UNIVERSIDAD POLITÉCNICA DE VALENCIA

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MODELO PARA LA DETERMINACIÓN DEL LEAKAGE EN EL SECTOR TURÍSTICO HOTELERO DE LA COMUNIDAD VALENCIANA

TESIS DOCTORAL

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A mi familia

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"When you make the finding yourself – even if you're the last person on Earth to see the light – you'll never forget it."

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Resumen

El turismo es un sector importantísimo en el desarrollo económico de cualquier país. Ello se deriva fundamentalmente, además de por ser la mayor industria del mundo, por su efecto multiplicador sobre otras industrias. Sin embargo no se ha de olvidar que no todos los ingresos derivados del turismo permanecen en el destino turístico. El leakage estudia precisamente la cantidad de ingresos producidos por el turista que no se quedan en el destino. Este fenómeno se da especialmente en países emergentes, donde el menor desarrollo industrial local incrementa la dependencia de países extranjeros. Algunos autores han descrito la importancia del leakage de forma cualitativa sin llegar a proponer métodos cuantitativos.

En esta tesis se propone un modelo matemático para calcular el leakage producido en el sector hotelero y se valida empíricamente para el caso de la Comunidad Valenciana. Adicionalmente, la investigación demuestra que el nivel del leakage de una determinada empresa afecta directamente a la satisfacción de los clientes y empleados así como al crecimiento y la rentabilidad de la empresa. Estos resultados son muy interesantes para las empresas turísticas y para las regiones en general ya que les permite calcular cuál es su nivel de leakage.

Asimismo la tesis incide en la necesidad de reducir los niveles de leakage con el objetivo no solo de aumentar la satisfacción de empleados y clientes sino además para construir un modelo con mayor sostenibilidad que potencie las economías locales y que sobre todo ayude a las regiones en desarrollo.

Los resultados mostrados en la tesis ponen de manifiesto que el nivel de leakage en los hoteles se ha de reducir por los motivos mencionados anteriormente, por lo que se hace patente la necesidad de buscar nuevos modelos de negocio que posibiliten la reducción del nivel de leakage.

Tras estudiar las posibles soluciones al problema del leakage propuestas en la literatura existente, en este trabajo se proponen como medidas o herramientas las basadas en el aprovechamiento del capital humano. De este modo, la segunda parte de esta tesis doctoral profundiza en el concepto de Crowdsourcing, y se muestran ejemplos prácticos que definen qué tipo de

medidas se han de tomar con el objetivo de mejorar la productividad en las áreas de negocio a través de la cadena de valor en los hoteles.

Resum

El turisme és un sector importantíssim en el desenvolupament econòmic de qualsevol país. Això es deriva fonamentalment, a més de per ser la major indústria del món, pel seu efecte multiplicador sobre altres indústries. Però no s'ha d'oblidar que no tots els ingressos derivats del turismees queden a la regió local. El leakage estudia precisament la quantitat d'ingressos produïts pel turista que no es queden al país de destinació. Aquest fenomen es dóna especialment en països emergents, on el menor desenvolupament industrial local incrementa la dependència de països estrangers. Alguns autors han descrit la importància del leakage de forma qualitativa sense arribar a proposar mètodes quantitatius.

En aquesta tesi es proposa un model matemàtic per calcular el leakage produït en el sector hoteler i es valida empíricament per al cas de la Comunitat Valenciana. Addicionalment, la investigació demostra que el nivell de leakage d'una determinada empresa afecta directament a la satisfacció dels clients i empleats així com al creixement i la rendibilitat de l'empresa. Aquests resultats són molt interessants per a les empreses turístiques i per a les regions en general ja que els permet calcular quin és el seu nivell de leakage.

Així mateix, la tesi incideix en la necessitat de reduir els nivells de leakage amb l'objectiu no només d'augmentar la satisfacció dels empleats i clients sinó a més per construir un model amb major sostenibilitat que potència les economies locals i que sobretot ajude a les regions en desenvolupament.

Els resultats mostrats en la tesi posen de manifest que el nivell de leakage en els hotels s'ha reduir pels motius esmentats anteriorment, pel que es fa palesa la necessitat de buscar nous models de negoci que possibiliten la redución del nivell de leakage . Després d'estudiar les possibles solucions al problema de l'leakage propostes en la literatura existent, en aquest treball es proposen com a mesures o eines les basades en l'aprofitament del capital humà. D'aquesta manera, la segona part de la tesi doctoral aprofundeix en el concepte de Crowdsourcing, i es mostren exemples pràctics que defineixen quin tipus de mesures s'han de prendre amb l'objectiu de millorar la productivitat en les àrees de negoci a través de la cadena de valor en els hotels.

Abstract

Tourism is an important sector in economic development of any country. This is essentially derived, in addition to being the largest industry in the world, because of its multiplier effect on other industries. However not all tourism revenues remain in the local region. The leakage studies precisely the amount of revenue generated by tourists who do not stay in the destination country. This phenomenon occurs especially in emerging countries, where lower local industrial development increases the dependence on foreign countries. Some authors have described the importance of leakage qualitatively but they do not propose any quantitative methods.

This thesis proposes a mathematical model to calculate the leakage produced in the hotel sector and validated empirically for the case of the Comunidad Valenciana. Additionally, this research shows that the level of leakage of a particular company directly affects the satisfaction of customers and employees as well as the growth and profitability of the company. These results are very interesting for tourist business and regions in general and to position them to consider this concept and allow them calculating their level of leakage.

This thesis also highlights the need to reduce leakage levels with the aim not only to increase the satisfaction of employees and customers but also to build a more sustainable model that empowers local economies and help especially the developing regions.

Results obtained in this thesis show that the level of leakage in hotels has to be reduced for the reasons mentioned above, so it is evident the need to find new business models that enable the leakage level reduction. After studying the possible solutions to the problem of leakage proposed in the literature, in this thesis we propose such measures or tools based on the use of human capital. Thus, the second part of this thesis explores the concept of Crowdsourcing, and gives practical examples that define what kind of action is have to take in order to improve productivity in the areas of business through the value chain in hotels.

Capítulo 1
Introducción General

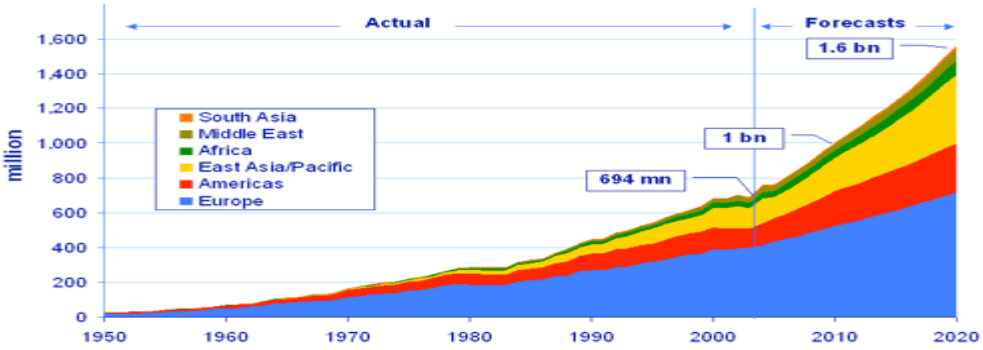
Antecedentes y objetivos de la investigación

La importancia del turismo en la economía está ampliamente reconocida desde hace varias décadas (Wanhill, 1994). El turismo está considerado actualmente como la mayor industria del mundo (Chu, 2008, Mbaiwa, 2005), y una de las actividades económicas con mayores ratios de crecimiento en las últimas décadas (Capó et al., 2007; Chu, 2008). Tanto es así, que la evolución de las llegadas de turistas internacionales y los resultados de renta provenientes del sector muestran una creciente participación de la industria en indicadores tales como la producción y el empleo alrededor del mundo (Capo et al., 2007:709).

La evolución del sector y su influencia es vital, y no sólo desde el punto de vista económico, sino también para el desarrollo de las diferentes regiones. Es constatable que el turismo juega un rol significativo en el desarrollo de muchos países, convirtiéndose en "una fuente importante de actividades de negocios, contribuyendo a la renta y la generación de empleo" (Jang and Chen, 2008:761). El sector es reconocido por ser la mayor fuente de ingresos internacionales y el mayor propulsor del crecimiento económico y la creación de empleo, especialmente en mercados emergentes, (Baimai y Daniel, 2009). Además, el sector turístico ha experimentado un considerable crecimiento en las últimas dos décadas (Chu, 2008), y de acuerdo al "World Tourism Barometer, su tendencia de crecimiento ha incrementado continuamente y es probable que lo siga haciendo en el futuro, esencialmente en los países emergentes. Por ejemplo, atendiendo a datos de la Organización Mundial del Turismo, se espera que existan en el año 2020 1,6 millones de turistas, de los cuales, las mayores regiones de recepción serán Europa (717 millones de turistas), Este asiático y Pacífico (397 millones), y América (282 millones), seguidos de África, Medio Este y Asia del Sur, con crecimientos promedios anuales del 4% a nivel mundial, que se acentúa en países emergentes, con más de un 5% de crecimiento anual en África o más del 6% en las tres regiones asiáticas y del Pacífico.

Destacan en este sentido tanto el incremento y desarrollo de empresas meramente turísticas tales como restaurantes, cadenas hoteleras, o incluso constructoras, que tras su desarrollo inducido por el crecimiento turístico, y el conocimiento de los patrones y gustos de estos turistas, han iniciado su expansión internacional; como también de empresas de producción de todo tipo de productos, expuestos a los turistas en los destinos.

Figura 1: UNWTO's Tourism 2020 Vision forecasts



Fuente: http://www.unwto.org/facts/menu.html

Específicamente, debemos prestar especial atención a los efectos multiplicadores de los gastos generados por los turistas, por su filtración a través de la economía y el estímulo que provocan en otros sectores sobre todo en los países emergentes. Como consecuencia de ello, esta contribución positiva "está ofreciendo una explicación a por qué las comunidades apoyan su desarrollo" (Andereck et al., 2005; Capó et al., 2007:710).

"El desarrollo del turismo en general, se ha considerado una contribución positiva al crecimiento económico" (Dritsakis, 2012, p. 801). De este modo "los visitantes de un destino turístico gastan dinero en la compra de bienes y servicios, creando impactos económicos" (Klijs et al, 2012, p. 1176), lo cual provoca que en muchos lugares "la creciente industria del turismo se ve como una posible solución a cuestiones tales como bajas tasas de empleo o la necesidad de generación de ingresos más altos para el gobierno "(Rid et al, 2014, p. 102).

Como ha quedado patente, el turismo es utilizado por los países como motor para su desarrollo, sin embargo, éste desarrollo se ha de realizar de forma

sostenible. Mbaiwa (2005) manifiesta que en los países en los que son los países extranjeros quienes dominan la industria turística, la contribución al PIB de las economías locales se ve muy reducida. Esto se explica porque la reserva y los pagos por los servicios turísticos se realizan en los propios países extranjeros. Así pues, se debe evaluar quién domina las principales empresas turísticas (agencias de viaje, canales de internet, tour-operadores…etc.) y qué cantidad de productos consumidos por los turistas son importados. Torres (2003:567) manifiesta que el desarrollo turístico a menudo está asociado con una demanda creciente de productos importados, hecho que resulta en una filtración a la economía de los países de origen y una competencia con los productores locales.

El leakage, se define como todos aquellos ingresos obtenidos por causa del turismo que no se quedan en la región visitada (productos importados, tasas, proveedores extranjeros, etc.) (Lejarraga & Walkenhorst, 2010). Dicho de otro modo, el leakage sería "la dificultad que tienen las economías locales en hacer que el gasto turístico permanezca en ellas" (Sandbrook, 2010). Pese a que el concepto de leakage es habitual en otros sectores, es precisamente en la industria del turismo donde adquiere mayor relevancia, debido a que el turismo es uno de los sectores más importantes para el desarrollo económico de una región (Mowforth & Munt, 2003).

El problema radica en que solamente una pequeña porción del valor productivo del sector turístico permanece actualmente en la región local, y mucho del gasto turístico se vuelve hacia la región de origen (por ejemplo cuando un turista compra productos importados) o bien nunca sale del país de origen (es el caso de las comisiones de las agencias de viaje, tour-operadores o impuestos de las líneas aéreas). Este fenómeno se hace más relevante en las economías de los países en vías de desarrollo. Estos países tienen muchas dificultades para tener proveedores locales lo que hace que tengan que importar grandes cantidades de productos y por tanto el leakage aumente notablemente. Se estima que el 55% de los ingresos por turismo en países emergentes no se queda en el país (Boo, 1990). Los niveles de leakage, por tanto, están relacionados con la capacidad de suministro que los países tienen (Mbaiwa, 2005; Simpson and Wall, 1999), siendo los países en desarrollo y áreas rurales los más perjudicados (Torres 2003). Del mismo modo, Supradist (2004) argumenta que los países en desarrollo y las islas son los más expuestos a sufrir el leakage.

Pese a la importancia que el fenómeno del leakage adquiere en el desarrollo turístico de una determinada región, la literatura existente acerca del leakage como factor económico no es muy extensa. Además, dentro de esta literatura predominan los métodos cualitativos para la definición del leakage, siendo su medición cuantitativa prácticamente inexistente. Para intentar mejorar este hecho, uno de los aportes fundamentales que ésta tesis doctoral realiza a la literatura existente es la propuesta de un modelo matemático que permita el cálculo del Leakage de forma cuantitativa.

Así pues, viendo por una parte el potencial que el sector turístico tiene sobre el desarrollo de una determinada región y por otra la problemática existente con el fenómeno del leakage, se hace necesario en este punto buscar un equilibrio que nos lleve a un turismo sostenible. Hoy en día, la industria del turismo se enfrenta a continuas transformaciones que son esencialmente consecuencia del impacto de las nuevas tecnologías, y también de las distintas presiones que el crecimiento del turismo está provocando en varios ambientes.

Al concentrarse en este aspecto, la importancia de la sostenibilidad ha sido abordada por todas las principales organizaciones relacionadas con el turismo, tales como las Naciones Unidas, el Banco Mundial, la Organización Mundial del Turismo (OMT), el Travel & Tourism Council Mundial (WTTC), y el Fondo Mundial para la Naturaleza. Según Saarinen (2006), "el término y la idea de la sostenibilidad se transfirió al turismo de la ideología del desarrollo sostenible tras la publicación del informe de la Comisión Brundtland" Nuestro Futuro Común "en 1987, que define el desarrollo sostenible como un proceso que cumpla con la necesidades de las generaciones actuales sin poner en peligro la capacidad de las futuras para satisfacer sus propias necesidades (WCED, 1987).

Sin embargo, el turismo sostenible es un concepto multifacético que abarca aspectos sociales, económicos, ecológicos, culturales, perceptivos, psicológicos, éticos, físicos y políticos, entre otros "cada uno con diferentes implicaciones" (Saarinen, 2006, p. 1125). Además, la sostenibilidad se relaciona con varios factores, como la intensidad del desarrollo, la velocidad de crecimiento del turismo, el marco ambiental, y la medición del desarrollo económico en las diferentes regiones (Garrigós et al, 2004).

Pese a que el concepto de turismo sostenible es muy amplio y abarca diversos campos, hemos centrado nuestro estudio en el ámbito económico.

Como Carbone (2005, p. 560) señala, "la sostenibilidad económica se refiere a la renta adicional proporcionada por los ciudadanos para compensarles por la carga que la presencia de turistas puede causar". Por otra parte, podemos definir la sostenibilidad económica de crecimiento del turismo como las mejoras económicas netas para la economía local que el desarrollo turístico puede producir a largo plazo, teniendo en cuenta todos los diversos impactos que afectan a los diferentes sectores e industrias de la economía local.

Así pues, en esta tesis doctoral se propone una forma de medir el desarrollo económico sostenible de una región mediante el cálculo de su nivel de leakage. De hecho, se considera que una economía cuyo nivel de leakage es alto, debe concentrarse en la reducción de este nivel antes de aumentar el crecimiento en el turismo, ya que de no hacerse, no se estarían aprovechando los recursos óptimamente para la economía local.

Por tanto estamos ante un nuevo paradigma que cambia las reglas del juego de las empresas turísticas quienes deberán adaptarse a un entorno complejo y diverso al que deberán hacer frente mediante nuevos modelos de negocio.

Por tanto presentado el problema que el leakage produce en los sectores turísticos, se debe profundizar en cuáles son las posibles soluciones a tal efecto y de que manera se debe trabajar para hacer un turismo más sostenible.

Como se ha comentado anteriormente, el concepto de leakage no ha sido investigado excesivamente por lo que no existen en la literatura demasiadas propuestas sobre las posibles soluciones para reducir los niveles de leakage. De entre las propuestas que se han revisado en la investigación de esta tesis doctoral, se ha encontrado que las soluciones mas relevantes pasan por fomentar los vínculos entre las empresas locales para que formen un fuerte tejido empresarial. Estos vínculos se deben crear potenciando la participación de todos los actores involucrados, ya sean directivos, empresarios, emprendedores, legisladores, etc.

Además de la participación activa, otro de los pilares fundamentales en los que los nuevos modelos de negocio se han de basar, es en las nuevas tecnologías. La industria turística hoy en día hace un uso intensivo de las tecnologías de la información y la comunicación (TIC) (O'Connor, 1999).

De este modo, si entendemos que los nuevos modelos de negocio necesarios para reducir los niveles de leakage y avanzar hacia un turismo más sostenible son los basados en la participación activa y en las nuevas tecnologías, llegamos directamente a encontrarnos con el concepto de Crowdsourcing. El Crowdsourcing se basa en al aprovechamiento, por parte de empresas e instituciones, de la participación de comunidades como fuentes de trabajo, recursos económicos o creatividad (ideas y conocimientos) y tiene sus cimientos en las nuevas tecnologías e Internet. En esta tesis se presentarán como solución a los problemas acarreados por el leakage las basadas en Crowdsourcing como se verán en sucesivos apartados.

Tras esta introducción a la situación actual y tras identificar algunas problemáticas actuales a las que esta tesis pretende dar respuesta, se identifican los siguientes objetivos para la investigación:

1. Realizar un profundo análisis de la literatura existente en cuanto a los impactos económicos en turismo, concretamente el fenómeno del leakage.
2. Establecer un modelo matemático para el cálculo del leakage en los hoteles.
3. Validar el modelo empíricamente para el caso de los hoteles de la Comunidad Valenciana.
4. Comprobar que el leakage afecta directamente a las empresas hoteleras en términos de satisfacción y rentabilidad.
5. Definir el concepto de Crowdsourcing a nivel teórico.
6. Analizar los casos en que puede utilizarse el Crowdsourcing a lo largo de la cadena de valor del sector hotelero.
7. Estudiar cómo las técnicas de Crowdsourcing pueden ayudar a reducir los niveles de leakage.

A todos ellos se dará respuesta a lo largo de la presente tesis.

Estructura de la tesis

En primer lugar cabe destacar que se trata de una tesis por compilación de artículos científicos. Cada uno de ellos puede ser leído autónomamente al tener los aspectos necesarios para su comprensión (marco teórico, objetivos, resultados y conclusiones), pero es importante recalcar que la unión de todos ellos constituye un solo trabajo con un claro hilo argumental.

Así pues la tesis se estructura en 4 capítulos:

1. Introducción general
2. Publicaciones
    2.1. The economic sustainability of tourism growth through leakage calculation
    2.2. Leakage, entrepreneurship, and satisfaction in hospitality
    2.3. Crowdsourcing as a competitive advantage for new business models
    2.4. Improving hotel industry processes through crowdsourcing techniques
    2.5. From Leakage to Crowdsourcing: a model for enhancing the local participation
3. Discusión de los resultados
4. Conclusiones

El capítulo de introducción general, **capítulo 1**, pretende contextualizar el documento completo de la tesis para permitir al lector el acceso directo a la información de su interés. Como se ha visto, en el primer apartado se expone la situación actual del fenómeno del leakage, y se enumeran los objetivos a los que esta tesis doctoral pretende dar respuesta. En segundo lugar se expone la estructura de la tesis completa y se explica el hilo argumental que siguen los artículos y cómo responden a las preguntas y objetivos planteados inicialmente.

El cuerpo principal de la tesis está compuesto por el **capítulo 2**, que como se ha visto en la enumeración previa recogen los cinco artículos ya aceptados por revistas científicas.

El **primer artículo** se titula “The economic sustainability of tourism growth through leakage calculation”. Este artículo se ha publicado en la revista

"Tourism Economics". Esta revista está soportada por Thomson Reuters en el Social Sciences Citation Index (SSCI) y Current Contents / Ciencias Sociales y del Comportamiento. Su Factor de impacto en los últimos 5 años ha sido de 0,573. En el año 2013 su Factor de impacto ha sido de 0.901. (2013 Journal Citation Reports Ciencias Sociales Edición, Thomson Reuters, 2014). Esta revista se publica trimestralmente y cubre los temas del negocio de turismo en el contexto más amplio. Tiene en cuenta las limitaciones en materia de desarrollo, tales como los intereses sociales y comunitarios y el uso sostenible de los recursos turísticos y de ocio. Los artículos publicados en esta revista abordan los componentes del producto turístico (alojamiento, los restaurantes, merchandising, transporte, y otras actividades turísticas; entretenimiento); y la organización económica del turismo en los niveles micro y macro (estructura del mercado; papel de los sectores público/privado; intereses de la comunidad, planificación estratégica, finanzas y desarrollo económico). Todos los artículos de esta revista se han sometido a una rigurosa revisión por pares, basado en el cribado inicial y arbitraje de doble ciego de dos evaluadores anónimos internacionales.

