Preface

The ENTER2019 PhD Workshop is a yearly pre-conference event organised by the International Federation for Information Technology and Travel & Tourism (IFITT). IFITT aims to create a forum for doctoral students undertaking research related to Information and Communication Technology in Travel and Tourism to discuss their doctoral research with their colleagues and leading scholars in the field and explore issues related to academic and research careers, and build relationships with other students, researchers, and members of the community from around the world.

PhD students at all stages (i.e., beginning as well as nearly completed) have been invited to participate in the workshop. Following a call for proposals and a rigorous review process, a total of 19 research proposals from doctoral students at various stages are accepted to present at the workshop, 17 of them are included in the proceedings. Also, the recipient of the 2019 IFITT ICT4D Scholarship, which is awarded yearly to one young talent who works on the application of ICT for development through tourism in developing/emerging economies, is included.

We are proud to present these proceedings as we believe these papers represent the future of eTourism research. Not only do these proposals capture a wide range of research areas (consumer behaviour, machine learning, smart technology, online communication, and global issues in ICTs), but also discuss issues and applications of new, cutting-edge technologies impacting travel and tourism globally. We hope that these proposals will continue develop and push the research in the area of eTourism forward.

The proceedings and the workshop itself would have not been possible with the support of a great community. First of all, we would like to extend our deepest gratitude to members of the Program Committee who have contributed their valuable time and expertise in the review process. Secondly, we also thank the senior experts who have volunteered to mentor students during the workshop and contribute to the early career workshops. Thirdly, the University of Nicosia, school of business, for hosting the workshop and providing excellent support. Lastly, we heartily want to thank IFITT for their support and confidence in us organising this workshop. But most importantly, we want to warmly congratulate all authors and thank them for submitting their work to ENTER2019 PhD Workshop.

We are looking forward to have a successful PhD workshop in Nicosia!

Vienna, Austria

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Analysis of Inter-Relations between Technology Adoption, Legitimacy and Reputation in the Market based on Institutional Theory

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Abstract

The tourism industry continues to be impacted by new technologies. The companies of the sector must follow this advance to survive in front of the competition. Institutional Theory discusses isomorphism as a result of the institutional pressures/forces of the institutional environment that can affect organizations in the adoption of some practices. Institutional theory has been used to explain the adoption of technologies in several industry sectors, but in tourism it has received little attention. The study intends to establish a connection between the adoption of technology by tourism companies in search of legitimacy as proposed by institutional theory, linking it with the reputation of the enterprises in the market.

1 Problem definition

Travel agencies, airlines, hotels and other companies in the tourism and hospitality industry continue to be impacted by technological advances. Tourism enterprises need to use and strategically integrate Information Technology (IT) in order to achieve profitability and long-term survival through the improvement of their services, improving the efficiency of their activities, and serving their target audience as a result of using these technological tools (Buhalis, 1998). As the tourism sector incorporates technologies reconfiguring the distribution and use of products and services (Guimarães & Borges, 2008), the diffusion of IT in the hospitality sector brought about tremendous impacts on individual hotels and industry structures. IT is considered fundamental to competitiveness in the market (Law & Jogaratnam, 2005). Focusing on delivering a higher quality service to customers generates an intense and growing demand for information, resulting in the need to acquire good technology practices (Law & Jogaratnam, 2005).

The "search for the efficiency necessary to maintain its position in the market makes the organization keep watch to the evolution of its environment" (Crubellate, Pascucci, & Grave, 2008, p.15). Basically, institutions find themselves absorbing characteristics, regulations, and adopting standards imposed by the environment to which they belong (Weerakkody et al., 2009). Thus, this process of absorbing suggests that organizations do not only seek to stand out from the competition or to acquire competitive tools, they want legitimacy (DiMaggio & Powell, 1983), adapting to what is happening in the environment, consequently adopting new behaviours (Vargo & Lusch, 2016).

Within the context of Institutional Theory, DiMaggio & Powell (1983) describe three pressures coming from the environment - coercive pressures are tactics used by an organization that exercises coercion over another through mechanisms that will structure or shape another organization; normative pressures, which can be exemplified by practices already legitimized in a profession, which end up forcing other professionals to follow them because they are established as efficient and socially
regarded as acceptable and adequate; and mimetic pressures, which describe forces that encourage organizations to act like others, e.g. by imitating a successful company in a moment of uncertainty of the environment.

