, relevant business model innovations are important in the generation of technological innovations and non-technological innovations, while

offering some degree of defense against imitation and exploitation of these innovations by competitors with different business models.

On the other hand, business concept innovations are a type of innovation rarely addressed in the literature. Hamel (2001) argued the importance of this type of innovation by recognizing its potential to completely change companies and industries, leading to a profound and important transformation. The significant conceptual change in the perception and understanding of business that involves business concept innovation is related to the subsequent achievement of radical innovations and incremental innovations. However, the findings of this study indicate that business concept innovation must be used in business model innovation in order to have a great impact on incremental innovations and radical innovations.

Ardichvili et al. (2003) and Hedman and Kalling (2003) note that business concept limits the identification of market opportunities. Drejer (1997), Drucker (1985), and Schumpeter (1934) point out that in the innovation process, the options identified in the phases of conception, invention, and exploitation limit achievable outcomes. In this regard, relevant business concept innovation enables the identification of new options in the conception, invention, and exploitation of innovation, as well as in the identification of market opportunities that innovation exploits; that is, it provides a new logic on how knowledge could be combined and applied in the business. Thus, relevant business concept innovation positively influences incremental innovation. However, in radical innovation, the identification of new patterns to combine and apply knowledge, or even the identification of new strategic options, is not enough. This high degree of novelty innovation also requires a relevant business model innovation, if it is to take advantage of new options offered by business concept innovation. In other words, the new or significantly improved logic that involves a business concept innovation is not applied to its full extent, if it is not put into practice through a business model innovation. Specifically, relevant business concept innovation only influences successful radical innovation if it is used in the generation of relevant business model innovations. Here, as Amit and Zott (2001), Magretta (2002), Morris et al. (2005), Osterwalder et al. (2005), and Teece (2010) underscore that a business model articulates a business logic (a business concept), it may make sense that business concept innovation cannot influence radical innovation and its full effects are not brought to bear on incremental

innovation because the context for innovation that provides the business model is based on an old business concept. Therefore, business model innovation is mediating the relationship between business concept innovation and incremental and radical innovation.

Also, given the widespread acknowledgement in the literature of the relationship between business model and business concept, even to the point of using the terms as synonyms (see DaSilva and Trkman, 2014), it should once again be emphasized that the business model is a specific configuration of the system of creation, delivery, and capture of value and business concept is a mental model – a notion – about the business. In the review of the literature, strategy, business model, and business concept were detailed as distinct terms, although with relationships between them; so this research seeks to delve into the innovation strategy in relation to business model and business concept, although the relationships between these three terms are still unknown terrain. This task poses significant challenges, but may also unlock promising possibilities and lead to increased knowledge about management and to the integration of theoretical issues that have been separated to date.

In this vein, the position of Amit and Zott (2001), Magretta (2002), Morris et al. (2005), Osterwalder et al. (2005), and Teece (2010) stating that a business model articulates a business concept, can be expanded in reference to innovation. Business concept innovation significantly and positively influences business model innovation. In particular, competitively relevant business concept innovation is a key pillar in the generation and implementation of competitively relevant business model innovations. Hence, the empirical results point to the central role of the business concept in the business model, even in its evolution, so both terms should never be confused. This means that business concept innovations are only innovations in mental models that determine perceptions, because the conception of a new or significantly improved value proposition is not synonymous with putting it into practice; however, business model innovations put new or significantly improved value propositions into practice. Similarly, a new or significantly improved logic changes the conception of how value is created, captured, and delivered. That being said, the manner in which value is created, captured, and delivered does not change completely until the creation of a new or significantly improved business model.

Business concept innovations have great potential for completely changing companies and industries (Hamel, 2001). Nonetheless, the results obtained in this study show that the generation and application of business concept innovation is not enough to completely change a firm or industry; business model innovation is also needed.

Relevant business concept innovation positively affects successful incremental innovation, although with the mediation of relevant business model innovation, relevant business concept innovation has a higher and positive effect on successful incremental and radical innovation. In this way, business concept innovation provides new trajectories outside the range of trajectories considered possible in existing business concepts, providing defense against imitation of the trajectory in which innovation is generated and exploited. This is due to the following two factors: 1) the exploitation of ICTs occurs in a specific trajectory, as well as knowledge (Stamboulis and Skayannis, 2003), or any other technology; 2) even the generation and application of knowledge and technology are encapsulated in trajectories.