Este primer artículo, profundiza en la idea de que el crecimiento del turismo depende en gran forma de su sostenibilidad a lo largo del tiempo. Sin embargo, el cálculo de la sostenibilidad en turismo no es una tarea fácil. En el artículo se realiza una profunda selección de las principales variables o indicadores económicos que afectan al leakage, basada en la literatura existente. A partir de estas variables, y tras definir cualitativamente las variables que inciden en el leakage, se presenta como parte central del artículo, un modelo matemático que analiza cuantitativamente el leakage existente en el sector hotelero. Este modelo queda validado a través de los datos obtenidos tras un cuestionario realizado a 204 gerentes de hoteles en la Comunidad Valenciana, España. Este trabajo abre nuevas áreas de investigación en la sostenibilidad, ya que proporciona orientaciones de gran valor para los managers de turismo y para los gobiernos en sus tareas para implementar políticas de desarrollo turístico apropiadas.

El **segundo artículo** se titula "Leakage, entrepreneurship, and satisfaction in hospitality". Este artículo ha sido publicado en la revista Services Industries Journal. El Service Industries Journal, es una revista internacional de gestión de servicios, que profundiza en la mejora del conocimiento de las

industrias y empresas de servicios y en la gestión eficaz de los mismos. Esta revista multidisciplinaria fue creada en 1981 como la primera revista revisada por pares en el mundo dedicado a los servicios y gestión de servicios. Desde este momento se ha establecido una reputación de primera clase internacional por la calidad de sus artículos. De entre los temas publicados en esta revista resultan de especial interés los relacionados con mejores prácticas en los servicios, incluida la gestión, recursos humanos, operaciones, marketing, el espíritu empresarial, la innovación, las finanzas y los enfoques interdisciplinarios. Todos los artículos de esta revista se han sometido a una rigurosa revisión por pares, basado en el cribado inicial y arbitraje de doble ciego de dos evaluadores anónimos internacionales.

En este segundo artículo se profundiza en el fenómeno del leakage, definiéndolo a partir de los multiplicadores económicos más importantes en turismo. Tras realizar un exhaustivo estudio de la literatura del leakage el trabajo proporciona una evaluación original del entorno empresarial y crea un nuevo marco de investigación. Además, el artículo explora y muestra cómo el leakage puede afectar a factores críticos del negocio, como la satisfacción de clientes y empleados. Concretamente se presenta un nuevo modelo que relaciona una serie de variables de importancia en las empresas. Por un lado se tienen las variables de leakage divididas en leakage de proveedores y leakage de clientes. Estas variables se relacionan con variables como la satisfacción de los clientes, la satisfacción de los empleados y la rentabilidad y crecimiento de la empresa. Este modelo teórico lleva una serie de hipótesis que quedan validadas empíricamente mediante ecuaciones estructurales a partir de los datos de los hoteles de la Comunidad Valenciana (España). Los resultados confirman el nuevo modelo y son de interés para los directivos de empresas y organizaciones públicas.

El **tercer artículo** que se presenta en esta tesis es el tercer capítulo del libro Strategies in e-Business, titulado "Crowdsourcing as a competitive advantage for new business models". Este libro ha sido publicado por la editorial Springer (ISBN 978-1-4614-8184-3). Si bien los dos primeros trabajos publicados se basaban en definir y calcular el leakage para el sector hotelero, así como relacionarlo con variables importantes en el campo de la sostenibilidad, este trabajo se centra en la definición del Crowdsourcing como nuevo modelo de negocio.

El entorno actual se caracteriza por la evolución y transformación de las tecnologías de información y comunicación (TIC), la aparición de las redes sociales, y, con ella, la creciente relevancia de la participación de los clientes y otros colaboradores en el comportamiento de estas empresas. Los clientes están influyendo cada vez más el desarrollo de iniciativas de marketing en el proceso de producción de las empresas, mientras que el desarrollo de las redes sociales y comunidades en línea ha generado nuevos modelos estratégicos de negocios. Teniendo en cuenta estos hechos, este capítulo se centra en demostrar la importancia de esta participación a través del desarrollo de "Crowdsourcing". El capítulo define el concepto, analiza sus posibles usos para la mejora de las diferentes áreas de la organización, y finalmente explica el proceso de aplicación Crowdsourcing a través de una serie de pasos. El estudio es importante, ya que abre nuevas formas de negocio proporcionando un análisis práctico y ejemplos de su uso por las organizaciones.

A continuación se presenta el **cuarto artículo** que ha sido aceptado para publicación en el libro "Open Tourism" de la editorial Springer (ISBN 978-3-642-54088-2) y que lleva por nombre "Improving hotel industry processes through crowdsourcing techniques". En este trabajo se sigue profundizando en el concepto de Crowdsourcing. A partir de la definición de Crowdsourcing recogida en la anterior publicación, en este artículo se profundiza en el concepto de crowdsourcing como un elemento de innovación que define un nuevo modelo de negocio para las empresas. De este modo, tras realizar un examen minucioso de la literatura previa, se analizan ejemplos relevantes de Crowdsourcing en diferentes empresas con el fin de mejorar los diferentes procesos en la cadena de valor de la industria hotelera. Los resultados muestran que las técnicas de Crowdsourcing se pueden utilizar a lo largo de toda la cadena de valor de las empresas, ya que son útiles en la optimización de las diversas actividades de los hoteles.

El **quinto artículo** ha sido aceptado para publicación en el libro "Advances in Crowdsourcing" de la editorial Springer (ISBN a concretar) y lleva por título "From Leakage to Crowdsourcing: a model for enhancing the local participation". En este último artículo, se estudian las posibles soluciones al fenómeno del leakage y se propone una nueva solución basada en la participación activa y en las nuevas tecnologías. Esto se concreta en la utilización de las iniciativas basadas en Crowdsourcing. Este capítulo es

muy interesante ya que propone medidas para la reducción del leakage cerrando así el círculo trazado en esta línea de investigación.

A continuación, el **capítulo 3** presenta una breve discusión acerca de los principales resultados mientras que el **capítulo 4** presenta las conclusiones finales de la tesis así como el cumplimiento de los objetivos planteados.

Por último se muestra la bibliografía general utilizada a lo largo de toda la tesis, así como los **anexos**, donde se recogen los documentos más relevantes empleados durante la investigación (que obviamente no pueden ser publicados por las revistas) y las cartas de aceptación de los artículos no publicados.

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Capítulo 2
Publicaciones

The economic sustainability of tourism growth through leakage calculation

The economic sustainability of tourism growth through leakage calculation

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Abstract:

The development and growth of tourism depend on its sustainability over time and on its benefits for destinations as a whole. However, calculating sustainability is not an easy task. This article focuses on the economic sustainability of tourism growth and, after an exhaustive review of literature, proposes a quantitative mathematical model to measure it by analysing and calculating leakage in the hotel sector. Leakage analyses the amount of revenue generated by tourists that does not remain in the destination economy. Through a sample of 204 interviews with managers, this study validates the model created and calculates leakage in a mass tourism destination (the Valencian Region in Spain). The paper opens new areas of research in sustainability literature and will be of value to tourism planners and governments in their efforts to implement appropriate tourism development policies.

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The economic sustainability of tourism growth through leakage calculation

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Abstract

The development and growth of tourism depends on its sustainability over time and on its benefits for destinations as a whole. However, calculating sustainability is not an easy task. The aim of this article is to focus on the economic sustainability of tourism growth and, after an exhaustive review of literature, to propose a quantitative mathematical model to measure it by analyzing and calculating leakage in the hotel sector. Leakage analyzes the amount of revenue generated by tourists which does not stay in the destination. Through a sample of 204 interviews with managers, this study validates the model created and calculates leakage in a mass tourism destination (Valencian Region, Spain). Our paper opens new areas of research in sustainability literature and, as it provides orientations to outcomes for policy, it is of great value to tourism planners and governments in their tasks to implement appropriate tourism development policies.

Keywords: Economic sustainability of tourism, leakage, economic multipliers.

Tourism is one of the most important industries in the world and is an essential mechanism for development in many emerging markets, where the

hopes for economic improvement are firmly based on the amount of tourism revenue.

"The development of tourism has generally been considered a positive contribution to economic growth" (Dritsakis, 2012, p. 801). In this vein, as "visitors to a tourism destination spend money on buying goods and services, creating economic impacts" (Klijs *et al*, 2012, p. 1176), in many places "a growing tourism industry is seen as a potential solution to issues such as low employment rates or the need for foreign currencies and generating higher government revenues" (Rid *et al*, 2014, p. 102). In addition, tourism can produce the development and high growth of subsidiary industries, infrastructures and even social facilities that have a considerable impact on the environment and the economy. However, "negative externalities accompanying rapid tourism growth have already drawn much attention in the literature" (Sheng and Tsui, 2009, p. 630). Hence, tourism theories have recognized the key importance of managing the positive and negative externalities of tourism to ensure the competitiveness of most types of tourist destinations (Inskeep, 1991; Mihalic, 2000), and facilitate the sustainability of tourism development.

Nevertheless, economic multiplier effects in other sectors are often not as relevant as they should be due to the effects of leakage, which impedes them from being widely filtered through the economy and other sectors (Garrigós *et al*, 2000). In this vein, "multipliers from tourism typically are greatly reduced by leakage" (Haddad *et al*, 2013, p. 175), with the average of import-related leakage estimated at 40-50% for small economies and 10-20% for advanced economies (UNEP, 2005; Budeanu, 2007). Moreover, "although the tourism industry has constantly grown, developing countries have benefited less than expected because of the "leakage" problem", with the percentage of money spent in developing countries for tourism being very small in comparison (Carbone, 2005, p. 559-560).

However, leakage is difficult to observe and measure quantitatively. In this vein, few works have emphasized its measurement, due to its complexity, and the ones that have tried to do so have concentrated on qualitative mechanisms.

The aim of this article is to overcome this situation. Thus, after discussing the importance of economic sustainability and the carrying capacity of destinations, we have put forward a rigorous review of the literature on

leakage and the measurement of economic impacts, and propose a model to measure leakage in the hotel sector.

Since almost all leakage measurements in literature are qualitative, our study also contributes by creating and postulating a mathematical model based on existing qualitative models to calculate leakage, and a measuring scale or questionnaire to develop it.

In addition, we applied this questionnaire in a tourist destination in order to validate the model and to calculate the variables and weights needed for the final leakage calculation formula. We used this model and calculated leakage in a mass tourism destination, more precisely in the region of Valencia (Spain). The sample comprised data from 204 interviews with different hotel managers.

The importance of economic sustainability

Nowadays, the tourism industry is facing enormous transformations which are essentially a result of the impact of new technologies in its concept, and also of the diverse impacts and pressures that the growth of tourism is causing in diverse environments.

By concentrating on this second aspect, the importance of sustainability has been addressed by all major tourism-related organizations such as the United Nations, the World Bank, the World Tourism Organization (UNWTO), the World Travel & Tourism Council (WTTC), and the World Wide Fund for Nature. According to Saarinen (2006), "the term and idea of sustainability was transferred to tourism from the ideology of sustainable development following the publication of the Brundtland Commission's report 'Our Common Future' in 1987", defining sustainable development as a process that meets the needs of present generations without endangering the ability of future ones to meet their own needs (WCED, 1987). In this vein, the principles of sustainability are designed to make optimal use of resources whilst simultaneously protecting and enhancing them (Butler, 1999; Cawley and Gillmor, 2007; Saarinen, 2006).

However, sustainable tourism is a multifaceted concept encompassing social, economic, ecological, cultural, perceptual, psychological, ethical, physical and political aspects among others, "each having different

implications" (Saarinen, 2006, p. 1125). In addition, sustainability is related to several factors such as the intensity of development, the speed of tourism growth, the environmental framework, and the measurement of economic development in the different regions (Garrigós *et al*, 2004).

Apart from the positive impact of tourism developments, the presence of tourists can have negative externalities, and hence, as Arrow *et al* (1995, p. 520) pointed out, "imprudent use of the environmental resource base may irreversibly reduce the capacity for generating material production in the future". Nevertheless, literature must "go beyond the traditional notion of sustainable tourism, which concentrated mainly on the tourism-environment link" (Carbone, 2005, p. 564).

As Carbone (2005, p. 560) pointed out, "economic sustainability refers to the additional income provided to locals to compensate them for the burden that the presence of tourists may cause". Moreover, we can define the economic sustainability of tourism growth as the net economic improvements for the local economy that tourism development can produce in the long term, taking into account all the diverse impacts that affect the different sectors and industries of the local economy.

Nevertheless, the sustainability of tourism development in general, and in particular the economic sustainability of tourism growth, must be measured in order to be useful (Garrigós *et al*, 2004), and although the question and challenge is whether this is possible (Buckley, 1999), – authors such as Garrigós *et al* (2004) faced many problems in this area –, the measurement of the different influential factors is essential to improving planning and managerial processes, and increasing the sustainability of an area (Cooper *et al*, 1998). Measurement is particularly critical in the tourism industry, and especially when the growth and impacts of mass tourism are seen to be problematic for the environment and for the industry's future. This is particularly relevant in the mass tourism destinations on the Mediterranean coast (Saarinen, 2006), which is the case of this study.

This paper proposes a way to measure the sustainable economic development of a region by calculating its level of leakage. In fact, we consider that an economy whose level of leakage from tourism activities is high must concentrate on reducing this level before increasing growth in tourism, as this does not filter down to the rest of the economy. Kokkranikal *et al* (2003, p. 426–427) state that "a number of issues such as the fragile

environment, limitations of resources and infrastructure, vulnerability of the indigenous societies, and lack of experience and expertise in tourism development, make it very difficult... to absorb and manage the inevitable impacts of tourism", a situation that is exacerbated by "structural difficulties", which perpetuate dependency, leading to higher levels of economic leakage. At this point, the level of leakage can show the relevance of positive versus negative impacts of tourism development, as this development can produce natural capital degradation which leads to a decline in visitation (Patterson *et al*, 2008), ultimately stagnating the local economy and producing a period of steady visitor decline in the sense of the tourism destination cycle of evolution set out by Butler (1980).

The importance of leakage in tourism

Following Haddad *et al* (2013), "whether the benefits of tourism as an economic base are equivalent to those of other sectors depends on the degree of linkage within or leakage from the regional economy". The main problem of economic sustainability or economic growth is that, according to Budeanu (2007, p. 50), although the income generated by tourism is abundant it often leaks out from the region due to imports, or foreign ownership of tourist facilities. Hence, according to Sheng and Tsui (2009, p. 635), "the real tourism revenue is the amount of tourist spending that remains locally after profits and wages are paid outside the area and after imports are purchased. The amounts to be subtracted are called leakage".

Leakage can be defined as the amount of revenues generated by tourists that do not stay in the region visited (imports, taxes... etc.) (Lejarraga and Walkenhorst, 2010). It can also be defined as "the failure of tourist spending to remain in the destination economy" (Sandbrook, 2010, p. 125), or "the loss of foreign exchange and other hidden costs deriving from tourism related activities" (Cernat and Gourdon, 2005, p. 6).

Although financial leakage occurs in many industries and sectors, its relevance is critical in the tourism sector (Mowforth and Munt, 2003) due to its importance and its multiplying effects. Specifically, the economic effects of the presence of visitors in tourist destinations stem from the fact that travelers and tourists spend their money on a wide variety of goods and services. This expenditure can be seen as an injection of financial resources

into the host economy. In general, agriculture, construction, trade, hotels and restaurants, transport, water, electricity, social services and telecommunications (Mbaiwa, 2005) are those that benefit the most from the multiplying effect of tourism activities. Moreover, there is an extensive collection of studies in literature that emphasizes the importance of several tourism multiplier effects (Adams and Parmenter, 1995; Blake *et al*, 2008; Blake and Sinclair, 2003; Dwyer *et al*, 2000; Dwyer *et al*, 2006; Hughes, 1994; Pratt and Blake, 2009; Zhou *et al*, 1997).

However, the higher the leakage of a region, the lower the economic impact of tourism is, with many of these benefits not remaining in the local economy. For instance, in some regions, local residents do not obtain enough benefits from tourism development when hotel managers prefer to hire foreign workers instead of local ones (Hohl and Tisdell, 1995). In addition, sometimes only a small portion of the productive value of the tourism sector remains active in the local region, and much tourist spending returns to the region of origin (e.g. when a tourist buys imported products, or there are few taxes) or never leaves the country of origin (this is the case of fees for travel agents, tour operators and airlines) (Lejarraga and Walkenhorst, 2010).

In short, there are many factors that cause an increase in the leakage of a region. These factors correspond to several situations such as holiday planning, transportation and accommodation (Supradist, 2004). One of these situations is when foreign companies try to sell tourists all inclusive packages in order to maximize their profits. In addition, there are other factors that influence leakage such as labor, infrastructure, technology and imported goods and services (Thomas *et al*, 2005).

This phenomenon is more relevant in countries with developing economies (Mbaiwa, 2005). Oppermann and Chon (1997, p. 114) observe that "high leakages are the primary reason for the disenchanting performance of tourism in developing countries". Leakage levels are related to the supply capacity countries have (Mbaiwa, 2005; Simpson and Wall, 1999). Thus, developing countries and rural areas are the most affected regions (Torres, 2003). Similarly, Supradist (2004) argues that developing countries and islands are those most exposed to high levels of leakage. Specifically, these countries find difficulties in procuring local suppliers which means they have to import large quantities of products and thus significantly increase

leakage. In the words of Kokkranikal *et al* (2003, p. 444) "high levels of economic leakage undermine the aim of localization of economic benefits and meaningful participation of the local community in tourism".

To sum up, when leakage is important, the economic sustainability of a region is affected by this loss of benefits, and only a small portion of the productive value of the tourism sector remains in the region. Hence, when expressed as a ratio of the amount of benefits received by the local economy compared to the amount that is lost, sustainability is said to result from a positive economic balance (Mowforth and Munt, 2003), which we consider to be correctly measured with the concept of leakage.

Review of the studies and variables of leakage calculation

Nevertheless, and despite its importance, economic leakage is not often considered and many regions have overlooked it (Supradist, 2004). Some authors have discussed the economic impact of leakage in the tourism industry. However, despite the importance of this factor, few studies have been carried out so far and they have not been particularly exhaustive (Kokkranikal *et al*, 2003). Moreover, almost all the literature studies have centered on qualitative methods whilst quantitative methods are practically nonexistent. To try to improve this, our article provides an empirical approach to the calculation of leakage from a quantitative viewpoint.

Although there are few quantitative studies on leakage, some authors have described important variables in qualitative models (Akama, 2000; Asiedu, 2008; Sandbrook, 2010; Shaalan, 2005). Thus, before choosing the variables to be used in our model, we carried out an exhaustive study of the existing literature.

In spite of the fact that there are no mathematical models in literature that directly calculate leakage, there are models that calculate multiplier factors in local tourism. These studies are very interesting because they describe the most important variables that cause the greatest tourist impact on local economies (see Table 1).

This literature shows that different methodological evaluations and statistical tools have been used by authors, with input/output analysis being predominant in these multiplier effect calculation methods (Archer, 1995;

Frechtling and Horvath, 1999, Kweka *et al*, 2003; Zhou *et al*, 1997). Other methodologies used in literature are computable general equilibrium (CGE) models (Pratt, 2011), case study methods (Lacher and Nepal, 2010), applications of Keynesian-type multipliers (Archer, 1977), cost-benefit analysis (CBA) (Abelson, 2011), and the social accounting matrix (SAM) method (e.g., Wagner, 1997)...etc.

These previous studies have been conducted in various regions in different continents such as the Seychelles (Archer and Fletcher, 1996), Hawaii (Zhou *et al*, 1997), Kenya (Akama, 2000), Egypt (Shaalan, 2005), Denmark (Zhang *et al*, 2007), Brazil (Blake *et al*, 2008), and Uganda (Sandbrook, 2010). This fact is interesting as it reveals the variables that are common to all regions, thus enabling us to generalize a model.

Table 1 provides an approach to the main variables described by many authors.

The leakage phenomenon has gained importance in recent years, but leakage calculation models have been poorly researched. From the theoretical framework described above, we aim to make a proposal for calculating leakage based on a number of variables that quantitatively measure leakage.

Methodology

Several models and empirical studies have investigated and analyzed the economic impacts of tourism and the relationship between tourism development and economic growth (Dritsakis, 2012, Klijs *et al*, 2012). They have been "often estimated using input-output models" (Haddad *et al*, 2013, p. 174). However, according to Haddad *et al* (2013, p. 174) "there is a great deal of variation about the magnitude of their impact", according to the diverse methodologies used. Our proposal is to calculate leakage, and calculate it in a quantitative way. As mentioned above, this is an innovation and a contribution to literature since almost all leakage measurements in previous literature have measured this construct qualitatively (Table 1 shows a brief representation of the literature on leakage that measures it qualitatively, as well as the most important works using quantitative measures). Specifically, our study has created scales of measurement and postulated a mathematical model to calculate leakage taking into consideration existing qualitative models.

In order to validate our model we also conducted an empirical study. First of all, we developed a questionnaire with the help of experts from the hospitality field (including academic and professional experts) in order to add or avoid a series of items and improve it. We used objective measurements and questions with percentages, and for almost all items, responses were measured on a 1-5 Likert scale ranging from 1=Totally Disagree to 5=Totally Agree. This questionnaire was then answered by a population of top hotel managers, excluding hostels, guesthouses, halls, and bed and breakfasts.

Our study was carried out in the Valencian Region. We obtained 204 completed questionnaires from top managers, out of a total population of 726 hotels, (this sample represents 28% of the population). In order to corroborate the goodness-of-fit of our sample, and to ensure that it was representative of the population, we used data from the Valencian Tourism Agency (2012). According to official data, a geographical breakdown of the population by major areas revealed that there were 205 hotels in Alicante (28%), 137 hotels in Benidorm, (19%), 228 hotels in Valencia (32%) and 156 hotels in Castellon (21%). Our sample also reflected these percentages, as we obtained 57 questionnaires from Alicante (28%), 41 from Benidorm (20%), 66 from Valencia (32%) and 40 from Castellon (20%).