These pressures encourage institutional isomorphism, which refers to homogeneity rather than diversity among organizations within a particular institutional environment (DiMaggio & Powell, 1983). In other words, the adoption of the same organizational tools and approaches leads to homogeneity. Within the Institutional Theory framework, legitimation appears as the main driver of isomorphic processes in the adoption of some practices in organizations (e.g. the use of technology) (Hassan, 2008). Legitimacy is defined by Scott (2005, p.56) as a fundamental need for organizations that “intend to survive and succeed in their social environments” because they need more than resources and operational information, their acceptance and credibility are indispensable in their context of the market. Suchman (1995, p. 574) discusses legitimacy as a “generalized perception or assumption that an entity's actions are desirable or appropriate within some socially constructed system of norms, values, beliefs, and definitions”.

Institutional isomorphism as a research field can bring new knowledge to technology studies by focusing on justifying behaviours and perceptions about the adoption of technology, such as social media, websites, electronic mail, e-commerce, among others in a tourism enterprise. In tourism, Institutional Theory has only been investigated in a limited way by de Grosbois (2016) and specifically in relation to technology adoption by Gretzel et. al. (2017). In this context, Weerakkody, Dwivedi & Irani (2009) approach Institutional Theory as the quest to understand how these environmental pressures have affected organizations' operations, the environment which they belong and how they react to what is imposed by these pressures, and what they need to do to receive legitimation and acceptance.

Despite adopting an institutional environment point of view, Soares, Mendes-Filho, Gretzel & Biz (2018)'s study highlighted that tourism enterprises in Brazil were more concerned with their reputation in the market. They adopt similar patterns in checking how they are being accepted in the market, searching for reviews and comments online (e.g., Booking, TripAdvisor, Decolar, etc.). Legitimation is understood by the interviewees as being reflected by acceptance on evaluation platforms. From an organizational perspective, reputation is related with their values, vision and purposes, which can be expected to amplify influence on product and service quality, meaning that it may have a more direct impact on perceptions of customer value and customer loyalty (Balmer, 2001). This is an opportunity for further exploration of why legitimation in the market dominated in this context.

In the tourism field, Institutional Theory emerges as a potential tool to identify and explain homogeneity among tour operators in terms of technology use. Although being a strong theory in the evaluation of technology adoption, tourism literature has largely ignored institutional forces. With its potential to uncover insights into ICT adoption among tour operators, surpassing traditional factors addressed in the tourism literature, a focus on legitimation and institutional isomorphism is a promising concept capable of presenting additional explanations for organizational behaviour (Gyau and Stringer, 2011). The main purpose of the proposed study is thus to identify factors that result in isomorphism in tourism organizations’ patterns of technology adoption. It will seek to understand how tourism organizations’ quest for legitimation in the market influences
their technology use patterns and whether this kind of legitimacy seeking also leads to isomorphism.

2 Literature Review

In today's tourism landscape, increased access to IT has been responsible for shortening communication, breaking down barriers and delivering information to more people. For Netto & Trigo (2009), the Internet constitutes one of the greatest communication tools on a global scale in the exchange of information and access to millions of users. For Olsen & Connolly (2000), enterprises increase their competitiveness through IT use. IT provides the ability to change the nature of products, establishments, consumption, operating mechanisms, and competition in the tourism industry. Managers want to achieve profit growth and higher economic returns as a result of IT adoption. Cho & Olsen (1998) warn that this expected positive return requires not only the acquisition and use of new technologies but also knowledge in manipulating them.

Institutional theory has a different character from theories with rationalist views as it seeks to obtain a holistic understanding through acknowledging that social, cultural, economic, political phenomena, and other political orders are part of the institutional environment and are responsible for shaping the interests of individuals and organizations (Vieira & Carvalho, 2003). Fonseca (2003) emphasizes that the relational network elements and the systematized culture that form and structure the organization and its actions are the focus of institutional theory.