Finally, the innovation pattern of hotel firms and tourism firms – as well as other service firms – is detailed in the literature as suppliers-dominated (Castellacci, 2008; Evangelista, 2000; Evangelista and Savona, 2003; Orfila-Sintes et al., 2005; Pavitt, 1984). It should be noted here that this is actually referring only to technological innovation as result of technological and scientific progress. This might give a false image of the innovation in these firms because, firstly, non-technological innovations are much more common – in tourism and other services – than technological ones, and secondly, innovation is not exclusively the result of technological and scientific progress. Of course, firms outside the tourism sector are the main developers of new technologies or new scientific knowledge, but as Schumpeter (1934) explained: (1) the generation of new knowledge is not limited to scientific and technological progress; (2) technology and knowledge for their generation do not involve the achievement of innovations; and (3) technology and knowledge must also be applied and introduced in the market. Tourism and hotel firms can apply technology and knowledge in their business in specific ways, and subsequently, bring it to market, which would let them achieve innovations. Here, the obtained results highlight that previous studies (focusing on general, basic or narrow perspectives) may lead to erroneous approaches. In the hotel

industry, tourism industry, and other service industries, innovation depends primarily on companies operating in these industries, as well as on business model innovation and business concept innovation. Innovation is a critical issue for competitiveness (Schumpeter, 1934), even in the hotel and tourism companies. Managers must make innovation a top priority and not delegate or task its achievement to others. Consequently, innovation does not only involve the acquisition of external innovations, but rather the generation of internal innovations, although both are important for every firm.

Nonetheless, if external innovations are acquirable or imitable by others firms, any competitive advantage obtained quickly disappear. An innovation allows a competitive advantage until its generation, acquisition, or replication by other firms, or if it is replaced by other innovations. Therefore, in internal innovation, the reason behind the rapid competitive advantage erosion lies in how easy it is for another tourism firm to acquire or generate the necessary technology and knowledge, and to apply them in the same way. If scientific knowledge and technological knowledge are available to other firms, then, only other unavailable knowledge or knowledge application could allow for innovation protection. Nevertheless, if knowledge or technology is generated and applied in the same way as competitors, it could probably also be easily imitated, preventing successful innovation (in which competitive advantage does not dissipate quickly). Business model innovation and business concept innovation meanwhile are important examples of internal innovation, and also show how the generation and exploitation of successful internal incremental and radical innovations are possible in the hotel industry.

6. Conclusions and implications

Business concept innovation and business model innovation allow bright ideas to be brought into the tourism sector. These new ideas completely transform "how to do" and "what to do" in a business, but both business concept innovation and business model innovation are required. McDonald’s transformed the idea of what a restaurant is and what it does, building up restaurants business based on a properly interrelated business concept innovation and business model innovation. At the same time, some of the

innovations achieved by this firm are specific to its business model and business concept, because McDonald's applies knowledge and technologies in the specific manner determined by its business perception and business configuration. Walmart, IKEA, Inditex, and Southwest are other example of firms in which business model innovations and business concept innovations are driving their success. Likewise, these innovations are also used and exploited by many tourism firms – airlines, hotels, restaurants, etc. However in the tourism industry, in order to deliver a coherent value proposition to the customer, the exploitation of these innovations might require that other firms operating in a tourism destination adopt a similar or compatible business model and business concept. Therefore, the exploitation of a business model innovation or a business concept innovation might have implications for other firms that provide other related services to the customer in a tourism destination.

These two innovations provide to the service studies and tourism studies with another point of view on what innovation is and where it comes from, complementing a view restricted to scientific and technology progress. In other words, innovation is mainly the application of knowledge to meet customer needs, where it is the result of what knowledge is applied and how it is applied. All this determines how a bright idea is put into practice. Indeed, innovation is more than technological and scientific progress, it is new ideas related to a firm's business, rethinking a firm's business, and finding new unexplored ways of how to run that business. Further, a new technology by itself is not an innovation, but its implementation in a specific sense is which provides product, process or organizational innovations.

Non-technological and technological innovations are important for tourism and hotel firms' competitiveness. However, most innovations in tourism and hotel firms are non-technological. In this respect, relevant business model innovation and relevant business concept innovation, on the one hand, are a way to achieve sustainable competitive advantages, and on the other hand, positively influence in the obtaining of other technological and non-technological incremental and radical innovations. Furthermore, these two innovations provide protection for these other innovations against imitation from other business models or business concepts. Both innovations thereby affect successful incremental and radical innovations.

Innovation might be a useful tool for increasing tourism firms' competitiveness, but it requires sector specific knowledge progress, which makes relevant business model innovations and relevant business concept innovations possible.

In fact, a competitive advantage in hotel and tourism firms is not possible with a new technology or knowledge that is accessible (acquirable or imitable) and applicable in the same manner for everyone. But it is possible, if technology or knowledge is not generable, acquirable, and replicable, or if it is applicable or assemblable with other technology or knowledge in a completely different way than competitors. Business model innovation and business concept innovation, together, provide a new context and new paths for the generation, combination, application, and exploitation of technology and knowledge in order to better meet customer needs, as well as protection against imitation. In addition, Information and Communication Technologies (ICTs) are probably the technologies that have contributed most to technological innovation in tourism. Thus, the protection of advantages generated by such technological innovations becomes a critical issue for the success, survival, and growth of every tourism firm.

Therefore, tourism development – including hotel development – is driven by these two innovations "per se", as well as their role in the generation of other incremental or radical innovations that involve the achievement of competitive advantages.