Description of variables used in the model

Our work ignores other types of leakage within the tourism sector and instead focuses on the calculation of leakage in the hotel sector, due its relative importance in the tourism chain. To do so, we also considered studying the leakage factor from two leakage subgroups: leakage produced by hotel suppliers and leakage caused by hotel customers.

Leakage produced by suppliers is caused because companies from other countries provide goods and services which have been outsourced by the hotel. This is the case of maintenance, cleaning, and electricity companies, for example. If the majority of these companies are foreign, leakage is greater. We calculated leakage by observing the weight of each hotel's expenditure items (the amount a hotel spends on consumables is not the same as the amount it spends on electricity) and multiplied them by the weight of foreign suppliers in each case.

After a comprehensive study of the literature, we specifically considered the following variables when calculating supplier leakage: light, water and gas (Archer and Fletcher, 1996; Cernat, and Gourdon, 2012; Gooroochurn and Sinclair, 2005), food (Archer, 1995; Pratt, 2011; Zhou *et al*, 1997), beverages (Archer and Fletcher, 1996; Frechtling and Horvath, 1999; Hjerpe, Yeon-Su Kim, 2007), telecommunications (Archer and Fletcher, 1996; Gooroochurn and Sinclair, 2005; Zhou *et al*, 1997), salaries (Lacher and Nepal, 2010; Sandbrook, 2010; Wagner, 1997), maintenance (Frechtling and Horvath, 1999; Gooroochurn and Sinclair, 2005), consumable products (Walpole and Goodwin, 2000; Zhang *et al*, 2007), decoration (Lacher and Nepal, 2010; Pratt, 2011), cleaning (Archer and Fletcher, 1996), restaurants (Blake *et al*, 2008; Lejarraga and Walkenhorst, 2010; Madsen and Jensen-Butler, 2007; Supradist, 2004; Zhou *et al*, 1997), tours (Akama, 2000; Frechtling and Horvath, 1999; Pratt, 2011; Supradist, 2004) and others.

We observed that authors used other variables in the literature such as transport (Archer, 1995; Blake, 2008; Supradist, 2004), accommodation (Akama, 2000; Blake, 2008; Lacher and Nepal, 2010), retailing (Archer, 1995, Zhang *et al*, 2007) and others. However, we concentrated on the 12 variables mentioned above because they were the most relevant according to the weight of total hotel expenditure. Thus, we conducted a pilot test involving 25 personal interviews with hotel managers. This step enabled us to find out the weight of each of the variables used in the model.

In order to calculate leakage from hotel clients, we used the three hotel distribution channels. In this sense, we considered the percentage of rooms booked directly by the hotel, by tour operators, and by other travel agencies respectively (Buhalis, 2003; Buhalis and Law, 2008). We calculated the weight of these three channels on hotel sales and also weighted the data according to the percentage of money the hotel receives when obtaining clients from each one. Finally, we also calculated the percentage of foreign distributors in these three channels.

Table 2 shows the main variables used in our calculations and their weight in the final calculation of each kind of leakage. We weighted these variables in order to calculate leakage from suppliers and leakage from customers.

Proposal to calculate leakage in hotels

Having described the variables used in the model, we put forward the following mathematical model in order to calculate the total leakage in the hotel sector of a region.

In order to calculate supplier leakage we proposed the following formula:

$$Ls = 1 - \sum_{i=1}^{12} e_i * p_i$$

In this formula:

Ls is the leakage produced by suppliers for each hotel.

Ei is the percentage of domestic companies for each of the 12 types of suppliers.

Pi is the weight of each type of supplier as a percentage of total hotel expenditure.

In terms of customer leakage, we observed the different ways in which clients hired their rooms. To do so, we used the three types of distributors that sell hotel rooms directly to customers. These three distribution channels include sales through the hotel itself, sales through specialized websites (e.g. Booking) and sales through tour operators. This led us to corroborate the significant growth of e-commerce and its influence on hotel distribution (Buhalis, 2003; Buhalis and Law, 2008).

We considered that it was necessary to observe the percentage of sales of each of these three hotel distribution channels for this type of leakage, and ponder it again by the percentage of foreign companies. In this case, we found that the greatest leakage was associated with purchases made through agencies and foreign tour operators. We also observed the hotel's profit percentage after a sale through intermediaries (tour operators and websites). In this sense, and as in the case of supplier leakage, we were able to present a formula to calculate customer leakage.

The following formulas considered the three possible distribution channels: 1 was distribution by the hotel itself, 2 was distribution by specialist websites and 3 was distribution by the different tour operators.

$$X_i = (a_i * b_i * c_i)$$

$$Z_i = X_i + ((1 - X_i) * Y_i$$

$$Lc = 1 - \sum_{i=1}^{a} Z_i$$

In this formula:

X_i is the percentage that remains in the hotel out of the total income in each of the three channels.

Y_i is the percentage of domestic companies in each of the three channels.

Z_i is the percentage that remains in the country in each of the three channels.

a_i is the percentage of hotel rooms sold in each of the three channels.

b_i is the percentage of hotel income after a sale in each of the three channels.

c_i is the percentage of the average room price paid in each of the three channels.

Therefore, the overall leakage associated with the hotel industry is the sum of supplier leakage and customer leakage (Supradist, 2004):

$$\text{Leakage} = Ls + Lc$$

Taking into account these formulas, we calculated the leakage of each hotel individually. In addition, we considered hotel size in order to calculate the total leakage of a region. Specifically, we added the leakages from each hotel, taking into account their weight (depending on size). To measure the size of a hotel, authors such as Gartner (1999), and Morrison and Thomas (1999) propose quantitative criteria such as number of rooms, number of employees and number of beds. In our case, we concentrated on

number of rooms. We thus obtained the following results for the Valencian Region (see table 3) from the different tourist areas. As a result, we can observe that the area with the highest concentration of foreign tourists (Benidorm) has the highest rate of leakage.

Conclusions and future work

The tourism industry has grown considerably in the last few decades and has become one of the main sources of income in many countries. However, its sustainability is not always observed in tourism development policies. This paper has concentrated on the concept of economic carrying capacity and more specifically on the measurement of leakage in order to determine the economic sustainability of tourism growth.

"Tourism activities are considered a source of economic growth throughout the world" (Dritsakis, 2012, p. 801). In this vein "the role of tourism to the economic growth and to the progress of modern societies has become a common awareness in political authorities worldwide" (Dritsakis 2004, p. 307). However, and although "tourism is an alluring source of income to struggling countries (and regions)", as a result of leakages, "the multiplier effects generated for the local regional economy by tourism tend to be restricted" (Haddad *et al*, 2013, p. 175).

Although previous literature has shown the difficulties of measuring sustainability (according to Dritsakis, (2012, p. 802), the differences in empirical studies have revealed that many produce different results for different countries, different time periods within the same country and different methodologies in different regions, and there are special difficulties in calculating the leakage of a particular destination, we have revised the literature extensively in order to quantitatively measure the leakage of a tourism destination. In addition, we have proposed a mathematical model and we have calculated the leakage of hotels in a mass tourism destination. This fact is important, "limited understanding of the dynamics between different determinants of tourist sustainable behavior is a challenge that hinders sustainable progress" (Budeanu, 2007, p. 505), and the understanding of the sources of leakages helps us to identify these behaviors in the economic sustainability of tourism growth.

Our work opens new areas of research as most previous studies only use a qualitative approach to measure this aspect. Future papers could try to improve our measurements or focus on the calculation of leakage in other subsectors of the tourism industry, in this or other destinations. In addition, further works should try to carry out in-depth research into the determinants of diverse leakages, and the influence of leakage on other variables of the economy, or on its influence on employment and the growth of this and other sectors.

In addition, our results are very important from a practical point of view as they can be used by planners and practitioners in order to develop their policies and to mitigate the leakage from tourism destinations and promote policies for economic sustainability. Our work has stressed the different leakages existing in the diverse areas studied, which can help government and firms to identify the advantages of the diverse tourism developments. In addition, we have shown the weight of the variables when calculating leakages, which can help government to concentrate on the most important areas to reduce leakage and improve the economic sustainability of tourism growth.

We have stressed that tourism in general, and tourist purchases in particular are a major source of income for destination communities (Budeanu, 2007). However, the effect of tourism "will depend mostly on the composition of the expenditures, both the direct purchases by tourists in the destination regions and the associated multiplier effects" (Haddad *et al*, 2013, p. 175). Whether the economic sustainability of tourism developments centers on compensating locals for the burden that the presence of tourists may cause, the importance of the multiplier effects, and of the amount of money that remains in the destinations are critical. In addition, "while tourism may provide financial benefits and economic growth for some, it may result in unequal distribution of resources" (Carbone, 2005, p. 563), a factor that we consider essential as it can destroy the bases of the economic sustainability of tourism growth

In order to improve the benefits of tourism growth, we agree that "channeling injections of income from abroad to specific regions of a country may still be seen as a process of high probability of activating the multiplier effect in those areas" (Haddad *et al*, 2013, p. 175), despite uncertainties about its magnitude and potential leakage and crowding-out

effects. However, as Dritsakis (2012, p. 801) pointed out, what is needed is "a balanced and harmonious growth of the tourist economy in relation to other sectors of economic activity, especially sectors such as agriculture and industry". According to Carbone (2005, p. 562), "tourism is not inherently positive or negative… but everything depends on how it is planned and managed".

Mshenga and Richardson (2013, p. 667) pointed out that "stimulating local entrepreneurs to participate in tourism is an important factor in maximizing the potential for the sector to contribute to regional economic development". In addition, we agree with Mshenga and Richardson (2013, p. 680) in that greater participation in hotel procurement of products from micro and small enterprises and other local businesses may contribute more to local and regional economic development, minimizing foreign exchange leakages that are associated with the supply of imported products.

In addition, Mshenga and Richardson (2013, p. 679), who identify factors which influence micro and small enterprise participation in tourism and the linkages between them and hotels, and the Agenda 21 for tourism (UNEP, 2003), call for greater community involvement in tourism policy development and initiatives to increase participation of micro and small enterprises and the impact of tourism on the local economy. The participation of locals is also stressed by Rid et al (2014, p. 103), "it has been argued that one form of reducing leakages is through locals becoming more directly involved in terms of ownership and levels of control of tourism business". In this vein, these authors emphasize the importance of promoting community-based tourism enterprises or pro-poor tourism initiatives. Carbone (2005, p. 560) also underlines that "the idea of pro-poor tourism – tourism that generates net benefits for the poor – has been advanced as a solution to the leakage problem. This author also emphasizes that "creating a long-term vision, which includes not only tourism development but also the general development of the community, is key to the success of any tourism strategy" (Carbone, 2005, p 562). Hence, tourism planning should entrust more decision making power in local communities.

However, economic sustainable growth needs a balance of interest and motivators as well as suitable policies from the diverse stakeholders (tour operators, local governments, local communities, local firms…). In this vein, Carbone (2005, p. 563) postulates a "frank dialogue": "discussions are

often lengthy, but the eventual compromise is the only solution to ensure the productivity and longevity of this sector". According to Budeanu (2007, p 505), authorities "need to create the institutional context in which sustainable tourism products can be developed by the industry", yet the participation of the industry, which has to invest in innovative sustainable products, and create incentives for sustainable tourist behavior is also essential, "behind these challenges, there are also great opportunities for tourism to reinvent its markets and practices". The participation of the industry is crucial because although "there are no uniform solutions to problems, and some may not be solved easily", "considerable inventiveness on the part of the tourism industry is required if these problems are to be remedied" (Carbone, 2005, p 562).

In addition, we have to take into account that leakage is not always negative, because its composition is also important. In this vein, as Dritsakis (2004, p 309) pointed out, although "tourist growth provides a remarkable part of the necessary financing for the country to import more products than to export ones", "if those imports are capital goods or basic inputs for producing goods in any area of the economy, then it can be said that earnings from tourism are playing a fundamental role in economic development". In this sense, our study is important, because research into the composition of leakages is essential to identify the bases of the economic sustainability of tourism.

Nevertheless, we are aware that our research is limited as it has only considered the hotel sector and has only been applied in a particular tourist destination.

However, it is also postulated as a working basis for further studies. In this vein, possible future work may consider the application of our formulas and scales in other regions of the world, in order to make tourism more sustainable, or may complement our research by investigating the importance of leakage in other sectors of the tourism chain, such as restaurants, leisure attractions and transportation.

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Table 1. Important variables used in the calculation of leakage and economic multipliers of tourism.

Author/ s (Year)	**Tittle of the paper**	**Region**	**Methodology**	**Variables**	**Evaluation**
Archer (1995)	Importance of tourism for the economy of Bermuda	Bermuda	Quantitative	Food and beverage, Hotels, restaurants, tourist attractions, retail, transport, utilities, others.	Input/Output Analysis
Archer and Fletcher (1996)	The economic impact of tourism in seichelles	Seychelles	Quantitative	Food/Beverage.Electricity and water, Restaurants, Communications, Hotels, Trade, Shopping, Air transport, Constructions, Manufacturing, others.	Evaluation of tourism multipliers
Slee *et al* (1997)	The economic impact of alternative types of rural tourism.	Scotland	Quantitative	Attractions, restaurants, shops, hotel suppliers, hotel buildings,others.	Case Study. IO Analysis
Zhou *et al* (1997)	Estimating economic impacts of tourism	Hawai	Quantitative	Food, Manufacturing, Constructions, Communications, Energy, Restaurants, Hotels, Trades, others.	Input/Output Analysis
Wagner	Estimating impacts of	Brazil	Quantitative	Employment, Transportation,	Social Accounting

(1997)	tourism			Construction, Salary, Food,Energy, Others.	Matrix
Huse *et al* (1998)	Tourism impact comparisons among Norwegian towns	Norway	Quantitative	Hotels, restaurants, shops, gas stations, tourist attractions, others.	Multipliers calculation
Frechtling and Horvath (1999)	Estimating the Multiplier Effects of Tourism Expenditures on a Local Economy through a Regional Input-Output Model	USA	Quantitative	Eating and drinking, hotels,entertainment, shopping, Salaries,maintenance, others.	Input/Output Analysis
Akama (2000)	The Efficacy of Tourism as a Tool For Economic Development in Kenya	Kenya	Qualitative	Air ticket, food, accommodation and recreational activities	Qualitative description
Eagles *et al* (2000)	Estimating the Tourism Volume and Value in Protected Areas in Canada and the USA	Canadá	Qualitative	Food and drink, electrical equipment, textiles and infraestructural services, others.	Qualitative description
Tohamy and Swinscoe (2000)	The Economic Impact of Tourism in Egypt	Egypt	Quantitative	Accommodation, Transport, Attractions, food and beverage, travel agencies,	Input/Output Analysis

				others.	
Walpole and Goodwin (2000)	Local economic impacts of Dragon Tourism in Indonesia	Indonesia	Quantitative	Employment, Hotels, Shops, Restaurants, meals and drinks, Consumables, Others.	Small-scale survey
Kim *et al* (2002)	Convention Industry in South Korea: an economic impact analysis	South Korea	Quantitative	Hotels, Transportation, Communications, restaurants, entertainment, others.	Input/Output Analysis
Chhabra *et al* (2003)	The Significance of Festivals to Rural Economies: Estimating the Economic Impacts of Scottish Highland Games in North Carolina	USA	Quantitative	Food and Beverage, lodging, gasoline, vehicles,others.	Input/Output Analysis
Kweka *et al* (2003)	The economic potential of tourism in Tanzania	Tanzania	Quantitative	Food, hotels, tours, crafts,others.	Input/Output Analysis
Supradist (2004)	Economic leakage in tourism sector	Sweden	Quantitative	Holiday planning, restaurants, Transportation, Accommodation, Food and entertainment, Shopping and visiting experience.	Tourism Value Chain

Shaalan (2005)	Sustainable tourism development in the Red Sea of Egypt threats and opportunities	Egypt	Qualitative	Shopping, Transport, Accommodation and others.	Qualitative description
Goorooc hurn and Sinclair (2005)	Economics of Tourism Taxation	Mauritiu s	Quantitative	Restaurants, hotels, Transport, communications,to urism attractions, electricity, gas and water,maintenance, others.	CGE model
Hjerpe and Kim (2007)	Regional economic impacts of Grand Canyon river runners	USA	Quantitative	Recreation activities, food and drink, Transportation, Lodging, others.	Economic impact analysis
Lee and Chang (2008)	Tourism development and economic growth: A closer look at panels	55 countries	Quantitative	local goods, employment, tranportation, roads and airports, others.	Statistical panels
Zhang *et al* (2007)	Regional Economic Impacts of Tourism: The Case of Denmark	Denmark	Quantitative	Restaurants, transports, retailing, hotels, activitiies, others.	Social Accounting Matrix
Asiedu (2008)	Participants' Characteristics and Economic Benefi ts of Visiting Friends and Relatives (VFR) Tourism — an International	Ghana	Qualitative	Local restaurants, events and atractions, accommodation and others.	Qualitative description

	Survey of the Literature with Implications for Ghana				
Blake *et al* (2008)	Tourism and poverty relief	Brazil	Quantitative	Remunerations, transport, travel agencies, restaurants, accommodation,re creation, others.	computable general equilibrium (GCE)Model
Sandbro ok (2010)	Puutting Leakage in its place: the significance of retained tourism revenue in the local context in rural Uganda	Uganda	Qualitative	Shopping, tour guides, food and drinks, salaries, others.	Qualitative description
Lejarrag a and Walkenh orst (2010)	On linkages and leakages: measuring the secondary effects of tourism	150 Countrie s	Quantitative	Hotels, restaurants, travel agencies, transport, Entertainment, Others	Keynesian multipliers
Lacher and Nepal (2010)	From Leakages to Linkages: Local-Level Strategies for Capturing Tourism Revenue in Northern Thailand	Thailand	Quantitative	Accommodation, retails, Salaries, Restaurants, employment, local business, seasonal workers, prices and others.	case-study method
Pratt (2011)	Economic linkages and impacts across the TALC	Hawai	Quantitative	Construction, Food procesing, Transportation, arts, eating and drinking,	Case Study. IO Analysis

				entertainment, others.	
Cernat and Gourdon (2012)	Paths to success: Benchmarking cross-country sustainable tourism	Asian countries	Quantitative	Internet, elecricity, water, restaurants, lodging, entertainment, hotel prices, others.	Sustainable tourism benchmarking tool
Haddad *et al* (2013)	Domestic tourism and regional inequality in Brazil	Brazil	Qualitative	Accommodation, restaurants, transportation and entertainment	IO Model

Table 2: Summary description of the variables used to calculate leakage and its corresponding weights in the case of the Valencian Region.

Name of variable	**Weight of the variable in "Supplier Leakage"**
Light, water and gas	30.12%
Food	19.82%
Beverages	13.55%
Telecommunications	3.82%
Salaries	30.29%
Maintenance	0.41%
Consumable products	0.42%
Decoration	0.31%

Cleaning	0.27%
Restaurants	0.38%
Tours	0.33%
Others	0.29%
Name of variable	**Weight of the variable in "Customer Leakage"**
% rooms sold by hotel	29.91%
% rooms sold by web	31.26%
% rooms sold by tour operators	38.83%

Table 3: Leakage in the hotel sector (Region of Valencia).

AREAS	**Nº total rooms in our sample**	**Leakage of the diverse touristic areas**
Benidorm	9634	38.78 %
Valencia	5735	11.90 %
Alicante	4228	21.49 %
Castellon	6170	21.46 %

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Leakage, entrepreneurship, and satisfaction in hospitality

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Leakage, entrepreneurship, and satisfaction in hospitality

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Tourism is a very important tool for economic development. However, its economic effects are mainly conditioned by the level of leakage. This work defines leakage, provides an original evaluation of the entrepreneurial environment in showing that it is the one with the lowest level of leakage, and creates a new framework. It also measures leakage in an innovative way using a quantitative approach. In addition, the paper explores and shows how leakage can affect critical business factors, such as customer and employee satisfaction. The empirical study uses structural equations and data from hotels in the Valencian Region (Spain) to show how important leakage is in making businesses more competitive. The results confirm the new model and are of interest for company managers and public organizations.

Keywords: leakage; entrepreneurship; tourism; customer satisfaction; knowledge industries.

Introduction

The tourism industry is a tool for economic development in many countries. The economic effects of the presence of visitors in tourist destinations stem from the fact that travelers and tourists spend their money on a wide variety of goods and services. This expenditure can be seen as an injection of financial resources into the host economy, thereby creating new levels of consumer demand.

In the information society, companies need to be increasingly competitive (Buhalis, 2003), especially in knowledge industries such as tourism, where information technologies (IT) have a tremendous impact (BarNir, 2012; van Riel, Semeijn, Hammedi, & Henseler, 2011; Siegel & Renko, 2012). In the

new arena, customer satisfaction is one of the most important objectives for companies, as they aim to obtain optimal long-term results (Parasuraman, Zeithaml, & Berry, 1985). In the case of tourism, customer satisfaction is paramount because it is directly related to the choice of destination (Ahmed, 1991) and the decision to return (Stevens, 1992).

In order to obtain maximum customer satisfaction, both internal resources and capabilities (Prahalad & Hamel, 1990; Wernerfelt, 1984) and external variables have to be considered. A large body of literature bears witness to the importance of the resources and capabilities available within each firm (internal variables). However, in this paper, we highlight that external variables, and especially the entrepreneurial environment, also directly affect customer satisfaction.

Much has been written about the entrepreneurial environment (Cáceres, Guzmán, & Rekowski, 2011; Chang, Hughes, & Hotho, 2011; Goktan & Miles, 2011; Yang & Li, 2011). In this regard, academic literature has postulated that the existence of an entrepreneurial environment is essential to achieving most firms' main goal: business growth (Vaiman, Scullion, & Collings, 2012; Vasconcellos, Ola˜o, & Pereira, 2011; Walk, 2011; Woodside & Sakai, 2001). In addition, many authors have written about knowledge industries and their relationship with innovation and the entrepreneurial framework (Battistella, Biotto, & De Toni, 2012; Cegarra-Navarro, Sanchez-Vidal, & Cegarra-Leiva, 2011; Jafari, Rezaeenour, Mazdeh, & Hooshmandi, 2011; Li & Atuahene-Gima, 2001; Mainardes, Alves, & Raposo, 2011).