As pointed out, the organizations belong to an environment with values, norms and myths that are developed and paved by virtue of the social interactions among the actors. In order to survive, the organization needs to understand and be guided collectively, which means that in order to achieve its objectives the organization needs to have an understanding of its institutional environment with respect to its values, its rules and ideals, in order to create a legitimacy that can bring success to its practices (Meyer & Rowan, 1991). The authors argue that gaining legitimacy in the organization is a major point of institutionalization. DiMaggio & Powell (1983) address the homogenization trend that members of the organization participate in, where even a new entrant in an established field tends to act in a similar way towards homogenization. Isomorphism is placed by DiMaggio & Powell (1983) as an instrument of attribution of legitimacy in the process of seeking and developing the survival of an organization in the institutional environment. The practices resulting from institutionalization are reflected in the importance of reaching legitimacy with the stakeholders (Meyer & Rowan, 1991). The environmental forces end up playing a key role in the process of legitimizing a company within an existing organizational environment, and by adjusting its practices, an organization is likely to increase its chance of survival.

Thus, this orientation derives from values and standards that are seen as "guaranteed" in the environment they are part of, companies seek to follow them to gain approval from the actors involved and achieve legitimacy (Esteban-Llort, Aragón-Sanchez, & Carrasco-Hernández, 2014). Through it, legitimacy can then be identified in the consistency between the organization's beliefs and the values socially established by the industry in which they operate. Meyer & Rowman (1991) point out that the search for adaptation to social expectations is therefore aimed at the acceptance that paves the success of the company development and the longevity of the organizations.
3 Conceptual Development

This doctoral study aims to examine whether tourism companies follow a standard in their technology adoption and whether they believe that adopting certain tools will help them achieve legitimacy and acceptance in the environment, or if they base technology adoption decisions solely on organizational needs. First, an in-depth literature review is carried out to find concepts, frameworks, models, and constructs (Hevner, March, Park & Ram, 2004). A preliminary bibliographic survey was undertaken regarding studies about Institutional Theory. The general search for the term Institutional Theory returned a high number of studies that besides the big area of administration, represented medical areas, sociology, and other disciplines. Despite studies on technology acceptance, characteristics of organizations in the use of ICT tools, and factors driving technological adoption in companies (Gibbs, Gretzel & Noorani, 2016, Wang et al., 2016), the Institutional Theory, as pointed out by Oliveira & Martins (2010) as widely used when it comes to Information Systems, is not widely represented in the field of tourism (Gretzel et al., 2017). This literature review provides knowledge about the main facets of Institutional Theory, addressing the isomorphic process related to legitimation and, subsequently, if and how institutional pressures are linked to technology adoption. Further the literature review affirms that reputation is a key concept in the context of legitimation but also highlights that further exploration is needed in this area. This leads to the following research objectives: to identify if and how institutional pressures influence the adoption and use of technology and lead to isomorphism; to understand the role of organizational legitimacy in the technology adoption process; and, to verify the interrelationship between the legitimacy of an organization and its reputation in the market.

4 Proposed methodology

The proposed study will combine qualitative and quantitative methods. The study population will consist of tourism operators in Brazil, defined by the Brazilian Ministério do Turismo, as producers of tourism services. They are represented by three main associations: the Brazilian Association of Hotels (ABIH), the Brazilian Association of Bars and Restaurants (ABRASEL), and the Brazilian Association of Travel Agencies (ABAV). A literature review will be conducted to identify relevant constructs and measures to be applied in surveys distributed to these tourism operators via these industry associations. The data will provide results regarding patterns in ICT practices, perceived institutional pressures and legitimation efforts. The survey will be followed by in-depth interviews that seek a qualitative understanding of the quest for legitimacy. Further, ABIH officials will be interviewed to understand what pressures they exercise and how they perceive the legitimacy of tourism operators. Also, the research will survey travellers and/or look at social media comments to derive their perceptions of businesses that adopt specific technologies. Based on these perspectives of different stakeholders, the study will be able to obtain an intricate understanding of the institutional environment of these tourism operators.

5 Anticipated results

This proposal will provide new insights into Institutional Theory in the Tourism literature, following the call of Gyau and Stringer (2011), who identified it as a perspective that should receive attention for the understanding of technological adoption in tourism operators. In addition, by identifying the importance of legitimacy
in these ITC adoption processes and linking it to reputation in the market, the study seeks to fill a still unexplored theoretical area. The proposed research approach creates exciting possibilities to compare and contrast key results between seeking legitimacy in the institutional environment versus in the market. For marketers it opens up opportunities to introspect on how they adopt ICT practices and tools. Also, this doctoral study proposal hopes to identify the importance of evaluation platforms driving the quest for legitimacy and, thus, technology adoption decisions. Despite being a strong theory in the evaluation of technology adoption, tourism literature has largely ignored institutional forces. Filling this gap, this research will provide much needed insights on technology adoption and use patterns and ultimately shed light on isomorphism in a highly competitive sector.