Many innovation opportunities might come from outside the tourism sector, but it is important to not forget that tourism firms have several options through which they can achieve innovations using their knowledge base, as well as their sector-specific knowledge in combination with external knowledge. Moreover, external scientific knowledge and technological knowledge is applied in the hotel business through hotel firm business models and business concepts. This means that technological and scientific knowledge is applied internally in the firm, following the requirements of hotel business models and business concepts, which determine the ways in which technological knowledge and scientific knowledge are applied, or even what knowledge can be applied. The innovation process does not end with the creation of new technologies, knowledge, or inventions, but with the application of these discoveries to better meet the needs of customers. Herein lies an important implication for companies that support their innovation processes mainly through external sources: innovation and

firm competitiveness lie not in resources, capabilities, knowledge, or technologies acquired, "per se", but in the use and application made of them. In essence, innovation is no stranger to any economic activity, but how it occurs and its implications vary considerably across industries.

Business model innovation and business concept innovation are highly complex and risky, making their replication by others difficult, especially when both innovations are interrelated. Managers of other firms do not have a thorough understanding of the new business concept and the new business model (or of all their strategic implications) adopted by a competitor. This is due to the effects of business concept innovation on business strategy and business model innovation with respect to strategic implementation. Moreover, these innovations have strategic implications for achieving or sustaining competitive advantages over competitive forces and for understanding customer needs. Both innovations are key for explaining how business strategy takes form and operates. Thus, in innovation strategy, business model innovation and business concept innovation affect successful incremental and radical innovations mainly through the generation, acquisition, combination, application, and exploitation of knowledge, as well as by making it more difficult to imitate these innovations. But successful incremental and radical innovations are even more difficult to copy or imitate by competitors if they are based on business concept innovations and on business model innovations resulting from the implementation of business concept innovations. Business concept innovation changes the business logic and patterns of knowledge generation, acquisition, application, and exploitation; and business model innovation provides a new or significantly improved context – based on business concept innovation – for knowledge generation, acquisition, application, and exploitation.

Relevant business concept innovations affect only the achievement of successful incremental innovation and relevant business model innovation. Relevant business concept innovations have to be implemented in business model innovations to have a statistically significant effect on successful radical innovation. In essence, the effect on incremental and radical innovations increases considerably when business concept innovation is used in business model innovation. Otherwise, the effect of business concept innovations on the generation and exploitation of innovations in the firm is limited.

So a business concept innovation as a mental model transformation opens the door for new perceptions regarding how resources and capabilities might be used, combined, and exploited (very different from current patterns), providing a new amalgam of innovation opportunities. However, to take full advantage of this innovation, its implementation in a business model innovation is required.

The effect of business concept innovation on business model innovation is positive and high, implying that relevant business concept innovations are the base on which to build up relevant business model innovations. In essence, business model innovation based on innovative business concepts opens the door for numerous innovations – which follow a context, a logic, and patterns that are not obvious or easily understandable by other firms. This is the reason for the success of many companies which do not focus on the creation of new scientific or technological knowledge, but rather, on new ways of applying existing scientific or technological knowledge. These companies also create knowledge, but it is mainly non-scientific or non-technological knowledge.

With respect to the creation, capture, and delivery of value in firms, the business concept acts on how the creation, capture, and delivery of value are conceived, determining what can be envisioned or be accommodated in the business by limiting a universe of unlimited possibilities. Meanwhile, the business model determines how value is created, captured, and delivered to the customer, and how innovation is used to meet the customer needs. Therefore, business model innovation has implications on the innovations that can be generated and exploited in a firm, and business concept innovation has influence on the conceivable innovations in a firm, starting from the process used for generating new ideas and extending to the commercialization of inventions. These two innovations act on creating, delivering and capturing value in the business, but also on the value that can be created, delivered, and captured from subsequent innovations.

In closing, while this study focuses on tourism firms – specifically on hotel firms –, the results and conclusions drawn have been discussed in a more general sense so that they can be extrapolated to other industries. Other service sector firms or manufacturing firms may concentrate on achieving technological innovations, but this does not mean

that they cannot take advantage of non-technological innovations, such as business model innovation and business concept innovation. Several studies have highlighted the importance of the business model in the success of companies like Intel (Eisenhardt and Sull, 2001), Yahoo (Rindova and Kotha, 2001), Xerox (Chesbrough and Rosenbloom, 2002), and Dell (Teece, 2010), showing not only the importance of business model innovation, but also showing that, in relation to the results obtained, the achievement of successful innovations in these companies is not a coincidence. However, it is important to take into account the substantially different character of the innovation activities and innovation process between industrial firms and service firms, as well as between technological developers and non-technological developers, which is reflected in their respective business models. Therefore, the features of the hotel industry – such as close interaction with clients, close interaction between production and consumption (coterminality), high information content in services, and the importance of the human factor – should be take into account when seeking to extrapolate the results and conclusions obtained to other service or manufacturing firms.

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