This research adds a novel contribution to business literature by evaluating the entrepreneurial environment in relation to the level of the leakage in this environment. In addition, we attempt to show that the leakage factor is a determinant for important factors within the firm, such as employee and customer satisfaction.

Leakage is defined in this work as the amounts subtracted from tourist expenditure on taxes, repatriated profits, wages paid outside the region, and on imported goods and services (Lejarraga & Walkenhorst, 2010). Financial leakages occur in many industries and sectors, but since tourism is often billed as one of the few profitable economic sectors for developing countries, it is particularly relevant here (Mowforth & Munt, 2003). Only a small portion of the production value of tourism actually stays in the host

country, and most tourist expenditure is either sent back to its country of origin (for example, when a tourist purchases imported goods or services) or it never leaves its home country in the first place (such as travel agency commissions, foreign airline tickets, and tour operator profits). Leakage is often analyzed with a qualitative approach. However, our model also advances on previous literature by calculating and analyzing the effects of leakage from a quantitative approach. In addition, we have also created a new framework which has been contrasted using structural equation models.

An analysis of the most relevant literature on the specific variables in the study is also provided. The following section details the theoretical framework and the appropriate hypotheses, followed by the methodology and findings of the study. The conclusions and limitations of the study are presented in the final section.

Literature review

Theoretical model

Tourism, like other industries, has been transformed by new technologies. IT are playing an increasingly critical role in the competitiveness of tourism organizations and destinations (Buhalis, 2003; Sheldon, 1997). They are being used more and more to reduce costs and enhance efficiency, service quality, and customer satisfaction (Law, Leung, & Buhalis, 2009; Woodside, Ramos Mir, & Duque, 2011), whilst the Internet is currently the most important and widely available source of information. Firms are able to distribute products directly to customers via the Internet, besides creating linkages with intermediary companies (Expedia, Booking, etc.), an aspect we will go on to discuss later (Buhalis & Licata, 2002). IT are also used by tourism companies in order to provide all the information and service quality mechanisms required for customer satisfaction. Customers can use IT to evaluate information on different travel choices, prices, and offers (Buhalis & O'Connor, 2005).

In this arena, firms have to be tremendously competitive, and customer satisfaction is one of the main variables to consider (Eggers, Hansen, & Davis, 2012; Lindic & Marques da Silva, 2011). In this work, we posit that customer satisfaction and other important variables in a firm are determined

by the conditions of the entrepreneurial environment they are located in, and especially by the level of leakage in this environment.

Tourism leakage has been defined as a portion of tourist expenditure that leaks out in the form of imports and returns to foreign factors of production (Lejarraga & Walkenhorst, 2010), or 'the failure of tourist spending to remain in the destination economy' (Sandbrook, 2010).

Many authors define leakage as a secondary effect that occurs when the tourism industry does not leave significant revenue in a local economy as a consequence of a destination's poor development strategy (Mowforth & Munt, 2003). When this occurs, not all tourist expenditure is retained within the host economy when leakage exists. We consider that leakage could be used as a variable to measure the level of entrepreneurship in a region.

The explanation is that an entrepreneurial environment implies that the country has many or enough industries in the area to attend all demand requirements (Idris & Tey, 2011; Lee, Hwang, & Choi, 2012; Sitlington & Marshall, 2011; Tuan, 2012). Therefore, if there is a strong industrial structure, imports from foreign countries are reduced and so is leakage.

In addition, if an entrepreneurial environment exists, this has many impacts on companies' behavior. Herein lies the most important aspect of our study: to demonstrate that leakage has a strong influence on many critical factors in firms (such as employee satisfaction, customer satisfaction, etc.). In this vein, reducing leakage could create a greater level of satisfaction among employees and customers, thereby improving a firm's competitive position.

Several papers have defined and analyzed the importance of entrepreneurship (Bettiol, Di Maria, & Finotto, 2012; Chaston & Scott, 2012; Hotho & Champion, 2011; Lee, Lim, & Pathak, 2011; Zortea-Johnston, Darroch, & Matear, 2012). For instance, from Marshall's point of view, perfect competition and equilibrium exist in the market. He believes that individual manufacturers do not play a specific role in terms of entrepreneurship (Marshall, 1948). Schumpeter, however, rejects this equilibrium and posits that entrepreneurs have the power to modify economic development. He describes the entrepreneur as an innovator (Schumpeter, 1991). In certain strategic marketing literature (Davis, Morris, & Allen, 1991; Knight, 2000), corporate entrepreneurship has three main components: proactiveness, risk-taking, and innovativeness.

Specifically, recent literature has found important relationships between culture and customer behavior, customer predisposition and entrepreneurial spirit (Woodside et al., 2011). Most of these works derive from the pioneering research by Hofstede. According to Hofstede (1980, 2001) there are four main dimensions of national culture that may influence consumer predispositions. In connection with these observations, cultures thus have an important role to play in an entrepreneurial context.

Moreover, the study by Chi and Gursoy (2009) explores the relationships between employee satisfaction, financial performance, and the role of customer satisfaction.

For instance, these authors examine three main aspects: the relationship between customer satisfaction and financial performance, the relationship between employee satisfaction and financial performance, and the relationship between employee satisfaction and customer satisfaction. Specifically, the study analyzes the impact of these relations on the financial performance of hospitality firms, using the service-profit-chain framework as the theoretical basis for performance (Heskett, Jones, Loveman, Sasser, & Schlesinger, 1994).

In terms of the importance of leakage, we would also like to highlight the model put together by Supradist (2004) whose study centered on carrying out a qualitative analysis of economic leakage in a region. To do so, Supradist proposed a very simple tool for examining the main factors that cause leakage. He also analyzed a variety of variables that can affect the local economy and identified points where leakage could be mitigated. His theoretical model is based on the tourism value chain (Gollub, Hosier, & Woo, 2004) which is used as a tool for evaluating leakage. However, this study only presented a qualitative approach to the calculation of leakage, a limitation that we would like to eliminate in our work.

Based on this literature, and other studies that we will develop later, we have put together the following hypotheses that will make up our model.

Leakage, customer satisfaction, and employee satisfaction

Some studies show that high quality service and improved customer satisfaction are widely recognized as important factors leading to the

success of firms in the hotel, catering, and tourism industries (Barsky & Labagh, 1992; Choi & Chu, 2001; Legoherel, 1998). Thus, the importance of searching for their antecedents is crucial.

In this regard, leakage is directly related to entrepreneurship. This entrepreneurial framework can represent one of the underlying causes for the growth of strong industry in a region and a reduction in the number of imports, which, in turn, could increase employee and customer satisfaction (Cavalcante, Kesting, & Ulhoi, 2011; Huarng & Yu, 2011; Lee, Olson, & Trimi, 2012). Low customer leakage mainly shows the strength of firms and the sector (if more money remains in the area, firms can offer better service quality, which is widely recognized as an important factor leading to customer satisfaction). Diverse authors have identified interrelations between service quality and satisfaction (Cronin, Brady, & Hult, 2000; Spreng & Mackoy, 1996), and most of them postulate that customer satisfaction results from service quality, which in turn is related to the quality of the service provider (Bitner & Hubert, 1994).

In addition, a customer who perceives economic robustness and whose expectations are met in a hotel stay is more likely to be satisfied (Bowen & Shoemaker, 1998).

In the same vein, employee satisfaction, which is defined by Locke (1969) as 'a function of the perceived relationship between what one wants from one's job and what one perceives it as offering', can be also be conditioned by the circumstances of the place. Although several researchers have shown the relationship between employee satisfaction and company performance (Lawler & Porter, 1969; Locke, 1970; Tvorik & McGivern, 1997), others have pointed out the reverse. In this sense, high quality means better conditions for employees (if more money remains in the area, firms can offer better service quality and better conditions to their employees). Therefore, a low level of leakage can be related to high service quality.

Based on this literature, we can formulate the following hypotheses.

H1a: There is a positive relationship between an absence of customer leakage and customer satisfaction.

H1b: There is a positive relationship between an absence of customer leakage and employee satisfaction.

Supplier leakage is the leakage that is produced by company suppliers (maintenance, telecommunications, food, etc.). Logically, its level once again shows the strength or weakness of local industry and the entrepreneurial environment. However, we must point out at this stage that customers tend to prefer products from their own country. In this vein, if supplier leakage is reduced, it means that the company is buying domestic products and thus foreign customers will be less satisfied.

Nevertheless, and along the same lines as H1a and H1b, if the organization buys domestic products, it means that the sector remains strong, the company can offer better conditions to employees, and, in addition, following Hofstede (1980) the suppliers will have the same culture as the company's employees, so the employees will be more satisfied.

Thus, based on the above, we propose the following hypotheses.

H1c: There is a negative relationship between an absence of supplier leakage and customer satisfaction.

H1d: There is a positive relationship between an absence of supplier leakage and employee satisfaction.

Growth, customer satisfaction, and employee satisfaction

Much has been written about employee satisfaction. In our model, in addition to the environmental conditions which show the level of leakage, our aim is to analyze and study the impact of internal resources and capabilities on the satisfaction of employees and customers. However, as there are many resources and capabilities we will concentrate on company growth and competitive position, whose importance has already been highlighted when talking about service quality in its direct relationship with employee satisfaction and its indirect link to customer satisfaction (Ashworth, 2012; Reed, Storrud-Barnes, & Jessup, 2012; Tang, Robinson, & Harvey, 2011; Wang & Feng, 2012; Yang & Liu, 2012).

In terms of the incidence of the growth and competitive position variable, Lam, Zhang, and Baum (2001) found that employees in the hospitality industry are more likely to have a higher level of job satisfaction if there are opportunities for advancement and training. Studies such as these demonstrate that employees are indeed more likely to have a greater degree

of job satisfaction if there are opportunities for growth and advancement. At the same time, it has been argued in academic literature that an important trait related to job satisfaction in the hotel industry is the ability to feel connected to the organization in which a person works (Silva, 2006).

In addition, employees are not simply satisfied with their jobs in the hospitality industry because of the positions they hold; the potential for growth that exists within an organization can be also relevant. For instance, Kim, Murrmann, and Lee (2009) argue, from the results of their research on the effects of role stress and job satisfaction among hotel employees, that employees who feel heightened levels of stress related to the roles they play in their jobs are likely to have lower levels of job satisfaction. In relation to the justification of the theoretical model created herein, this information suggests that when employees feel increased stress and pressure because of the roles they perform in a hospitality organization, the less likely they are to be satisfied with their jobs. This provides further justification for the idea that the growth and competitive position variable does indeed predict overall employee satisfaction.

On the other hand, the direct relationship between customer satisfaction and growth and competitive position has rarely been examined. Many firms do not use customer satisfaction as a tool to improve their position and stimulate growth. Other firms that do utilize customer satisfaction do not always act appropriately in accordance with results (Dutka, 1994). For other authors, there is no direct relationship between firm performance and customer satisfaction (Jones & Sasser, 1995).

Therefore, we suggest the following hypothesis.

H2: There is a positive relationship between growth and competitive position, and employee satisfaction.

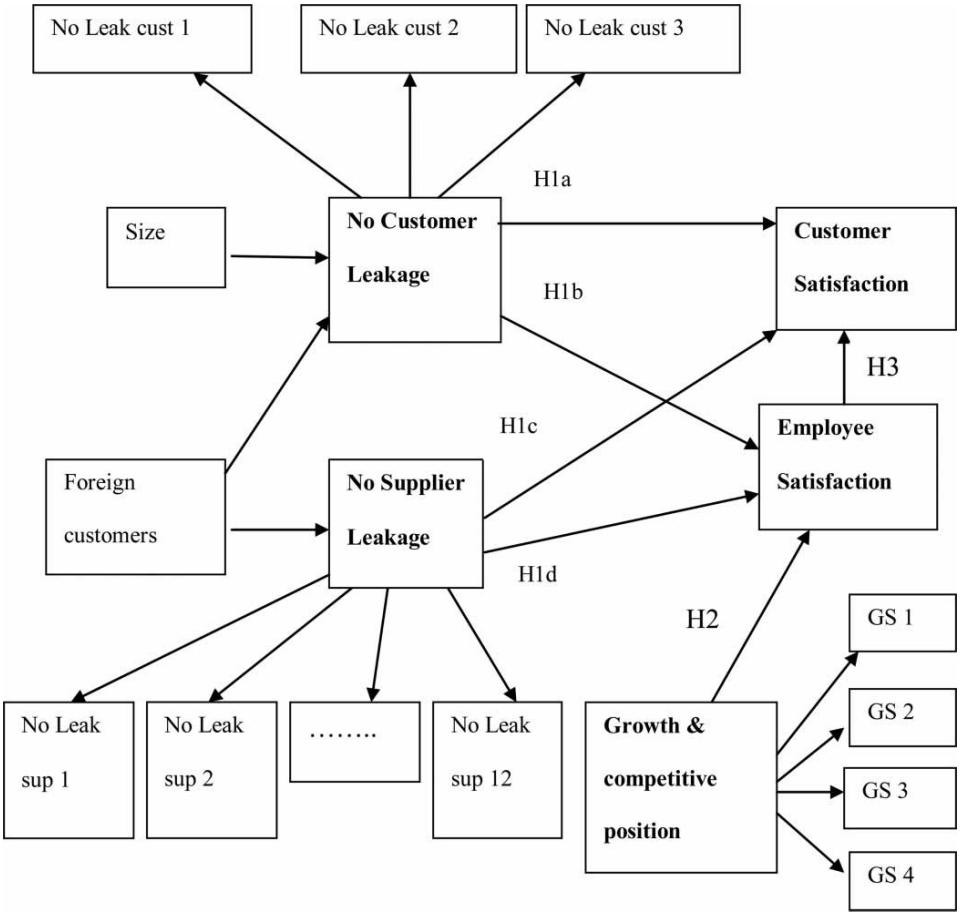

Figure 1. Final model: leakage, employees satisfaction, and customer satisfaction. GS 1, average growth in sales; GS 2, market share increase; GS 3, wealth creation; GS 4, overall competitive position.

Employee satisfaction and customer satisfaction

Many authors suggest a direct relationship between employee satisfaction and customer satisfaction (Kim et al., 2009; Matzler & Renzl, 2007; Spinelli & Canavos, 2000; Wu & Liang, 2009). They defend the theory that employees with a superior internal working environment are satisfied employees and thus provide customers with high quality service, which increases customer satisfaction.

In addition, Wu and Liang (2009) provide further justification of the relationship between employee satisfaction and customer satisfaction because the findings of their research show that direct interactions of service employees with hotel guests have an impact on the satisfaction with the service received and their hotel experiences. Thus, we can postulate the following hypothesis:

H3: There is a positive relationship between employee satisfaction and customer satisfaction.

Once all the relationships between the diverse kinds of leakage, growth and competitive position, employee satisfaction, and customer satisfaction have been explained, and after adding other control variables, we were able to create our theoretical model or framework, as shown in Figure 1.

Our framework mainly analyzes two areas of study. The first part of the model suggests that employee satisfaction is predicted by customer leakage, supplier leakage, and growth and competitive position. The second part of the model suggests that customer satisfaction is predicted by employee satisfaction, customer leakage, and supplier leakage.

Methodology

In order to measure the different constructs, we followed the scales put forward by Garrigos-Simon, Palacios-Marques, and Narangajavana (2005) for measuring the growth, profitability, employee satisfaction, and customer satisfaction items. Supplier leakage was measured by considering the items provided by Andriotis (2002a) and Supradist (2004). Client leakage is measured via items that ascertain the percentage of directly booked rooms,

either through tour operators or through other travel agencies. We introduced the percentage of foreign visitors and the size of the hotel (number of rooms) as control variables. In order to measure size, authors such as Gartner (1999), Morrison and Thomas (1999) and Andriotis (2002b) prefer quantitative criteria, including the number of employees, number of beds/rooms, total assets, and annual revenue, whereas others adopt qualitative criteria. The criterion for different-sized hospitality firms used in this survey was the number of rooms, as in the study by Andriotis (2002b), because other measures were not considered appropriate. Finally, we introduced the item 'average number of foreign tourists' to measure the amount of foreign custom.

The items in the questionnaire were subsequently examined by experts from the hospitality field (including academic and professional experts), in order to add or avoid a series of items. In this vein, we conducted a pilot test with 25 personal interviews during December 2011. This step allowed us to include a larger number of items and to improve the structure of certain questions.

We used objective measurements, questions with percentages, and, for almost all items, responses were measured on a 1–5 Likert scale ranging from 1 1⁄4 totally disagree to 5 1⁄4 totally agree. The questions for measuring growth and competitive position, and the satisfaction of customers and employees involved asking managers about the situation of the firm compared to its competitors. The questionnaire was in Spanish. The chosen population included the managers of hotel firms, excluding hostels and others such as guesthouses, halls, and bed and breakfasts. A total of 204 high-ranking hotel managers answered the questionnaire. The data gathering process was carried out between the months of January and February 2012.

Our study was carried out in the Valencian Region. We obtained 204 completed questionnaires, out of a total population of 726 hotels (this sample represents 28% of the population). In order to corroborate the goodness-of-fit of our sample and to ensure that it was representative of the population, we used data from the Valencian Tourism Agency (2011). According to these official data, a geographical breakdown of the population into major towns or cities revealed that there were 205 hotels in Alicante (28%), 137 hotels in Benidorm, (19%), 228 hotels in Valencia (32%), and 156 hotels in Castellon (21%). Our sample also reflects these

percentages, as we obtained 57 questionnaires from Alicante (28%), 41 from Benidorm (20%), 66 from Valencia (32%), and 40 from Castellon (20%).

Our study began by calculating leakage with regard to hotels by classifying the concept into two distinct measures: leakage from suppliers and leakage from customers. In order to do this, we used diverse variables in order to calculate each of the items. In the case of suppliers, we calculated the leakage by looking at the weight of each of the items in terms of the expenses of the different hotels and multiplying it by the weight of foreign suppliers in each of these items. We considered 12 different types of suppliers, following the study by Andriotis (2002b).

Table 1. Description of main variables

Type of variable	**Name of variables**	**% of national companies (Scale 1 to 5)**	**Weight of the variable on the "Absence of Supplier Leakage"**
Supplier leakage	Light gas & water	4.8617	30.12%
	Feeding	4.7688	19.82%
	Beverage	4.7796	13.55%
	Telecomunications	4.7287	3.82%
	Salaries	4.1101	30.29%
	Maintenance	4.8191	0.41%
	Fungibles elements	4.734	0.42%
	Decoration	4.718	0.31%
	Cleaning	4.7713	0.27%
	Restaurants	4.7727	0.38%

	Trips	4.0826	0.33%
	Others	4.155	0.29%
Customer leakage	**Name of variables**	**% of national companies (Scale 1 to 5)**	**Weight of the variable on the "Absence of Supplier Leakage"**
	% Rooms sold by hotel	4.77	29.91%
	% Rooms sold by webs	2.271	31.26%
	% Rooms sold by travel agencies	2.114	38.83%
	Name of variables		
Control variable	% Foreign visitors		
	Size (number of rooms)		

These items include maintenance firms, suppliers of consumable office products, telecommunications, and food and beverage suppliers. In order to calculate the leakage from clients, we used the three kinds of distribution channels for hotels. In this sense, we considered the percentage of rooms booked directly by the hotel, by tour operators, and by other travel agencies. We calculated the weight of these three channels on hotel sales and also weighted the data according to the percentage of money the hotel receives when obtaining clients from them. Finally, we also calculated the percentage of foreign distributors in these three channels.

Table 1 shows the main variables used in our calculations and their weight in the final calculation of each kind of leakage. We weighted these variables in order to calculate leakage from suppliers and leakage from customers.

After calculating the leakage from suppliers and clients, the study used a two-phase structural equation methodology (Anderson & Gerbing, 1988) in line with recommendations made in earlier studies (Calantone & Zhao, 2001; Forgas-Coll, Palau-Saumell, Sanchez-Garcia, & Callarisa-Fiol, 2012; Garcia & Kandemir, 2006). The models were estimated according to the matrices of variances and covariances by the maximum likelihood procedure. Robust standard estimators, the Satorra–Bentler chi-square (Satorra & Bentler, 2001), and EQS 6.1 statistical software were used (Bentler, 1995).

We first carried out a study of the dimensionality, reliability, and validity of the scale to ensure that we were measuring the intended construct. This analysis allowed us to refine the scale and eliminate non-significant items. The final number of items in the growth and competitive position construct was four. In the case of leakages from suppliers and customers, we used the previously calculated composite variables. In addition, we introduced the size of the hotels, measured via the number of rooms, and the percentage of foreign clients as the control variables in our model.

We subsequently contrasted the model presented in the theoretical section by contrasting the causal relationships for the whole sample in order to test our hypotheses.

Findings and discussion

We first analyzed all the psychometric properties of the scale used in the model. The probability associated with the chi-square reached a value higher than 0.05 (0.72303), indicating the model's overall goodness-of-fit (Jo¨reskog & So¨rbom, 1996). Convergent validity was demonstrated because the factor loadings were significant and close to or greater than 0.5 (Hair, Black, Babin, Anderson, & Tatham, 2006), and because the average variance extracted was higher than 0.5 (Fornell & Larcker, 1981). In addition, the model was adequate because the goodness of fit index and

average goodness of fit index were close to unity and root mean square error of approximation was close to zero. The reliability of the scales was demonstrated because the composite reliability obtained was higher than 0.6 (Bagozzy & Yi, 1988). As some of the items were measured with only one item and the square root of the average variance extracted between each pair of factors was higher than the correlation estimated between the factors, we were able to confirm the discriminant validity (Fornell & Larcker, 1981).