References


Innovation in Tourism: An Augmented Reality (AR) Value Proposition

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Abstract

It is argued that the future success of tourism SMEs will increasingly be dependent on the adoption of technology. Intense competitive pressure in the sector has made it very pertinent for tourism SMEs to innovate in order to grow and to differentiate their products and services from competitors. In Saudi Arabia, many tourism SMEs are still slow in the implementation of technology and innovation. Hence, this research aims at exploring innovative mechanisms of value creation for tourism SMEs through the adoption of AR as well as for product and service suppliers and users. The study will adopt an interpretive research design that employs qualitative research methods. Outcomes from this research aim to inform platform-type mechanisms that create value for tourists and tourism SMEs stakeholders.

Current Status of PhD: Completed proposal.

1 Problem Definition

Currently, success and the sustainable growth of tourism SMEs are dependent on the adoption of technology due to changing trends in digitalisation (Qian, Shen, & Law, 2018). It is argued that the adoption of technology will facilitate value propositions for tourism SMEs and the creation of a ‘competitive edge’. The intense competitive pressures in tourism has made it pertinent for tourism SMEs to innovate in order to thrive in the sector and to differentiate their products and services from competitors. Emerging technologies and social change are key factors that have been changing the tourism industry (Tajeddini et al., 2017). Besides, many tourism SMEs have failed due to a lack of innovation in their business model design. For instance, in Saudi Arabia, many tourism SMEs are still slow in the implementation of technology and innovation.

Augmented Reality (AR) is a visualisation technique that uses computers to generate data through text, visual, graphics, and a wide range of multimedia formats on real-world views (Sigala, 2016). This platform provides immersive experiences for the user, and it makes thinking and assessment easier thus making it easier for learning and creation of vivid memories. This paper aims at exploring the successful adoption of AR in tourism SMEs. In terms of research gap, very few studies have evaluated the value that can be created for users, stakeholders, and investors in this context through AR adoption (Lara et al., 2017). Therefore, this research aims at examining value creation mechanisms for tourism SMEs through the adoption of AR.

2 Literature Review

2.1 Innovation and Value Creation in Tourism

It has recently been reported that use of innovation in tourism is a critical factor as it may influence tourist decisions in visiting a tourist destination (Ali, 2018). This study examines such factors in the context of the tourism sector in Saudi Arabia which has great potential for growth, development, and sustainability. Innovation also determines whether a tourist becomes a repeat, or one time, customer. Innovation has also been transforming how tourism SMEs markets their products to their target customers and
has enabled tourism SMEs to reach more consumers in the tourism sector. Innovation in the tourism sector has made it one of the fast-growing industries in Saudi Arabia. Globally, the tourism sector has been transforming due to innovation. According to Thanaa and Hanan (2017), Saudi Arabia’s tourism sector contributes considerably to the nation’s economic growth and sustainability with innovation essential for developing more creative designs to grow the sector and in establishing a competitive tourism industry. Here, innovation has enabled tourism SMEs to compete effectively, generate more profits, and offer quality products and services that meet the customer needs, demands, and expectations. Innovation has also facilitated the offering of experience-based tourism products and services, which enhances the sector’s competitiveness, growth and sustainability. Accordingly, innovation has enabled tourism SMEs to transform their products and services continuously to meet the changing consumer needs and demands (Ali, 2018).