After validating the model, we analyzed the causal relationships for the total sample (Table 2). The model was adequate because, with 31 degrees of freedom, the probability of the Satorra–Bentler chi-square (0.057) was higher than 0.05, root mean square error of approximation (0.044 (0.000–0.080)) and standardized root mean square residual (0.065) were close to zero, and the rest of the fit indices reached the appropriate values close to unity (goodness of fit index 1⁄4 0.951, average goodness of fit index 1⁄4 0.912, Bentler– Bonett normed fit index 1⁄4 0.863, Bentler – Bonett nonnormed fit index 1⁄4 0.941, robust comparative fit index 1⁄4 0.928, incremental fit index 1⁄4 0.967). The result of the analysis shows that most of the relationships posited in the model are supported for the sample as a whole.

Table 2. Evaluation of Hypotheses

Hypothesis	***Path***	***Parameter***	***T***	***Results***
H1a	No Customer Leakage – Customer Satisfaction	.204	2.905	Supported
H1b	No Customer Leakage –Employee Satisfaction	.414	6.163	Supported
H1c	No Supplier Leakage – Customer Satisfaction	-.142	-1.981	Supported

H1d	No Supplier Leakage – Employee Satisfaction	.055	.896	Not Supported
H2	Grow and competitive position – Employee Satisfaction	.215	2.700	Supported
H3	Employee Satisfaction —Customer Satisfaction	.380	5.365	Supported
Control	% of foreign customers – Customer Satisfaction	.156	2.505	Supported
Control	% of foreign customers – No Supplier Leakage	-.211	-1.995	Supported
Control	% of foreign customers— No Customer Leakage	-.077	-.099	Not Supported
Control	Size – No Customers Leakage	-.379	-4.989	Supported

Client leakage affects customer satisfaction in a positive and significant way, as we propose in H1a. This finding corroborates the models of some authors. High quality service and enhancing customer satisfaction are widely recognized as important factors leading to the success of companies in the hotel, catering, and tourism industries (Barsky & Labagh, 1992; Choi & Chu, 2001; Legoherel, 1998). A customer who perceives economic robustness and receives what she or he expects from a hotel stay is more likely to be satisfied (Bowen & Shoemaker, 1998). The variable of client leakage also significantly and positively affects employee satisfaction. This fact corroborates H1b.

On another note, findings indicate that the relationship between supplier leakage and customer satisfaction exists but is negative. As previously mentioned, this fact can be explained due to the fact that many consumers want domestic products (Cronin et al., 2000; Spreng & Mackoy, 1996). This fact supports the relationship expressed in H1c.

The growth and competitive position variable directly and positively affects employee satisfaction. This finding supports H2. This result corroborates the research of Lam et al. (2001) who argue that employees are likely to feel greater job satisfaction if there are opportunities for growth and advancement. The results described in Silva's (2006) study present similar findings. This author argues that an important trait for job satisfaction in the hotel industry is the ability to have a degree of control within the organization where a person works.

Employee satisfaction positively affects satisfaction amongst customers. The significance of this variable introduced in our model lends support to H3. In this hypothesis, we discussed the relationship between employee satisfaction and customer satisfaction. Other researchers have also analyzed this relationship. Research has indicated that the level of service provided by employees is an important factor in determining whether hotel guests are satisfied with their experiences and are likely to return to a particular hotel in the future (Choi & Chu, 2001). The conclusions of these studies and others we have previously mentioned are corroborated by our findings (as shown in Table 2).

The size of the hotel, measured by the number of rooms, significantly affects customer leakage.

Finally, after attempting to analyze the effect of the percentage of foreign customers in our constructs, we found that this variable only affects customer satisfaction. Research has shown that the intention of Chinese customers to stay at a particular hotel is related to the usability and quality of a hotel's website (Bai, Law, & Wen, 2008). If Chinese customers do not feel that a hotel's website is easy to use, then they are less likely to actually purchase a room from that hotel. Instead, they will seek out a hotel that has a website that they feel is easy to use.

Conclusions

This paper examines the relationships between leakage and employee/customer satisfaction and the growth and competitive position of hotel firms.

Our main contribution lies in demonstrating that an entrepreneurial environment, measured as a low level of leakage, directly and positively affects improvements in employee and customer satisfaction, thereby enhancing company competitiveness.

We analyzed the relationship between customer leakage and employee satisfaction in the tourism industry, using some elements of the theoretical framework developed by Chi and Gursoy (2009) and Supradist (2004). In the study by Supradist, leakage is only analyzed in a qualitative way. We also conducted a quantitative analysis, calculating the leakage produced by customers and the leakage caused by suppliers. In the second part of our model, we used part of the Chi and Gursoy (2009) model, adding more variables, such as growth and competitive position, and foreign customers.

The results of this paper are of interest to tourism firms because they may serve as a means of assessing their economic situation. For example, it might be helpful for a hotel company to know what their level of leakage is and how this can affect the level of satisfaction among their customers and employees. Furthermore, the study may be of interest to the region under study as it provides an approach to the entrepreneur's environment from a viewpoint measured through leakage.

The main limitations of this article are that the calculations are only carried out in a particular region. In addition, we encountered difficulties due to the reticence of many respondents to reply to questions related to financial issues, which would have enriched our model.

Despite these limitations, the study provides interesting findings, which suggest that there is a relationship between growth and competitive position and employee satisfaction. An interesting relationship between employee satisfaction and customer satisfaction has also been found. We calculated the leakage of each hotel and the relationship with customer and employee satisfaction, classifying two kinds of leakage: supplier leakage and customer leakage and found a relationship between leakage and employee/customer satisfaction (as shown in Table 2).

Future research could examine the leakage phenomenon in other sectors, such as transport, holiday planning, and restaurants, in line with the tourism value chain described by Gollub et al. (2004). We could also extend this study to other regions in order to generalize the model.

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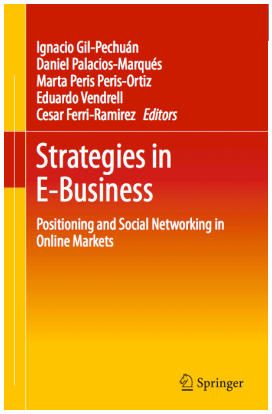
Crowdsourcing as a competitive advantage for new business models



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Chapter 3
Crowdsourcing as a Competitive Advantage for New Business Models

Fernando J. Garrigos-Simon, Yeamduan Narangajavana and José Luis Galdón-Salvador

Abstract The current organizational environment is characterized by the evolution and transformation of information and communication technologies, the eruption of social networks, and, with it, the growing importance of the participation of customers and other contributors in the behavior of these firms. Participating customers are increasingly influencing the development of marketing initiatives in the production process of firms, while the development of social networks and online communities has engendered new business or strategic models where diverse participants in social networks are becoming the crucial element for success. Taking into account these facts, this chapter focuses on the importance of this participation through the development of "crowdsourcing". The chapter defines the concept, analyzes its possible uses for the improvement of different organizational areas, and finally explains the crowdsourcing implementation process via a series of steps. The study is important as it opens up new areas of research in the literature and also provides some practical analysis and examples of its use by organizations.

3.1 Introduction

The evolution of information and communication technology (ICT), coupled with the growth of the Internet and social networks, has transformed business model in recent years (Buhalis and O'Connor 2005, Garrigos 2010). In the new arena, both

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"CROWDSOURCING AS A COMPETITIVE ADVANTAGE FOR NEW BUSINESS MODELS"

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Abstract

The current organizational environment is characterized by the evolution and transformation of information and communication technologies, the eruption of social networks, and, with it, the growing importance of the participation of customers and other contributors in the behavior of these firms. Participating customers are increasingly influencing the development of marketing initiatives in the production process of firms, while the development of social networks and online communities has engendered new business or strategic models where diverse participants in social networks are becoming the crucial element for success. Taking into account these facts, this chapter focuses on the importance of this participation through the development of "crowdsourcing". The chapter defines the concept, analyzes its possible uses for the improvement of different organizational areas, and finally explains the crowdsourcing implementation process via a series of steps. The study is important as it opens up new areas of research in the literature, and also provides some practical analysis and examples of its use by organizations.

INTRODUCTION

The evolution of information and communication technology (ICT), coupled with the growth of the Internet and social networks, has transformed business model in recent years. In the new arena, both firms and customers want to jointly participate in almost all the processes of business development. Today, the importance of the crowd is essential to understanding the new business environment (Garrigos et al. 2011).

One of the most innovative developments now being used by organizations is crowdsourcing, "a participative distributed online process that allows the undertaking of a task for the resolution of a problem" (Estelles and Gonzalez 2012). By concentrating on this fact, this chapter attempts to define and explore the importance of crowdsourcing activities in the competitiveness of firms. It begins by providing an explanation of the relevance of social networks and the crowd in Internet activities by conducting an in-depth study of the relevant literature. Following this, the chapter focuses on describing the main possible uses of crowdsourcing, and also provides several examples of it use in organizations. The analysis continues with a section that presents and explains the processes needed in order to carry out crowdsourcing activities or projects, based mainly on the work of Geiger et al. 2011. The chapter ends with conclusions and limitations of the study.

CROWD PARTICIPATION

The networking potential promoted by new innovations "drives all of society and corporations to work faster, create and manage more interdependencies, and operate on global markets" (Kalpic and Bernus 2006). In the new arena, "as products and services become dematerialized, and the value chain itself no longer has a physical dimension", a change in the conception and analysis of organizations is paramount, particularly in cases where both the product and supply and demand chain are digitalized, "in sectors such as banking, insurance, telecommunications, news, entertainment, music, advertising, and certain areas of the public sector" (Peppard and Rylander 2006).

In addition, the transformation of the customer from a passive client into a hyperactive one who wants to participate in all production processes

(Shiffman 2008) and the development of social networks are changing the view of production itself, forcing organizations to create a link with the market and interact, as well as obliging them to be open and cooperative with customers and other stakeholders in all production processes. In this context, according to Peppard and Rylander (2006), "the value chain concept becomes an inappropriate device with which to analyze many industries today and uncover sources of value". It is therefore necessary to move from the value chain to the value network concept where "value is co-created by a combination of players in the network" (ibid).

In the new framework, as Garrigos et al. (2011) point out, without the participation of users, we could not understand the new business environment. This fact is also stressed by Fuchs et al. (2010), who suggest that "the user is an integral part in the production process of content, tastes, emotions, goods, contacts, relevance, reputation, feedback, storage and server capacity, connectivity, and intelligence". The participation of people, not only customers or employees, in all the processes of a firm is highly relevant to crowdsourcing, which has evolved into an important business model in the new era.

CROWDSOURCING IN THE LITERATURE

Crowdsourcing, also known as "massive outsourcing" or "voluntary outsourcing", is conceived in this study as the act of taking a job or a specific task usually performed by an employee of the company, or more widely termed by a "designated agent", such as a contractor (Howe 2011), and outsourcing it through an open call to a large group of people or a community (crowd or mass) over the Internet.

The expression was coined by Jeff Howe in the June 2006 issue of the computer magazine *Wired* (Howe 2006a). For this author, "crowdsourcing represents the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call". This can take the form of peer-production (when the job is performed collaboratively), but is also often undertaken by lone individuals (Howe 2006b).

The term, defined also as "the outsourcing of tasks to the general Internet public" (Kleemann et al. 2008), "describes a new web-based business

model" (Brabham 2008), a "strategic model" (ibid, p.79) or "a new innovation business model through the Internet" (Ling 2010), aimed at "animating individuals to make a contribution to the firm's production process for free or for significantly less than that contribution is worth to the firm" (Kleemann et al. 2008).

THE USE OF CROWDSOURCING

Crowdsourcing can be viewed as a development of the classical "self-service" which emerged with the evolution of department stores and the introduction of the first vending machines at the end of the nineteenth century. These guiding principles became prevalent in grocery stores and many areas of retailing, and also within tourism organizations, such as fast-food chains, since the 1970s (Kleemann et al. 2008).

The crowdsourcing process has expanded since the 1990s with the growth of the Internet, which played an important role in creating new forms of cooperation between firms and consumers in the production process and service provision, including customers considered as "co-workers" (Rieder and Voß 2010). In this regard, crowdsourcing can be viewed as a "form of the integration of users or consumers in internal processes of value creation" (Kleemann et al. 2008). However, and apart from customers or users who can be considered the essence of crowdsourcing, the process can also include "all kinds of stakeholders who are not employees of the organization" (Garrigos et al. 2012), amateurs or even the general public ("students, young graduates, scientists or simply individuals" (Estellés and Gonzalez 2012), in order to improve the production process, carry out any of the organization's tasks, and undertake the solution of problems and the generation of open innovations by the crowd (ibid, p. 196). With their sudden expansion, social networks have made possible, and promoted, the development and profusion of the model, alongside the development and the instrumentalization of very diverse kinds of remuneration and motivation mechanisms for participants in the process (Geiger et al. 2011).

Nevertheless, authors such as Brabham (2008) point out that, "crowdsourcing is not merely a Web 2.0 buzzword, but is instead a strategic model to attract an interested, motivated crowd of individuals capable of

providing solutions superior in quality and quantity to those that even traditional forms of business can".

Although Poetz and Schreier (2012) focus on the importance of outsourcing the stage of idea generation stage to a potentially large and unknown population in the form of an open call, as Brabham (2008) puts it the crowd can also help to design products, to produce memorable commercials and images, and to outperform the industry faster and cheaper than even the experts in their fields. In this sense, it can be conceived as a "general-purpose problem-solving method" (Doan et al. 2011) that can directly help an enterprise in every aspect of the lifecycle of a product or service (Porta et al. 2008)

Moreover, the process could be very broad in domains ranging from tourism to t-shirt design. For instance, we believe that crowdsourcing can help to capture, systemize or analyze large amounts of data (see also citizen science), it can let the public be the one to invent and develop new technology, solve the problems that stump corporate scientific researchers, improve a process or algorithm (e.g. human-based computing, and a developer community), finance some processes or product development (crowdfunding), carry out a design task (also known as community-based design (e.g. shirts), and distributed participatory design), or a broad routine or cognitive task, develop products or processes (through the generation or exploitation of creative ideas (Estelles and Gonzalez 2012), produce memorable commercials, or monitoring, rating or recommending products, processes, services, or event texts, images or commercials.

In short, the crowdsourcing process could include diverse tasks previously developed within an organization, from the design of a product or process, product development and configuration, solving problems, creating content, corporate R&D, advertising, and quality monitoring (Brabham 2008, Howe 2006, Kleemann et al. 2008), to the extent of almost every step in an organization's value chain (examples of crowdsourcing can be seen in Brabham 2008, Kleemann et al. 2008, Geiger et al. 2011, Buhalis et al. 2011, or Estelles and Gonzalez 2012).

In addition, the process allows for the participation of customers, but also the participation of every kind of stakeholder or member of the public interested in generating an idea or developing a task. Obviously, as "the crowd outperforms industry faster and cheaper than even the top minds in

the fields" (Brabham 2008), the crowdsourcing procedure is essential as it represents "a profound paradigm shift in our view of the professional, of the corporation, of the global commons, and of the value of intellectual labor in a transnational world" (ibid).

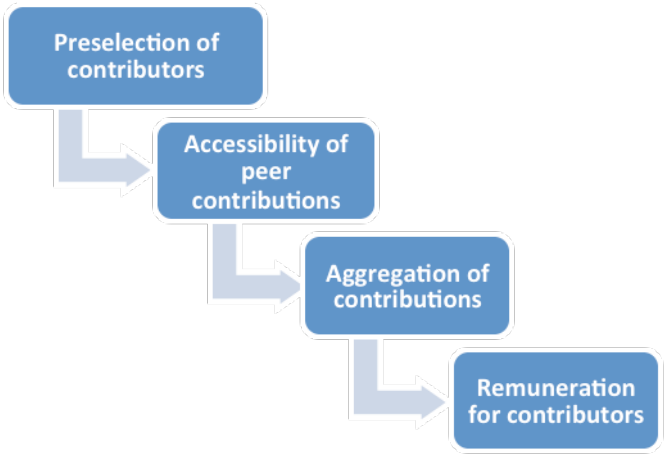
Examples of traditional outsourcing to non-employees include ticket machines and online ticket sales, e-shopping and self-scanning in retail, self check-in at offices, or for transportation and the wide range of transactions in tourism, as well as banking and investments that individuals can carry out via the Internet (Kleeman et al. 2008). Going further, extensive crowdsourcing has been utilized to identify new brands, operational activities such as marketing (e.g. Starbucks Idea), or user-generated content for social media Websites (e.g. Facebook) (Rieder and Voß 2010). "User-generated [advertising] content is a favorite of companies like JetBlue Sony and Chrysler, hoping to reach young, tech-savvy consumers who will spread their marketing messages [virally] around the Web" (Brabham 2008).

Nevertheless, and apart from marketing, crowdsourcing can be seen as a mechanism to improve the development of organizations, with several applications providing a view of a problem-solving model that can be generalized and applied to both mundane and highly complex tasks (Brabham 2008). Briefly put, people can create and submit ideas for products, processes, or the designs of all kinds of organizations.

STAGES OF CROWDSOURCING

In each crowdsourcing project, we can identify four dimensions that describe how crowdsourcing processes develop. These four dimensions or stages are shown in Figure 1. This figure displays the different stages that are developed over time.

Figure 1. Crowdsourcing stages. Source: Adapted from Geiger et al. (2011)



The first stage is *the preselection of contributors*. During this stage, the crowd of potential contributors is selected and the crowdsourcing organization makes an open call to the group. In the literature, several authors discuss the different strategies with regard to the open call. Feller et al. (2009), for example, describe two different strategies in the selection of potential contributors: maximizing the size of the crowd and making a pre-selection of contributors with a filter, depending on their desirable skills. Vukovic and Bartolini (2010) categorize the type of strategy depending on the contract that the crowd has with the enterprise.

In this vein, an internal call is directed to the employees of the firm, while an external call would be directed towards non-employees, and the hybrid model would be an open call to both employees and non-employees alike. Other possible destinations of the call include a large group of people (Howe 2006a), i.e. the general Internet public (Kleeman et al. 2008), consumers (Kleeman et al. 2008) and online communities (Whitla 2009).

The second stage concerns *the accessibility of peer contributions.* During this stage, the crowdsourcing organization must decide how contributors can access the work of the other contributors (Howe 2009). Geiger et al. (2011) propose four possible levels of access for contributors based on the degree of accessibility. These possible means of access are: *none* (contributors cannot see the projects of the other participants); *view* (all contributions are visible to the contributors); *assess* (contributors can see, evaluate, or comment on the other work); and *modify* (contributions can be modified, completed or deleted by any author (Geiger et al. 2011). On this point, understanding the importance of factors such as intellectual property rights and information security are critical. The greater the access given to contributors, the more efforts should be made to ensure the safety of all involved (Vukovic and Bartolini 2010).

The third stage of the crowdsourcing process is *the aggregation of contributions.* During this stage, the crowdsourcing organization must unify all of the selected contributions with the aim of improving the final project results (Geiger et al. 2011). It is also during this stage that the contributions that have not reached the expected quality are discarded. If the number of contributions is high, only the best contributions are selected (Schenk and Guittard 2011).This is one of the most important stage, as the results depend on the ability to verify the data and to gauge the quality of the work (Estellés and González 2012). In evaluating the quality of contributions, it is also common to include the results of voting on the part of other contributors (Sorokin and Forsyth 2008).

Finally, the last crowdsourcing stage is the *remuneration for contributors*. As we know, crowdsourcing projects can provide gratification for the authors of the selected contributions. In line with the study by Geiger et al., there are three kinds of possible contributions: *no remuneration* (contributors offer their work on a voluntary basis); *fixed* (all of the selected contributions result in a fixed remuneration, which is previously agreed upon); and *success-based* (the incentives depend on the success of the project) (Geiger et al. 2011). Other simple classifications of crowdsourcing project incentives are *monetary* and *non-monetary* (Vukovic and Bartolini 2010). In *non-monetary* projects, an organization that uses crowdsourcing must endeavor to motivate the contributors. Possible motivations for contributors can involve passion for the subject in hand, fun, establishing

reputation and personal achievement (Leimeister et al. 2009), or social recognition and entertainment value (Kazai 2011).

CONCLUSIONS

This chapter focuses on the importance of crowdsourcing and how it can be used by organizations. After developing the concept and the definition of crowdsourcing, the study gives examples of the main types of crowdsourcing processes in the business literature. In this sense, the work analyzes its possible use in almost every step of an organization's value chain, from the marketing, design and development of products, processes and services, to the generation and exploitation of ideas and solutions to all kinds of problems. In addition, we have explained and focused on diverse stages for developing a crowdsourcing project: from the selection of the contributors to remuneration for selected works, considering participant access and contribution aggregation, using the model by Geiger et al. (2011) as a starting point and developing it.

We consider this work to be an important addition to the body of literature since there is scant research focused on the relevance of crowdsourcing. In addition, our work can open up new possibilities for the use of crowdsourcing by all types of organization, by providing new ideas on its use. We consider this to be a crucial step towards the success of new business or strategic models, understanding that organizations that promote the participation and diverse mechanisms of crowd motivation will succeed (Geiger et al. 2011), effectively utilizing the collaborative intelligence of internal and external stakeholders, as well as the general public.

We are conscious that this paper has also been an exploratory step towards analyzing the impact of crowdsourcing processes on organizations. We recognize the limits of this analysis and that these transformations need further research. For instance, future research might analyze the impact of social networks on firms and organizations, or consider using crowdsourcing throughout every step of the value chain or value network of organizations by concentrating on diverse economic sectors.

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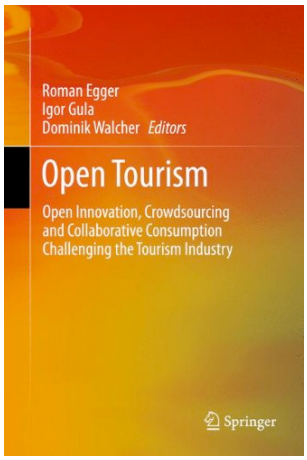
Improving hotel industry processes through crowdsourcing techniques



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To whom it may concern

The paper "Improving hotel industry Processes through crowdsourcing techniques" is a chapter accepted for publication and is currently in print in the book titled "Open Tourism" to be published in January 2015 by Springer.

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Improving hotel industry processes through crowdsourcing techniques

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Abstract

Innovation plays a critical role in the competitiveness of tourism organisations, especially in an environment which has changed radically as a result of advances in information and communication technologies, which are deeply transforming the tourism industry. Firms are being forced to create new business models and original techniques across their value chains in order to meet these new challenges, improve their results and in some cases, simply survive. One of the newest and most relevant activities being used by organisations is crowdsourcing, an activity defined as taking a specific task and outsourcing it to a large group of people via the internet, through an open call. This technique is particularly popular in marketing and although its development in other company areas is also relevant, few studies, especially in tourism literature, have researched its use for other purposes, such as improving the different processes in the value chain. In this paper, we delve into the concept of crowdsourcing as an element of a new business model. In this vein and after close examination of the previous literature, we analyse relevant examples of crowdsourcing in different firms so as to study and implement it to improve different processes in the hotel industry's value chain. The results show that crowdsourcing techniques can be used throughout firms, as they are useful in improving the diverse activities of hotels.

Keywords: crowdsourcing; open innovation; hospitality; tourism value chain.

INTRODUCTION

Businesses have to reinvent their strategies continuously in order to adapt to increasingly complex and dynamic market realities. In the hospitality industry, it is particularly difficult for companies to set themselves apart from their competitors and to offer better and cheaper products. Nowadays, hotels find it more difficult than before to remain competitive and consumers have unprecedented access to information and networks, which has increased competition in the sector. At the same time, new technologies have created new production models and ways of innovation in which customer participation has become the new value companies need to aspire to (Garrigós et al., 2012). In this vein, the implementation of new techniques and especially the participation of people, have to be considered a vital part of the industry's processes in order to improve and transform the value chain.

Tourism has a very close relationship with new information and communication technologies. It is believed that thorough knowledge of a wide range of quality techniques for spreading information online can improve the business management of tourism managers (Buhalis, 1998). However, tourism companies cannot focus solely on marketing. They must be open to new innovation which can improve all areas of their activities. In order to meet this challenge, our study aims to explore how the participation of customers and other stakeholders in crowdsourcing techniques in different organisational areas can help hotels to be more competitive. Messerly (2011) suggests that experience in the tourism industry has shown that the role of both direct and indirect dialogue is especially relevant. In this context, the use of new techniques to involve stakeholders in the different phases of the development, creation and selling of tourism products is critical not only to be competitive, but also to survive.

Crowdsourcing techniques centre on this. They are conceived as a combination of traditional outsourcing alongside the participation of a broad range of stakeholders and other people in a particular process. In this

chapter, we analyse how the new environment is changing, how it is essential to look at the value chain of organisations in this shifting environment and how we can use crowdsourcing techniques to transform and improve the different sections of the new value chain of organisations.

This chapter attempts to define and explore the importance of crowdsourcing activities in the value chain processes of companies. It begins with an in-depth study of the relevant literature about the transformation of the value chain in tourism and the concept of crowdsourcing. Following this, the paper focuses on describing the main uses of crowdsourcing and also provides several examples of its use in hotels. The chapter ends with the conclusions and limitations of the study.

THEORETICAL BACKGROUND

The transformation of the value chain in tourism

The relevance of supply chain management in general and the value chain of firms in particular, is constant in literature. The concept of the value chain, which was introduced by Porter (1985), suggests that a firm can divide its structure into different activities according to the behaviour of costs and the potential sources of differentiation.

In general, a tourism supply chain can be defined as "a network of tourism organisations engaged in different activities ranging from the supply of different components of tourism products/services, such as flights and accommodation to the distribution and marketing of the final tourism product at a specific tourism destination and involves a wide range of participants in both the private and public sectors" (Zhang et al., 2009: 347). However, due the broad definition of the tourism supply chain, in this paper we only aim to focus on the hotel value chain and more specifically, the activities that come under the hotel business umbrella.

Although studies of tourism value chains, tourism supply chains and tourism industry chains are not particularly common in literature (Yilmaz and Bititci, 2006; Zhang et al., 2009), there are some examples of Porter's value chain concept being applied or adapted to the tourism industry (Poon, 1993; Bieger, 1996). In this regard and based on the concept of the tourism

industry's "flexible specialisation", Poon (1993) examined tourism industry processes to establish a strategy to make tourism organisations more competitive. More recently, Bauer et al., (2008) adapted Porter's value chain for e-tourism based on the following five primary activities: infrastructure, technology development, marketing and sales, operations and service. In general, literature stresses that the tourism value chain begins when the customer makes an order (Yilmaz and Bititci, 2006). The creation and transmission of value to tourists is then one of the most relevant factors for organisations and even a source of competitive advantage, especially in the new context characterised by globalised competition and by increasingly informed customers who are more and more demanding (Flagestad and Hope, 2001). Hence, organisations have to respond to these demands if they want to be competitive or, in some cases, simply survive.

To cater for these demands, the use of new innovations and new technological toolkits are obviously essential. Gratzer et al., (2002) pointed out that new technologies in general and the internet in particular, redefine the entire distribution system in the tourism industry, bringing with it increased efficiency, reduced costs and improved customer service.

New innovations are promoting the use of networking and authors such as Kalpic and Bernus (2006) stress that this networking drives firms to work faster, managing more interdependencies and operating in global markets. In this respect, a change in the concept of a firm's value chain is crucial, especially in cases where both the product and supply chain are digitalised (sectors such as telecommunications, banking, entertainment, music, advertising, public sector, etc.) (Peppard and Rylander, 2006).

The behaviour of users changes constantly and is being transformed. The customer is shifting from being a passive client into a hyperactive one who wants to participate in all the production processes (Shiffman, 2008). Therefore, the development of social networks is changing the actual model of production, forcing companies to create links with the market and interact and cooperate with customers and other stakeholders in all the production processes.

Consequently, without the participation of users, we could not interpret the new business framework, as argued by Garrigós et al., (2011). This fact has also been pointed out by Fuchs et al., (2010), who noted that users are a

very important part in the production of content, in terms of the value added by their tastes, emotions, feedback, etc.

The participation of users in general, made up of many kinds of stakeholders, can be made effective through the use of crowdsourcing techniques, which can be applied to improve almost every part of the value chain of tourism firms in general and hotel enterprises in particular.

The use of crowdsourcing

In general terms, crowdsourcing is the online participative process that enables a task to be carried out to solve a problem (Estellés and González, 2012). Nowadays, crowdsourcing is one of the most innovative developments being used by organisations.

The expression crowdsourcing was coined by Jeff Howe in June 2006. "Crowdsourcing represents the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call". Crowdsourcing, which also takes the form of "massive outsourcing" or "voluntary outsourcing", is defined in this study as the act of taking a job or task usually performed by an employee of the firm or a contractor (Howe 2009) and outsourcing it through an open call to a large group of people or a community (crowd or mass) through the internet.

Several authors have defined the term as the outsourcing of tasks to the general internet public (Kleemann et al., 2008), which describes a new web-based business strategy (Brabham, 2008), or a new innovation business model through the internet (Ling 2010). Crowdsourcing can be described as a form of user integration in internal processes of value creation (Kleemann et al., 2008). However and apart from clients or users who can be deemed essential to crowdsourcing, the process can also add all types of stakeholders who are not employees of the firm (Garrigós et al., 2012), amateurs, or the general public (Estellés and González, 2012). The crowd can help to improve production processes, execute any of the firm's issues, obtain the solution to problems and generate open innovations (ibid). The expansion of social networks has enabled the model to flourish, alongside the development of very diverse types of remuneration and motivation mechanisms for participants in the process (Geiger et al., 2011).

Brabham (2008) states that, "crowdsourcing is not only a Web 2.0 buzzword, but is instead a strategic model with the intention of attracting a crowd of individuals capable of providing more and better solutions then traditional forms of business can".

Crowdsourcing allows organisations to capture and analyse large amounts of interesting data, making it possible for people to invent and develop new technologies, finance processes and develop products (crowdfunding), fix the problems of scientific researchers, execute a design task or routine, develop products and processes through the generation or exploitation of creative ideas (Estellés and González 2012), produce memorable commercials, or rate and recommend products, processes, services, etc.

Poetz and Schreier (2012) highlight the importance of outsourcing the stage of idea generation to a potentially large and unknown population through an open call. In this context, crowdsourcing can be viewed as a general-purpose problem-solving method (Doan et al., 2011) that can rapidly help organisations in all the processes of a product or service life-cycle (Porta et al., 2008). However, crowdsourcing can be widely applied not only to idea generation or specific problem-solving, but also as a new source of innovation at almost every step of the value chain.

In these processes, the participation of customers and all types of stakeholders or members of the public who are interested in generating new ideas or developing tasks becomes enormously important to the organisation.

Empirical applications

As mentioned above, the main purpose of this study is to assess the transformation of the tourism value chain through the implementation of new models of collaborative participation such as crowdsourcing techniques.

To address the activities that make up an organisation's value, a difference needs to be made between a business's primary activities and its support activities. Primary activities are the activities involved in creation, customer sales, distribution and after-sales service. These activities include internal logistics, operations, external logistics, marketing and sales and customer

service. Support activities are responsible for sustaining primary activities, providing purchased inputs, technology, human resources and various functions across the enterprise (infrastructure). As we have previously noted, in the case of e-tourism, recent research (e.g. Bauer et al., 2008) has focused on the activities that are included in Porter's value chain, in the following five activities: infrastructure, technology development, marketing and sales, operations and service.

This section follows a similar approach of the tourism value chain to the one developed by Bauer et al., (2008), in focusing on the use of crowdsourcing in the diverse phases of the tourism value chain.

Marketing, sales and service

According to Li and Petrick (2008), in the future tourism marketing environment, tourists should be considered as value co-creators. Thus, the participation of tourists, as well as other stakeholders, in the creation of value is essential, therefore making crowdsourcing a fundamental tool for organisations' general purposes. More specifically, outsourcing through an open call on the Internet can be tied to operational activities, such as marketing (e.g. Starbucks Idea) (Rieder and Voß, 2010). In this vein, extensive crowdsourcing has been utilised to identify a new tourism brand for a country (Messerly, 2011) and this can be extended to diverse kinds of destinations and tourism organisations. The Tourism Authority of Thailand carried out an excellent example of this. The government launched an open call asking anybody who had visited the country to submit their "Amazing moments" (http://www.MostAmazingShow.com). The Tourism Authority of Thailand hopes to increase the number of visitors to the country through this innovative idea that shows the attractions of Thailand through the different photographs submitted.

One of the most recent examples of hospitality innovation using this technique is the Hesperia Hotels chain's "Suite H" project. In this programme, centred on the slogan "putting ideas into practice", clients can share their innovative ideas with hotel managers. After a close study, the best ideas are implemented and the owners of the ideas rewarded. Over the last year, 397 ideas have been received as part of this programme, 94 of

which have been marked as "possible" whilst 29 are at the development stage.

Crowdsourcing includes advice that customers give to other customers by writing product reviews or uploading information to virtual travel agencies, different networks, specific sites such as ctrips.com, gazetters.com, IGOUGO, TripAdvisor and Wayn.com (Buhalis et al., 2011; Sigala, 2009) or the web sites of hotel companies such as Marriot (Au et al., 2010) and Sheraton (Sigala and Marinidis, 2009). It can also help organisations to identify any observable changes in market supply or consumer demand, complementing traditional market research (Kleemann et al., 2008). Moreover, crowdsourcing is useful in improving customer service; for instance, some technology companies are using different crowdsourcing techniques in the UK and Spain to address specific user problems and answer and provide solutions to their demands. This encourages other users to participate in the process.

In addition, we should point out that crowdsourcing is essential to satisfy the individual demands of specific tourist segments, such as college tourists (Zheng, 2010), thus making its use in the marketing arena fundamental. Another of the best-known examples of crowdsourcing in the hospitality industry is the Starbuck's "MyStarbucksIdea" platform (Sigala, 2012b), where customers can share feedback and ideas and make suggestions about existing or new products (Müller 2011). According to Sigala (2012a), three categories of new services were defined by Starbucks in this initiative to facilitate the online organisation and search for submitted ideas. Each idea was sub-divided into other sub-groups of ideas, such as product ideas (e.g. coffee, tea, food and merchandising, etc.); experience ideas (e.g. ordering, payment, atmosphere, etc.) and involvement ideas (building community, social responsibility, etc.). Another important example is the case of Sheraton. According to Sigala and Marinidis (2009), technological innovations, such as the web map services offered on Sheraton's website, promote the participation of customers, allowing them to search, contribute and read user-generated content about Sheraton properties. Sigala and Marinidis (2009) argue that this is important because Sheraton can take advantage of this user-generated content for new service development (staff can use this feedback for market research and identify opportunities to provide new services); business process improvement (user-generated

content allows operational problems identified by guests to be addressed) and CRM (e.g. user-generated content and social networking amongst guests enables the creation of a community of loyal guests that stay at Sheraton properties and increases the opportunities to communicate with them, identifying valuable customers for future personalised targeting and many other CRM practices). If we extend customer participation to other stakeholders through open calls, these benefits will certainly increase.

Operations

Outsourcing through open calls on the internet, or crowdsourcing, have been used to produce user-generated content for social media websites (e.g. Facebook) (Rieder and Voß, 2010). Crowdsourcing is essential to improve production processes in tourism generally and by extension, in the hospitality sector, especially in a context where networking in the production process is critical.

Crowdsourcing has been used as a mechanism to develop tourism destinations or cities, such as Seattle and Vancouver, as reported by Mechant et al., (2011) and the city of Ghent, which was analysed by these authors. In addition, it offers endless opportunities to contribute to the tourism disaster management process, which is essential for tourism destinations and organisations, as, for example, it complements geospatial analysis with Geographic Information Systems (Faulkner, 2001). Crowdsourcing applications and techniques are also very useful to collect data and offer planning and guides for trips. Hence, augmented reality, mobile platforms, websites and crowdsourcing systems may be enriched by uploading local information that is not provided by classic network members (Leo, 2010). The content and information generated by users of Web 2.0 technologies are having a tremendous impact not only on the decision-making behaviour of internet users, but also on the e-business model that a tourism business needs to develop and to adapt (Sigala, 2009).

This is essential for travel companies and also hotel companies when developing their products and adapting them to the different types of tourists. A closer look at this issue reveals several crowdsourcing applications that provide insight into the problem-solving model that can be generalised and applied to both mundane and highly complex tasks

(Brabham, 2008). Particularly, we think that crowdsourcing techniques are useful in improving the development of products and processes. According to Zhang et al., (2009), as product development is not an easy task but rather a complex process, it requires efforts from different players in the supply chain. Hence, the possibilities of crowdsourcing processes in these tasks are crucial.

Of further importance is the management of inventories. According to Zhang et al., (2009), inventory management problems, such as overbooking and revenue/yield management, have been broadly discussed in tourism literature. These authors argue that crowdsourcing processes can help to create mechanisms, such as algorithms and technological applications, to improve these problems, as well as creating innovative formulas and recommendations for hotels to answer these questions.

In addition to the "MyStarbucksIdea", which is obviously not limited to the area of marketing, as it includes the improvement of operation processes that could be applied to hotels, we think that the participation of users and other stakeholders and the information that they can provide through crowdsourcing processes, as well as their participation in social networks, is important in designing and adapting all kinds of hotel services to cater for customer needs. Finally, we have to stress the importance of crowdsourcing to improve not only operations themselves, but also the strategic use of these operations. For instance, Harpur and Brown (2012), in their analysis of tourism organisations, highlighted that firms which take into account the strategic aspects of their operations can improve the profitability of their company. The financial benefits of outsourcing, therefore, have led to studies into how tourist operations can effectively outsource (Lam and Han, 2005). However, Espino-Rodriguez (2004), who analysed the trend in outsourcing hotel operations and explained the importance of this phenomenon, underlined the relevance of strategic reasons for outsourcing. According to this author, the main reasons centre on improving quality and service, making operations more flexible and concentrating on core operations, compared to the traditional focus on outsourcing for tactical reasons based on cost reductions. Hence, crowdsourcing can enhance the specialisation of hotels in their core competences and ensure the use of external innovations to improve tasks. It is important to highlight the risks of outsourcing to a diverse group of people. In order to maximise process

quality, the organisation must have people who regulate quality inputs and manage and select the inputs of the crowd, etc.

To sum up, people can create and submit ideas for products, processes, or the design of all kinds of destinations and tourism organisations, such as hotels and their operations and production processes, in particular.

Technology development

This consists of a range of activities that can be broadly grouped into efforts to improve products and processes. New forms of organisation, communication, relationships and innovation management establish new business models. Understanding and anticipating enables organisations and their leaders to prepare for new approaches to innovation and creation.

If we focus on innovation, crowdsourcing is a tool of crucial importance. Much has been written on the importance of innovation as a strategy for achieving competitive advantage (Ottenbacher and Gnoth, 2005), the potential of creating a culture of continuous innovation and innovation as a method to erect barriers to imitation by competitors (Harrington, 2004). We must emphasise that a simple query on the internet should not be confused with crowdsourcing. We talk about crowdsourcing when the company has done previous work to focus on a problem and they manage their ideas as well as possible (Benkler, 2006). In many cases, companies face challenges in their production processes and try to solve them through innovation and new ideas. In these cases, the company can enlist the help of the crowd who not only provide benefits of cost, time and information, but also, more importantly, knowledge. As Brabham (2009) highlights, the processes of a company centre on airing the problem online, choosing the best solution of those proposed, rewarding the winner and mass producing the concept for its own benefit. One of the most interesting examples is the company, Innocentive. This platform allows companies with a problem that cannot be fixed internally (or they do not have the necessary resources to do so) to share it with the crowd to receive proposals for a solution. The company describes the problem as precisely as possible and offers a reward for the best solution received. In this case, after the best solution to the problem has been chosen, the company rewards the winner and carries out this project.

There are other platforms like Wilogo that not only offer the solution but are also responsible for the industrialisation and development of the project.

In this sense, one of the current projects on the Innocentive platform is of particular interest to the hospitality field. It is well known that one of the critical problems of hotels is laundry (in terms of costs, energy consumption, etc.). In this case, one of the projects centres on the search for high efficiency washers to improve performance and decrease water and energy consumption. The platform www.solucioneo.com facilitates and enables the application of crowdsourcing in organisations, accelerates innovation to increase competitiveness, opens organisations to external talent, shortens the time within which organisations can find a solution and reduces the risks of innovation. At the same time, it allows organisations to access new ideas that otherwise would not have been possible due to lack of time, knowledge and/or lack of technological assets.

One of a hotel's greatest expenses is its energy costs. A potential challenge could be to present the energy consumption of a hotel and offer a reward for the best energy-saving solution received. This idea has been put into practice in the campaign "Ride a Bike, Help Power the Hotel, & Get a Free Meal in Copenhagen". This project is being carried out by one of the "greenest hotels", the Crowne Plaza Copenhagen Towers. The idea consists of riding a bike to generate electricity for the hotel. People who generate 10 watt hours or more of electricity are rewarded with a free meal, costing about $45.

Company infrastructure

This part of the value chain consists of several activities, such as finance, accounting, quality management, public relations and legal and general management. The infrastructure usually supports the entire chain and not only individual activities. The infrastructure of the company is a powerful source of competitive advantage, as it supports the primary activities in decision-making, including good management information systems, sound financial strategy and managing legal operations.

One of the most innovative cases is the company, Wiseri. Their business model centres on trying to differentiate themselves from traditional employment portals by using crowdsourcing. Their experts, known as

"wisors", are network users, who have experience in different professional areas and voluntarily assess the applications corresponding to their field. They receive a number of prizes as a reward for their application assessment work. These types of platforms are of great help to human resource departments in companies because they receive a selection of CVs which have been properly evaluated by experts.

In the field of finance, we must highlight the crowdfunding phenomenon, which is a type of crowdsourcing often used by companies. The main idea of crowdfunding is to obtain external finance from a large audience (the "crowd"), where each member provides a very small amount, instead of big investments from small groups.

Kickstarter, the North American company, is probably the best known organisation in this area and presents itself as the largest crowdfunding platform for creative projects in the world. The creators of each project publish the details of their project and establish a funding goal and a deadline. The projects are then evaluated by Kickstarter. Meanwhile, members of the crowd donate money in exchange for a "reward" (mainly the product or the experience in question). The advantage for the patrons is that they only make payments when the project reaches its funding goal and begins the production stage. Kickstarter charges a commission fee of about 5% of the total project funding obtained (only for projects that reach their goal). As of the end of 2013, Kickstarter had launched 73,065 successful projects (including the successful Pebble Watch and Elevation iPhone Dock). It has also contributed to many projects that have reached their goals in various fields such as technology, design and fashion. The amount of money obtained in all the projects so far has totalled over than $377 million.

Power4projects.com is the first crowdfunding and investment platform for the tourism and leisure industry. The platform enables a wide audience, such as private and professional investors, private equity and venture capital companies, to pinpoint opportunities to invest in projects and companies in the tourism and leisure industry. The platform provides a marketplace for public crowdfunding, crowd investing and for all types of investments.

Another platform with a large number of crowdfunding-based projects is www.lanzanos.com. The variety of projects found on the site includes entrepreneurs looking for funding to set up hotels of all kinds, from bed and breakfast establishments to luxury hotels. In the hospitality sector, this type

of technique can be used either to obtain the funding needed for a project in a hotel which is already open, or to finance a new hotel project.