2.2 Tourism SMEs
Tourism SMEs represent the sources of an entrepreneur's skills, knowledge, experiences, abilities, innovation, and employment (Lara et al., 2017). Tourism businesses are distributed in five main groups in the tourism industry. These include; food and beverage services, the transportation sector, accommodation, travel products and services, and recreation and entertainment services. These five groups focus on meeting tourist needs and expectations in the tourism sector, which is a significant contributor to the economic growth and development in many countries. The critical role played by tourism SMEs in the economy is facilitated by the fact that most tourism SMEs are able to meet the needs and expectations of tourists (Lara et al., 2017). The World Travel and Tourism Council has established that Saudi Arabia’s tourism sector contributes more than 3.7% of the total GDP and with the adoption of technology in the sector, the contribution is likely to rise (Qian et al., 2018). As briefly outlined in section 2.1., innovation has been creating more opportunities and diversity for growth and sustainability for tourism SMEs. Tourism SMEs have also exhibited unique adoptions of technology, social change adaptation, and effective customer service delivery to the service industry, where technology has acted as a catalyst in terms of growth and sustainability (Tarute & Gatautis, 2014). Tourism policymakers and economists across the world argue that technology will determine the future of tourism because it supports the operations of many tourism SMEs, as well as the needs of tourism consumers. In summary, tourism SMEs facilitates the expansion of new markets, and this creates new value propositions. Besides, tourism SMEs support supply network partners in international tourism markets, and the adoption of new technology has been reported to enable the tourism industry to become more efficient (Lara et al., 2017).

2.3 Augmented Reality (AR)
In contemporary society, technology pervades every action of consumer behaviour more than ever. Innovations in information communication technology and the increase in digitalisation has transformed many aspects of life making access to products and services easier (Cohen et al., 2014). AR is an interactive technology that overlays multimedia content onto the real world, and allows users to interact and engage with the media by generating sufficient information across sensory modalities such as the touch sensory modalities, visual, auditory, and smell sensory modalities (Chavan, 2016). This has given AR an added advantage over the other reality technologies, such as virtual reality (VR). For example, unlike VR, AR allows users to be tethered to the real world as opposed to having their senses engrossed in a computer-generated stimulation.
The ubiquity of technology and the rising ownership of smartphones has revolutionised the way tourists access and explore tourism information (Jung et al., 2015). According to Palumbo et al. (2013), tourists across the world are demanding experiences that merge leisure, entertainment, culture, education, and networking and adoption of technology such as AR may facilitate the meeting of these needs. For example, research has shown that AR can allow tourists with limited knowledge about a tourist destination to access all the information they need about the destination and this enables them to naturally and dynamically experience the destination (Chun, 2015; Martinez-Grana et al., 2013). This enriches the experiences of the tourist leading to the development of positive attitudes and behaviours towards the tourism destination.

AR also opens up numerous marketing opportunities for tourism SMEs allowing them to meet the needs and expectations of tourists. Here, tourists are able to gain a realistic picture of what they expect, and this facilitates their planning and decision-making process for their travel. Travellers across the world can use AR to access real-time information on different tourism SMEs, their locations, services, features, content provided, and the feedback given by previous visitors. In addition, AR applications store data on historical events, places, and different objects and this can connect tourists with tourism SMEs that can connect them to historical places, events, and objects (Jung et al., 2015). Tourism SMEs can use AR for attracting tourists to specific areas, especially to areas that tourists are not familiar with throughout the world. This is because AR enables tourism companies to provide information on these areas and tourists are able to experience these areas even before physically visiting the regions using AR applications (Giotopoulos, 2017). In summary, AR creates immersive content that enhances user interaction with - and perception of - their surroundings and this is an opportunity for enhancing tourism experiences. However, the adoption of AR may be classed as emergent in a tourism industry context in spite of numerous advantages and benefits outlined in the literature (e.g., Chung et al., 2015).

3 Conceptual Development

It is argued that AR may create value for tourism SMEs, product and services suppliers, and users. According to Chang and Chung (2018), expectation, perception, and memories are the three most important internal factors that influence tourism behaviour. Tourists’ decision-making can be nudged by satisfying internal influences; this research intends to explore such possibilities using unique features of AR, which may be channelled into a business to customer (B2C) value creation. Literature also suggests that businesses need to create value and increase their performance. To achieve this, innovation by adopting technology and business model redefinition is paramount. Hence, this research specifically examines how SMEs can use AR to create value, enhance performance and innovate while developing platform-based mechanisms for all stakeholders. Based on a review of the academic literature an initial conceptual framework is proposed (see figure 1). Here, the interplay of AR in terms of Experience, Dynamism, and Customisation with Tourism SMEs (e.g., focusing on Value, Performance, and Innovation), and Tourist Behaviour (e.g., in this case Expectations, Perceptions, and Memories) is explored.
Proposed Methodology