Conclusions

Nowadays, new models of organisation, communication, relationships and talent management are breaking the barriers of time and space and establishing new patterns of doing business in tourism. Understanding and anticipation enables organisations and their leaders to prepare for and produce new approaches to promoting innovation and creation and to improving production, marketing and finance. However, change does not only consist of getting to know and understanding this new framework, it requires a change in attitude and, above all, a change of perspective and a new way of thinking aimed at obtaining greater value for firms based on crowd participation. In this new arena, the collaboration of the crowd is considered a part of all of the processes in the hospitality sector.

This paper has shown the importance of crowdsourcing and how it can transform the value chain of tourism organisations in general and hotel firms, in particular. After a detailed study of the transformation of the value chain through the development of new technologies and a review of the concept and the definition of crowdsourcing, our study provides examples of crowdsourcing techniques that can be used to improve the productivity of organisations and especially those in the tourism sector. The work analyses the main activities of organisations, focusing on the most relevant ones introduced by Bauer et al., (2008), namely, infrastructure, technology development, marketing and sales, operations and service.

The existing literature on the crowdsourcing concept is relatively limited. Accordingly, this research adds a novel contribution to crowdsourcing literature and evaluates it and its impact as a source of the transformation of the tourism value chain. Beyond its contribution to literature, the results of this paper also show that crowdsourcing techniques are of tremendous interest to organisations as a step towards making hotel business models successful, via the techniques that encourage crowd participation (Geiger et al., 2011).

We are aware that this is an exploratory study and that these transformations need further consideration. Therefore, future research should test the

theoretical topics examined on an empirical basis. However, the paper creates a new frame of analysis, considering certain empirical applications of crowdsourcing techniques and opening new areas of research. This work, finally, is of practical importance for practitioners and executives of tourist firms.

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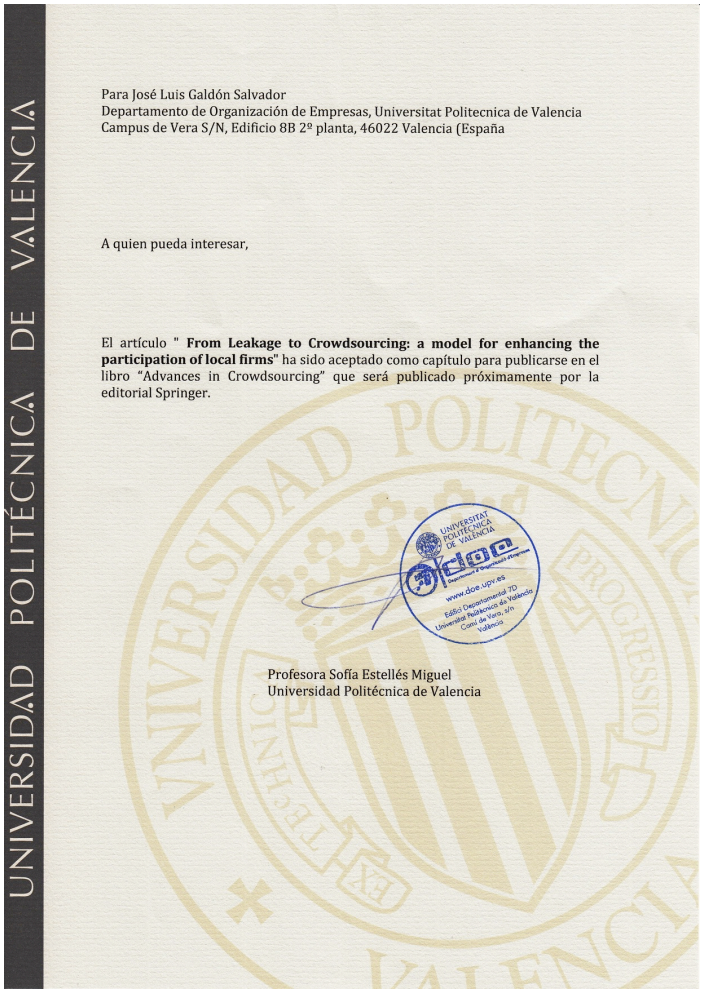
From Leakage to Crowdsourcing: a model for enhancing the participation of local firms



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A quien pueda interesar,

El artículo " **From Leakage to Crowdsourcing: a model for enhancing the participation of local firms**" ha sido aceptado como capítulo para publicarse en el libro "Advances in Crowdsourcing" que será publicado próximamente por la editorial Springer.

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From Leakage to Crowdsourcing: a model for enhancing the participation of local firms

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Abstract

Tourism is a critical part of the economy of any country. This is essentially because in addition to being the world's largest industry, tourism also has an important multiplier effect on other industries. However, not all tourism revenue remains in the local region and for this reason the concept of leakage becomes critical. Leakage studies the amount of revenue generated by tourists which does not stay in the destination country. This phenomenon occurs especially in developing countries, where lower local industrial development increases dependence on foreign countries. Therefore, the second part of the paper highlights the need to implement new business models in order to minimise leakage. For many authors, the best way to reduce the impact of leakage on the economy of different companies in a region is by enhancing linkages between local companies. The main concept in this case is to achieve the participation of the community. In this vein, one of the most important activities being used by firms is crowdsourcing, an activity defined as taking a specific task and outsourcing it to a large group of people via the Internet through an open call. This study delves into the concept of crowdsourcing presented as a technique for reducing leakage with the aim not only of increasing the satisfaction of employees and customers but also building a new

business model that empowers local economies by improving their entrepreneurial environment and helps hotels to improve their profitability.

Introduction

As has been seen in recent years, tourism has an extremely significant impact on an economy. For decades, numerous authors have emphasised the effects that tourism has on the development of regional economies (Wilson, 1998; Leiper, 1979), whilst the evolution of international tourist arrivals and productivity in the tourism sector evidence the industry's growing share of important ratios, such as production and employment worldwide (Capo et al., 2007).

Given that countries use tourism as an engine for development, such development has to be sustainable. This is the case when the wealth brought by tourists actually leads to an improvement in the local economy. At this point, authors like Mbaiwa (2005) argue that in nations where the tourism industry is dominated by foreign countries, its contribution to the GDP of local economies is greatly diminished. This is because tourism service bookings and payments are made in these foreign countries. Hence, both who really controls the main tourism enterprises (travel agencies, internet channels, tour operators, etc.) and also how many of the products bought by tourists are imported need to be weighed up. In the same vein, Torres (2003) avers that tourism development is usually associated with a growing demand for imported products which results in leakage to the economies of the countries of origin and competition with local producers.

This is where the idea of leakage comes into play, defined as revenue from tourism which does not remain in the country visited (imported products, taxes, foreign suppliers, etc.) (Lejarraga & Walkenhorst, 2010). As Sandbrook (2010) puts it, leakage can be seen as "the failure of tourist spending to remain in the destination economy".

Thus, given the potential that tourism has for the development of a particular region on one hand and the problems of leakage on the other, a balance has to be found that enables efficient management of tourism. We are thus faced with a new paradigm which is game changing for tourism businesses which need to adapt to a complex and diverse environment that has to be addressed using new business models (Garrigós et al., 2014).

In this chapter, the concept of leakage is defined, its problems in the tourist sector are presented and remedies that make it possible to reduce leakage are proposed. After examining the admittedly sparse literature about leakage, this chapter suggests reducing leakage by encouraging the creation of links that make it possible to build a strong business community in the place that receives the tourists (Chirenje et al., 2013). To achieve this, organisations, local councils, governments, businesses and other stakeholders need to enhance the participation of all local business owners. This will mean that tourism services in a particular region will be delivered by local firms and this directly lessens leakage.

To encourage participation by local business owners, this chapter examines the concept of crowdsourcing and suggests techniques based on it. Since the term is new, this chapter makes an important contribution to the literature as for the first time, it proposes using crowdsourcing techniques as a way of reducing leakage in tourism. Hence, this paper's main contribution is to show that crowdsourcing can increase the participation of local business owners by increasing linkages between firms, thereby reducing leakage and maximising the benefits that tourism brings to the local economy.

The importance of leakage: the problem and its solutions

There are relatively few studies about leakage in spite of its importance for the impact of tourism on the economy of a region. Authors such as Fennel (2003) discuss the importance of studying leakage because of its multiplier effect on the economy of a specific region. Leakage can also impact other industries and sectors but it is precisely in tourism where leakage is particularly important because tourism is one of the most important sectors for the economic development of any region (Mowforth & Munt, 2003).

Although studies of leakage are predominantly qualitative, some authors have quantified approximate leakage rates in certain regions. One of the most interesting conclusions drawn from these studies is the significant gap between developed and developing countries. Thus, developed countries have an average leakage of approximately between 10% and 20% while in developing countries the average goes up to 40% to 50% (Díaz Benavides, 2001; Meyer, 2007).

The concept of leakage is based on the idea that a major part of tourism expenditure returns to the region of origin. Thus, leakage occurs when income earned from tourist services in the host countries is not available because it does not stay in the local economies (Rahman, 2012). Examples are imports from suppliers outside the region (food, beverages, materials, subcontracting, etc.) or even foreign workers (Blake et al., 2008). Another case in which leakage is evident is when tourism spending does not even reach the destination region but stays in the tourists' home country. This happens when, for instance, tourism services are purchased from foreign operators, when commissions are paid to intermediaries and when there are airline taxes.

To better grasp the possible cases of leakage, some authors (Supradist, 2004) have differentiated between four types:

Pre-leakage means leakage taking place before tourists arrive in their destination. As mentioned above, the most frequent cases of this type of leakage would be bookings with foreign companies, tour operators, airlines, etc. *Internal leakage* is the proportion of goods and services which are imported and where direct labour comes from. *External leakage* is tourism spending that occurs outside the tourist region but is linked to local firms, such as when investors in a company are foreigners. Finally, there is *invisible leakage* which includes currency payments, currency exchange, taxes, etc. (Supradist, 2004).

Some authors maintain that leakage is directly related to the business community of an area. For example Lejarraga and Walkenhorst (2010) argue that tourism has both direct economic impacts (hotels, transport, etc.) and also indirect impacts which are the ones that directly affect local economies, such as foodstuffs, beverages, furniture, tour operators, etc. In turn, some studies relate job creation in a given area with the level of entrepreneurship of firms in that region (Sexton & Bowman-Upton, 1991).

At this point, it is important to note that there are certain localities which are more likely to suffer high levels of leakage than others. Regions whose economies are not able to meet the tourism industry's production and quality requirements for tourism services are much more vulnerable (Meyer 2007). There always has to be a balance between tourism demand in a region and the ability of local companies to meet this demand (Loon & Polakow, 2001).

Given the above, it is clear that even though leakage is an as yet little explored term, it is nonetheless a critical factor in tourism development in any community and especially in developing countries (Sandbrook, 2010). Hence, a more in-depth quantitative study of leakage is required in lockstep with putting forward solutions to decrease leakage in regions.

Few authors have investigated possible measures to reduce leakage. The study conducted by Supradist (2004) puts forward a series of practical measures to lessen it. These measures are arranged into a number of points that are summarised below:

- Increase online marketing to boost local tourism businesses vis-à-vis foreign ones.
- Try to reduce seasonal workers.
- Encourage setting up local businesses.
- Forge a strong link between local businesses so they become suppliers and meet tourism demand
- Promote local products in terms of food, beverages, souvenirs, and other items.

Furthermore, research by Galdón et al. (2013) suggests an appealing way to reduce leakage by creating an entrepreneurial environment in local businesses. Therefore, we believe that a region will have a greater entrepreneurial spirit when the business community is strongly tied to local economies so that the majority of the benefits associated with tourism stay in the region and consequently lead to economic development. The entrepreneurial framework does not focus on isolated individuals but centres on the ties and links created in order to build a business community that enhances the likelihood of success (Herrera Echeverri 2009).

Chirenje et al. (2013) propose a similar solution which is based on the idea that strong links should be forged between local businesses so that they can cater for all tourist service needs. To accomplish this, the study points out that the active engagement of local communities should be encouraged in order to retain as much tourism revenue in the region as possible (Chirenje et al., 2013).

This leads to the important conclusion that strong links have to be fashioned between local firms generating a powerful business community in order to reduce leakage (Láchar & Sanjay, 2010). The resources required to deliver tourism services would thus be provided by local businesses which would mean that the benefits would not leak away from the region.

Therefore, the involvement of entrepreneurs, organisations, and workers has to be encouraged to build this local business community. In places where there are high levels of leakage, economic profits dwindle when the participation of local communities in tourism falls (Kokkranikal et al., 2003). Consequently, our major contribution to the literature is to go one step further and propose crowdsourcing techniques as tools for promoting this participation. The next chapter delves into the concept of crowdsourcing and in particular emphasises how it can be used to create ties between local firms and thus directly reduce leakage in any region.

Crowdsourcing: the power of local participation

Over the past ten years, there have been significant developments in new information and communication technology (ICT) which, when combined with the rapid expansion of the Internet and social media, have created a new scenario with new business models for entrepreneurs and customers (Buhalis, 2011). This new scenario is based on the active participation of both workers and customers in all business processes. As a result, the importance of participation is crucial to understanding this new business environment (Garrigos et al., 2011).

Many authors have used the term Web 2.0 to describe this new technological environment. In this new scenario, the way we use the Internet changes and, of course, business models based on the Internet also change. The key difference lies in the user's new role as the core of the system. In fact, the main difference from the original Web 1.0 is that in the latter users had a passive role, being merely spectators and consumers of information. By contrast, in Web 2.0 the user becomes an active player and may even become a co-producer and co-creator of information (O'Reilly, 2007).

Hence, the transformation of the customer from a passive to a hyperactive one who can participate in all processes (Shiffman, 2008), and the

development of social media are changing the viewpoint not only of new business models but also production itself. Companies are being forced to adapt to this new paradigm in which they have to work hand-in-hand with customers and other stakeholders throughout the production process.

Consequently, if we combine the importance of the participation of people with advances in new technology based on Web 2.0, we come directly to the concept of crowdsourcing. The term was coined in 2006 by American journalist Jeffrey Howe, who defined it as "the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call" (Howe, 2006). Even though under this definition proposals are made openly, i.e. to everyone, it is possible to limit the public that will participate in the proposal. Following Leimister's study (2010), there are two potential audiences to which crowdsourcing proposals can be addressed: the Internet crowd (a large and heterogeneous group) and a smaller group of people who are organised hierarchically. This makes sense because not all Internet users will be able to collaborate and contribute their knowledge to a particular initiative.

This new concept has been gradually clarified and fine tuned over the years. This is because the concept is very broad and covers a multitude of possibilities, which means the types of crowdsourcing need to be classified in order to examine which one best dovetails with each situation. Howe himself (2008) defined the types of crowdsourcing based on four groups: crowd wisdom, crowd production, crowd voting and crowdfunding. Below is a definition of each one, together with how they can be customised in each case as initiatives to reduce leakage, which is the main purpose of this paper.

Crowd wisdom

This is a type of crowdsourcing based on collective intelligence. In turn, it can be subdivided into other types such as crowdcasting, where a contest is held with a prize for the first person to solve a particular problem, and crowdstorming, where ideas or solutions to tackle a problem are brainstormed.

Customising crowd wisdom as a corrective measure to reduce leakage might, for instance, involve internal competitions held in hotels in which customers suggest improvements. One of the real examples already in place using this approach is the Hesperia Hotels chain "Suite H" project. Under this programme focused on the theme of "putting ideas into practice", customers can share their innovative ideas with hotel managers. After careful examination, the best ideas are implemented and the owners of the ideas get a prize by way of reward. These initiatives improve customer and employee satisfaction and encourage them to take part which leads to a better environment that decreases leakage. This relationship is anchored in the work of Galdón et al. (2012) in which the connection between leakage and customer and employee satisfaction is empirically demonstrated.

Crowd production

In this case, a specific product is sought rather than a solution to a problem. There are products in any line of business which may require assistance of this kind when it comes to, for example, choosing a design. In the case studied in this paper, we propose using such initiatives for finding local suppliers and companies required to deliver tourist services in a region. More specifically, in the case of the hotel industry, hotel managers could find local suppliers to provide items such as food, consumables, office supplies, furniture, laundry, etc. Thus, these local companies could be invited to "compete" to be subcontracted by the hotels. In this way, and as long as local government policies support such initiatives, a strong local business community could be built that would lead to a significant reduction in leakage in the region (Chirenje et al., 2013).

Crowd voting

This is based on collecting information from users. In the tourism sector in particular, these techniques have been on the rise in recent years. Companies like Tripadvisor and Booking base their content on information posted by users on their websites. This is extremely significant since having thousands of views for free is invaluable for businesses when getting feedback on the quality of their services and the degree of customer satisfaction. The reviews and ratings given by customers are an important source of information as

can be seen in actual cases such as IgoUgo, TripAdvisor and Wayn.com (Buhalis et al., 2011; Sigala, 2009), and on the websites of hotel firms such as the Mel Sheraton (Sigala & Marinidis, 2009).

Thus, crowd voting can be used to reduce leakage basically by ensuring customer satisfaction is as high as possible so that they choose local businesses (restaurants, entertainment venues, hotels, etc.) because they are the best rated ones.

Crowdfunding

These techniques are used not to solve problems or put forward ideas but rather to obtain direct financing. In this type of initiative, funding is sought for a given project so users participate by making a financial contribution.

In the hotel industry there are real examples of websites that run crowdfunding projects. Power4projects.com is a crowdfunding platform in the tourism and leisure sector. The platform is aimed at a wide audience which is asked to provide funding for various projects. Another platform with a large number of projects based on crowdfunding is www.lanzanos.com. On this platform, there are entrepreneurs who seek funding, for instance, to open hotels of all types and categories. It also features projects that are underway but need extending or refinancing.

These financing techniques greatly help local enterprises that are starting out or which require funding to undertake business improvements. Again the involvement of people is crucial to foster links between local firms and thus reduce leakage. In addition, this often entails a way to compete with foreign companies that are economically more powerful.

Conclusions

Considered to be the world's largest industry, tourism is, in turn, crucial as the driving force behind the economies of many countries, especially developing ones. Therefore, companies and agencies alike seek to optimise the benefits that tourism can bring on all levels. Nonetheless, not all revenue from tourism remains in the region since some of it returns to the region of origin or even never reaches the destination. This is called leakage and

occurs in all tourist regions, although it is developing regions that suffer from it most. This chapter has defined the concept of leakage and presented possible solutions that researchers have proposed in their studies, even though the newness of the concept means there are very few of them.

One of the first conclusions drawn in this paper is that tourism industry enterprises need to seek out new business models to reduce leakage to the point required to increase their profits and by extension, the benefits for the region. Hence, the measures proposed to remedy leakage consist of those which are geared towards enhancing ties with local businesses in order to build a robust business community able to compete with foreign capital. As has been shown in this chapter, doing this means encouraging local entrepreneurs and customers to get involved in order to join forces and stimulate the local economy.

This active involvement and the expansion of new technology-based applications are the twin pillars on which crowdsourcing rests. This chapter proposes crowdsourcing-based measures to enhance ties between local firms and thus reduce leakage in a given region.

Our study is essential for companies because it sets out measures they can put in place to diminish leakage, and also for tourism planners who can acquire the tools they need to ensure that tourism revenue becomes a bigger driving force for the economic development of their regions by reducing leakage. Therefore, our main contribution to the literature is to have laid the theoretical foundations for reducing leakage using crowdsourcing techniques.

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Capítulo 3
Discusión general de los resultados

Cabe mencionar que los principales resultados alcanzados tras varios años de investigación, son la elaboración de la presente tesis doctoral y la publicación de los cinco artículos que la componen en revistas científicas y libros relevantes.

Como se ha visto a lo largo del presente documento, la tesis doctoral profundiza en dos conceptos principalmente: el leakage y el Crowdsourcing.

En cuanto al leakage se ha presentado un modelo matemático para su cálculo de forma cuantitativa ya que la literatura existente carecía de este tipo de modelos. Adicionalmente se ha calculado el leakage para los hoteles de la Comunidad Valenciana y finalmente se ha aprovechado esta herramienta de cálculo de leakage para presentar un modelo que relacione el nivel de leakage de un determinado hotel con importantes variables de la empresa (rentabilidad, satisfacción de clientes, satisfacción de empleados, etc.)

En cuanto al modelo presentado para el cálculo del leakage, se ha basado en un previo estudio de todas las variables que según los expertos inciden en la economía local (en términos de turismo). El primer resultado fruto de esta investigación ha sido recoger en una tabla todas las variables que han sido utilizadas por los autores en los últimos años. Tras este estudio, se ha creado un nuevo modelo seleccionando las variables que afectan a dos tipos de leakage: el leakage de clientes y el leakage de proveedores. Finalmente el leakage total de un determinado hotel será la suma de estos dos tipos de leakage. Como resultado de este análisis de la literatura existente se han seleccionado las siguientes variables:

- Leakage Proveedores: luz/agua/gas, comidas, bebidas, telecomunicaciones, salarios, mantenimiento, consumibles, decoración, limpieza, restaurantes, tours, otros.
- Leakage Clientes: Porcentaje de habitaciones vendidas vía hotel, porcentaje de habitaciones vendidas vía web y porcentaje de habitaciones vendidas vía tour-operadores.

Junto con estas variables, se han seleccionado una serie de pesos para cuantificar de qué forma inciden cada una de las variables en el resultado

final. Estas variables y pesos se integran en una serie de fórmulas que nos llevan al cálculo final del nivel de leakage de un determinado hotel.

El principal resultado de esta investigación es la capacidad que se obtiene tras aplicar el modelo para obtener el nivel de leakage de forma cuantitativa. Asimismo un segundo resultado que se extrae fruto de esta investigación es la relación directa que existe entre los niveles de leakage y la sostenibilidad.

Por último se obtienen como resultados los niveles de leakage que se tienen de media en cada una de las regiones del estudio, siendo Benidorm la que más nivel de leakage tiene seguido por Alicante, Castellón y por último Valencia.

Tras presentar el modelo del cálculo del leakage y validarlo empíricamente, se ha propuesto un nuevo modelo que relaciona el leakage con una serie de variables de gran relevancia para la empresa, tales como rentabilidad, satisfacción de clientes, satisfacción de empleados, etc. Del modelo propuesto se han validado una serie de relaciones gracias a la utilización de ecuaciones estructurales obtenidas tras la toma de datos realizando un trabajo de campo con más de 200 cuestionarios rellenados por managers de empresas hoteleras. El principal resultado obtenido es que se ha demostrado que un nivel de leakage bajo, afecta positivamente a la satisfacción de empleados, satisfacción de clientes y la posición competitiva de la empresa.

Los resultados de este trabajo son de interés para las empresas turísticas, ya que pueden servir como un medio para evaluar su situación económica. Por ejemplo, podría ser útil para una empresa hotelera para saber cuál es su nivel de leakage es y cómo esto puede afectar el nivel de satisfacción entre sus clientes y empleados. Además, el estudio puede ser de interés para la región en estudio, ya que proporciona un enfoque para conocer el entorno empresarial desde un punto de vista medido a través del nivel de leakage.

Las principales limitaciones de este trabajo es que los cálculos sólo se llevan a cabo en una región particular. Además, nos encontramos con dificultades debido a la reticencia de muchos de los encuestados a responder a las preguntas relacionadas con cuestiones financieras, que han enriquecido nuestro modelo.

A pesar de estas limitaciones, el estudio ofrece resultados interesantes que sugieren que existe una relación entre el crecimiento y la posición competitiva y la satisfacción de los empleados. También se ha encontrado

una interesante relación entre la satisfacción del empleado y la satisfacción del cliente.

En general todos estos resultados no solamente validan el modelo propuesto sino que además alientan a los investigadores a continuar profundizando en este tipo de modelos ya que se ha encontrado un concepto que incide directamente no solamente en la rentabilidad o el crecimiento de la empresa sino que además incide positivamente en los niveles de satisfacción de empleados y clientes. Estas variables son críticas para el óptimo funcionamiento de cualquier empresa.

Una vez definidos los modelos referentes al leakage, se ha visto la necesidad de buscar nuevos modelos de negocio para reducir los niveles de leakage buscando una mayor sostenibilidad en el turismo. Para ello se ha introducido en la investigación el concepto de Crowdsourcing. En este campo también se han obtenido importantes resultados fruto de la investigación realizada. Primeramente se ha analizado el concepto de Crowdsourcing, tras un estudio de la literatura existente y se han analizado las distintas fases que se han de seguir para optimizar los procesos dentro de la cadena de valor de las empresas. Tras esta investigación se ha demostrado la importancia del Crowdsourcing para transformar la cadena de valor de las organizaciones de turismo. Después de un estudio detallado de la transformación de la cadena de valor a través del desarrollo de nuevas tecnologías y una revisión del concepto y la definición de Crowdsourcing, se ofrecen ejemplos de técnicas de Crowdsourcing que se pueden utilizar para mejorar la productividad de las organizaciones y especialmente, en el sector del turismo. El trabajo analiza las principales actividades de las organizaciones, centrándose en los más relevantes: la infraestructura, el desarrollo de tecnología, marketing y ventas, operaciones y servicio.

Más allá de la contribución a la literatura existente sobre Crowdsourcing, los resultados de este trabajo muestran también que las técnicas de Crowdsourcing son de gran interés para las organizaciones. Éstas constituyen un paso hacia la creación de nuevos modelos de negocio exitosos a través de técnicas que potencien la participación de los consumidores.

Capítulo 4
Conclusiones

Cumplimiento de objetivos

En este capítulo de conclusiones finales que cierra la tesis doctoral, se revisa el cumplimento de los 7 objetivos e hipótesis de investigación planteados al inicio del trabajo, se recopilan las principales conclusiones alcanzadas, se exponen cuáles son las aportaciones más relevantes del trabajo y se proponen varias líneas futuras de investigación.

A lo largo de la tesis, se ha dado respuesta a los objetivos de investigación inicialmente planteados:

1. Realizar un profundo análisis de la literatura existente en cuanto a los impactos económicos en turismo, concretamente el fenómeno del leakage.
2. Establecer un modelo matemático para el cálculo del leakage en los hoteles.
3. Validar el modelo empíricamente para el caso de los hoteles de la Comunidad Valenciana.
4. Comprobar que el leakage afecta directamente a las empresas hoteleras en términos de satisfacción y rentabilidad.
5. Definir el concepto de Crowdsourcing a nivel teórico.
6. Analizar los casos en que puede utilizarse el Crowdsourcing a lo largo de la cadena de valor del sector hotelero.
7. Estudiar cómo las técnicas de Crowdsourcing pueden ayudar a reducir los niveles de leakage.

En el primer artículo se plantea un modelo matemático para el cálculo del leakage basado en las variables que inciden directamente en el impacto económico del turismo. Este modelo se valida para el caso concreto de los hoteles de la Comunidad Valenciana. Basado en la realización de encuestas, se extraen datos de más de 200 hoteles y se calcula en base al modelo presentado el nivel de leakage de cada uno de ellos. De este modo, los objetivos 1,2 y 3 de la presente tesis quedan alcanzados con lo expuesto en este primer artículo.

En el segundo artículo se ha definido el concepto de leakage en el marco del emprendimiento empresarial. Asimismo se ha presentado y validado un modelo que demuestra las relaciones entre el leakage y otras variables empresariales de suma importancia tales como la satisfacción de clientes y trabajadores o el crecimiento y la rentabilidad de la empresa. La principal conclusión que se extrae de este artículo es que las empresas con un nivel bajo de leakage obtienen una mejor rentabilidad y crecimiento empresarial así como un mejor grado de satisfacción de empleados y clientes. Así pues el objetivo 4 queda cubiertos en este segundo artículo.

El tercer artículo publicado tras la investigación realizada durante la tesis doctoral, analiza y define el concepto de Crowdsourcing. Tras realizar un estudio de la literatura existente, se muestran las ideas claves y las fases para llevar a cabo las técnicas de Crowdsourcing en cualquier empresa. Como conclusión principal de este artículo se tiene que las empresas deben apostar por este tipo de técnicas que se basan en la importancia del capital humano y en el nuevo rol que los consumidores adquieren en el mercado actual. El objetivo número 5 de los expuestos queda por tanto alcanzado y cubierto con el contenido de esta tercera publicación.

El cuarto artículo presentado en esta tesis doctoral analiza esta vez de forma práctica que posibilidades tienen las empresas turísticas para optimizar sus procesos en la cadena de valor a través de técnicas de Crowdsourcing. En este trabajo se presentan casos reales de utilización de Crowdsourcing en los distintos departamentos de las empresas. Del mismo modo se logra demostrar la importancia del Crowdsourcing y cómo se puede transformar la cadena de valor de las organizaciones de turismo en las empresas en general y de los hoteles, en particular. Después de un estudio detallado de la transformación de la cadena de valor a través del desarrollo de nuevas tecnologías y una revisión del concepto y la definición de Crowdsourcing, el artículo ofrece ejemplos de técnicas de Crowdsourcing que se pueden utilizar para mejorar la productividad de las organizaciones y, especialmente, los de el sector del turismo. Esta investigación añade una aportación novedosa a la literatura sobre Crowdsourcing mediante la transformación de la cadena de valor del turismo. De este modo queda alcanzado el objetivo número 6 de la propuesto al inicio de esta tesis doctoral.

El último de los artículos, el artículo quinto profundiza entre las posibles soluciones al fenómeno del leakage existentes en la literatura. De entre ellas se proponen las soluciones basadas en la participación activa de todos los agentes turísticos y en la aplicación de las nuevas tecnologías. Fruto de estos dos pilares fundamentales surge el concepto de Crowdsourcing. En el artículo se proponen posibles medidas basadas en Crowdsourcing que busquen reducir los niveles de leakage buscando un turismo más sostenible. De este modo, este último capítulo da respuesta al objetivo 7, lo que conlleva a que todos los objetivos trazados al principio de esta investigación quedan cubiertos.

Aportaciones realizadas

Así pues tras observar que los objetivos marcados en esta tesis doctoral han sido plenamente alcanzados fruto de la investigación de estos tres años, procedemos a resumir cuáles han sido las principales aportaciones a la literatura existente en el campo del leakage y del Crowdsourcing, campos cuya investigación no ha dado aún demasiados frutos por lo que las aportaciones realzadas contribuyen al avance en estas materias.

En el caso del leakage se ha analizado desde dos puntos de vista totalmente novedosos: leakage como factor de emprendimiento empresarial y el leakage como concepto de sostenibilidad en turismo. La primera aportación realizada en este campo, ha sido la de demostrar que el leakage incide directamente en factores vitales para la empresa tales como satisfacción, crecimiento y rentabilidad. Del mismo modo, visto que la literatura existente acerca del concepto de leakage es prácticamente toda de índole cualitativa, nuestro principal aporte en esta materia es la implementación de un método matemático para calcular el leakage asociado a una empresa hotelera. Además como contribución queda también la aplicación práctica en el caso de los hoteles de la Comunidad Valenciana (España).

Del mismo modo, dada la importancia del leakage en el sector turístico, se ha incidido en la idea de que es necesario apostar por un turismo sostenible que reduzca los niveles de leakage existentes y apueste por nuevos modelos de negocio. Estos modelos de negocio vienen marcados por dos aspectos fundamentales: la participación activa y la revolución que suponen las

nuevas tecnologías aplicadas al sector empresarial en general y al turístico en particular. Se ha propuesto como herramienta para el nuevo modelo de negocio turístico el uso del Crowdsourcing. Otra de las aportaciones más interesantes realizadas tras la elaboración de la presente tesis doctoral, es la aplicación práctica de las técnicas de Crowdsourcing a utilizar en cada uno de los procesos de la cadena de valor con el objetivo de optimizar los resultados.

Por último se ha propuesto la idea de que una de las formas más eficientes de enfocar los modelos turísticos de forma sostenible es reduciendo el nivel del leakage a través de medidas correctoras basadas en el Crowdsourcing.

Líneas de investigación futuras

Para concluir, se proponen dos caminos por los que seguir investigando en relación a los contenidos de esta tesis.

El primero de ellos se trata de tratar de extrapolar el modelo matemático propuesto para el cálculo del leakage en hoteles a otros subsectores del marco turístico tales como empresas de transporte, empresas de restauración, etc. Hasta la fecha muchos autores han definido el leakage en términos teóricos o cualitativos por lo que con esta tesis se abre un nuevo horizonte en el campo del leakage que nos llevará a determinar de forma exacta el nivel de leakage de una determinada empresa así como calcular el nivel de leakage de una determinada región turística. Un estudio interesante a realizar sería calcular el leakage por tipos de empresa (hoteles, restaurantes, transporte, etc.) y calcular el leakage total que tendría esa región. También podríamos extender este estudio a otras regiones con el fin de generalizar el modelo.

La segunda línea de investigación que se presenta tras la realización de esta tesis doctoral es buscar un modelo de sostenibilidad en el sector turístico basado en su nivel de leakage por un lado y por las técnicas de Crowdsourcing o similares que las empresas están llevando a cabo como pilar fundamental de los nuevos modelos de negocio que se deben adoptar.

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Anexos

Anexo I

Carta de aceptación del cuarto artículo : Improving hotel industry processes through crowdsourcing techniques

For José Luis Galdón Salvador
Business Organization Department, Universitat Politecnica de Valencia
Campus de Vera S/N, Edificio 8B 2º planta, 46022 Valencia (Spain)

To whom it may concern

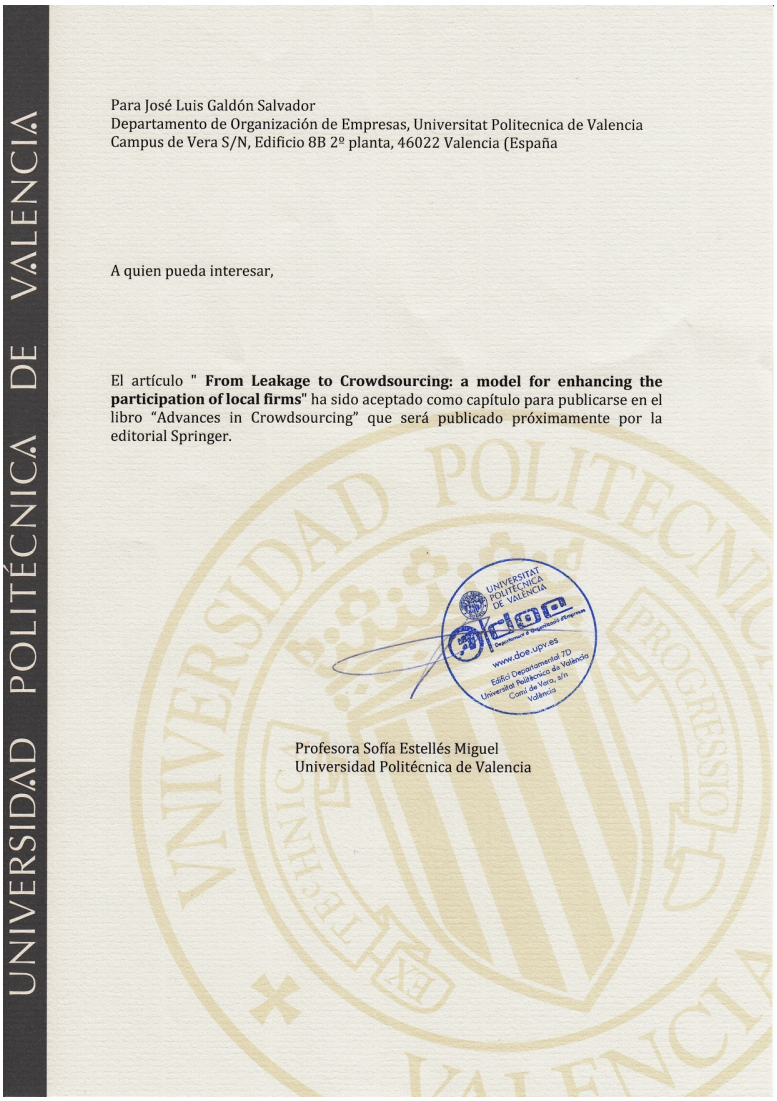
The paper "Improving hotel industry Processes through crowdsourcing techniques" is a chapter accepted for publication and is currently in print in the book titled "Open Tourism" to be published in January 2015 by Springer.

Signature

Prof. Roman Egger or Prof. Dominik Walche
Salzburg University of Applied Sciences

Anexo II

Carta de aceptación del quinto artículo: From Leakage to Crowdsourcing: a model for enhancing the participation of local firms.



UNIVERSIDAD POLITÉCNICA DE VALENCIA

Para José Luis Galdón Salvador
Departamento de Organización de Empresas, Universitat Politecnica de Valencia
Campus de Vera S/N, Edificio 8B 2º planta, 46022 Valencia (España

A quien pueda interesar,

El artículo " **From Leakage to Crowdsourcing: a model for enhancing the participation of local firms**" ha sido aceptado como capítulo para publicarse en el libro "Advances in Crowdsourcing" que será publicado próximamente por la editorial Springer.

Profesora Sofía Estellés Miguel
Universidad Politécnica de Valencia

Anexo III

Cuestionario empleado para el artículo 1: The economic sustainability of tourism growth through leakage calculation y el artículo 2: Leakage, entrepreneurship, and satisfaction in hospitality.

Datos del Hotel

Sexo	H			M	
Edad	18-30	31-40	41-50	51-65	>65
Nivel socioeconómico	1 (bajo)	2	3	4	5 (alto)
Número personas a su cargo					
Nombre del hotel					
Número de estrellas					
Localidad					
Tipo de Hotel	Balneario	Ciudad	Rural	Sol y Playa	

1 Perfil del Hotel	Desacuerdo				Acuerdo
1 La **empresa que construyó** el hotel era de nacionalidad española	1	2	3	4	5
2 Los **propietarios** del hotel son de nacionalidad española	1	2	3	4	5
3 Los proveedores de **servicios primarios** (gas, agua, electricidad…) son de nacionalidad española	1	2	3	4	5
4 Las empresas de **mantenimiento** contratadas son de nacionalidad española	1	2	3	4	5
5 Las empresas suministradoras de **muebles y elementos de decoración** son de	1	2	3	4	5

nacionalidad española					
6 Las empresas de **elementos fungibles** (servilletas, papel, limpieza) son de nacionalidad española.	1	2	3	4	5
7 Las **empresas de limpieza** contratadas por el hotel son de nacionalidad española	1	2	3	4	5
8 Los proveedores de **telecomunicaciones** (Internet, TV, teléfono…) son de nacionalidad española	1	2	3	4	5
9 Las principales empresas proveedoras de **alimentos** son de nacionalidad española.	1	2	3	4	5
10 Las principales empresas proveedoras de **bebidas** son de nacionalidad española.	1	2	3	4	5
11 Los **restaurantes** ubicados en el hotel son de nacionalidad española.	1	2	3	4	5
12 Las **empresas de excursiones** del hotel son de nacionalidad española	1	2	3	4	5
13 Las empresas de **servicios de valor añadido** (spa, tiendas, peluquería) son de nacionalidad española.	1	2	3	4	5
14 La mayoría de los contratos de los **empleados** son **de tipo fijo**.	1	2	3	4	5
15 La mayoría de los **empleados del hotel** son de nacionalidad española.	1	2	3	4	5

2 Perfil del turista

	Poco				Mucho
1 Grado de **ocupación** en **temporada alta**	1	2	3	4	5
2 Grado de **ocupación** en **temporada media**	1	2	3	4	5
3 Grado de **ocupación** en **temporada baja**	1	2	3	4	5
4 Grado de **ocupación entre semana** *(medio del año)*	1	2	3	4	5
5 Grado de **ocupación en fin de semana** *(medio del año)*	1	2	3	4	5
6 Porcentaje de **ingresos obtenidos** por el **alojamiento** *(medio del año)*	1	2	3	4	5
7 Porcentaje de **ingresos obtenidos** por servicios de **restauración** *(medio del año)*	1	2	3	4	5

8 Porcentaje de **ingresos obtenidos** por **servicios adicionales** *(medio del año)*	1	2	3	4	5
9 Porcentaje de **turistas alojados por** motivo de **ocio** *(medio del año)*	1	2	3	4	5
10 Porcentaje de **turistas alojados por** motivo de **trabajo** *(medio del año)*	1	2	3	4	5
11 Porcentaje de **habitaciones simples vendidas** *(medio del año)*	1	2	3	4	5
12 **Diferencia de precio** entre habitación **simple y** una **doble** *(medio del año)*	1	2	3	4	5
13 Porcentaje de turistas de **nacionalidad extranjera** *(medio del año)*	1	2	3	4	5
14 Porcentaje de **turistas** que viajan **con compañía** *(medio del año)*	1	2	3	4	5
15 Porcentaje de turistas que contratan régimen de **alojamiento y desayuno** *(medio del año)*	1	2	3	4	5
16 Porcentaje de turistas que contratan régimen de **media pensión** *(medio del año)*	1	2	3	4	5
17 Porcentaje de turistas que contratan régimen de **pensión completa** *(medio del año)*	1	2	3	4	5
18 Porcentaje de turistas que **repiten estancia** tras su primera visita	1	2	3	4	5
19 Porcentaje de turistas que tienen una **buena valoración general** del hotel	1	2	3	4	5

3 Estrategias de Venta Poco Mucho

1 Porcentaje de **habitaciones reservadas directamente** por el hotel (incluidas las reservadas en la web del hotel o cadena)	1	2	3	4	5
2 Porcentaje de **habitaciones reservadas** mediante **empresas tour-operadoras**	1	2	3	4	5
3 Porcentaje de **habitaciones reservadas** mediante otras web **o agencias virtuales especializadas** (Booking…etc.)	1	2	3	4	5
4 Porcentaje que se queda el hotel tras reservar una habitación mediante **reserva directa**	1	2	3	4	5
5 Porcentaje que se queda el hotel tras reservar una habitación mediante **tour-operadores**	1	2	3	4	5
6 Porcentaje que se queda el hotel tras reservar una habitación mediante otras web o **agencias virtuales especializadas** (Booking…etc.)	1	2	3	4	5

7 **Precio medio por habitación pagado por el turista** *(precio medio del año)*	
8 Precio medio pagado por el turista por una habitación reservada **directamente en el hotel** *(precio medio del año)*	
9 Precio medio pagado por el turista por una habitación reservada mediante una **empresa tour-operadora** *(precio medio del año)*	
10 Precio medio pagado por el turista por una habitación reservada mediante otras web o **agencias virtuales especializadas** (Booking…etc.) *(precio medio del año)*	

4 Rentabilidad *(medida durante los últimos 5 años*

	Mucho peor que la competencia				Mucho mejor que la competencia
1 **Rentabilidad económica media** (beneficios antes de intereses e impuestos/activo neto total)	1	2	3	4	5
2 **Rentabilidad financiera media** (resultado neto total después de impuestos/fondos propios)	1	2	3	4	5
3 **Rentabilidad media en ventas** (beneficios antes de intereses e impuestos/ventas)	1	2	3	4	5
4 **Crecimiento medio** en ventas en últimos 5 años	1	2	3	4	5
5 Ganancia de **cuota de mercado**	1	2	3	4	5
6 **Creación de riqueza** (relación valor de mercado/valor contable de la empresa)	1	2	3	4	5
7 **Satisfacción de los clientes**	1	2	3	4	5
8 **Satisfacción de los empleados**	1	2	3	4	5
9 **Posición competitiva global** (fortaleza competitiva en relación a la competencia mundial)	1	2	3	4	5
10 Tasa de **éxito** en el **lanzamiento de nuevos productos**	1	2	3	4	5

Datos generales

1 Número de **habitaciones totales** en el hotel.	
2 Número total **empleados** en el hotel *(medio durante el año)*	
3 Facturación *(último año)*	
4 Activos netos totales *(último año)*	