The study will adopt an interpretive research design because it is significant in understanding diverse human behaviour and perception in different social settings (Klein and Myers, 1999). It will also help the researcher gain in-depth insights into AR and its significance in creating more value for tourism SMEs. The researcher will evaluate existing literature and conduct interviews using focus groups with the sample population consisting of stakeholders in tourism SMEs in Riyadh. Data from (General Authority for statistics, 2016) indicates that Saudi SMEs fall under three categories; micro-enterprises with 1-5 employees, small establishments with 9-49 employees, and medium enterprises with 50-249 employees. While there are different tourism SMEs in Riyadh but due to the limitations of time and resources, the researcher cannot include all these in the study. Hence, it is proposed that the researcher will identify nine SMEs (total) across these three categories. Furthermore, the study will use purposeful sampling method to identify a suitable sample size of 120 respondents linked to the nine tourism SMEs - as per Long (2014) - a sample of more than 30% of the entire target population promotes accuracy and reliability of the data collected. Data will be collected using the focus group method. As some participants may be unfamiliar with AR and before the interview the researcher will provide understanding through use of publically available sources (e.g., YouTube videos) involving AR. Furthermore, the focus group method will also provide an opportunity for the participants to try AR and understand its functions. This research will incorporate qualitative data analysis and content analysis to triangulate the results for comparison and validation. Furthermore, data will also be collected from tourists using an on-line survey method.

Anticipated Results

The research aims to contribute to the body of knowledge around platforms that may create value for tourists and SMEs in the sector. In addition to extending current platform innovation literature, it may inform strategies that can be used in the implementation of AR in tourism SMEs for (1) the enhancement of tourist experiences and (2) value propositions for both tourists and SMEs. In terms of practice, the research may also contribute to the development of new AR platforms.
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Comparative Study of Blended Learning and Traditional Learning Through MOOCs

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Abstract
The purpose of education is to cultivate talents. In recent years, Internet information technology has developed rapidly. How to combine education with the internet and improve education methods are issues that educators must address. The paper’s purpose is to compare the students' satisfaction of blended learning and traditional learning. Data will be gathered from nearly 1,000 online comments on Micro Bachelor Courses, which are designed and launched by Nankai University in China. NVivo 11 and ROST Content Mining software will be used for the content analysis of the comments. This paper also proposes suggestions for the tourism universities and teachers.

Keywords: Micro Bachelor Courses, Tourism Management, Online, Blended Learning, MOOCs.

1 Introduction
With the advancement of the Internet and the massive use of social media such as Facebook, Twitter and WeChat, traditional teaching and learning is transferring from physical space to virtual environments. Since 2012, Massive Open Online Courses (MOOCs) have emerged, and the New York Times has called 2012 the “Year of the MOOC” (Pappano, 2012). The MOOCs, emerged in 2008 with thousands of students (Klobas, Macintosh, & Murphy, 2014) and exploded to 81 million students in 2016, who registered for more than 9,400 courses offered by more than 800 universities. (Shaw, 2018). In recent years, as an innovative model of online learning, MOOCs have continued to grow and develop.

One trend is that the world's top universities have developed undergraduate and graduate level classes. Due to the development of the MOOCs, students from all over the world can choose the courses offered by top universities at any time and any place, without having to go to schools.

As an emerging educational approach, MOOCs should constantly improve its teaching quality to method to gain more recognition from participants. MOOCs must understand the feeling and needs of participants. Therefore, the perceptions of the participants toward MOOCs must be understood, and such perceptions are mostly reflected by students’ questions and comments. Although MOOCs have been studied for some time, a lack of qualitative research on student satisfaction between blended learning and traditional learning remain.

Therefore, this study aims to fill the knowledge gap by addressing the following research objectives:
(1) To identify the aspects of blended learning that students focus on in their online questions, comments.

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(2) To examine the factors that contribute to student’s satisfaction.
(3) To provide suggestions for blended learning to improve the quality of educational services.

2 Literature Review

2.1 MOOCs

Since the emerging of MOOCs in 2012, scholars have conducted extensive discussions on MOOCs. MOOCs are the latest open education, perhaps the most important extension of education, not just providing free educational information (Murphy, N Kalbaska, A Williams, P Ryan, L Cantoni, 2014). MOOCs have two important impacts: improving teaching and encouraging institutions to develop distinctive missions (Daniel, 2012).

Compared with the large sharing and high-quality MOOCs in Stanford University and the Massachusetts Institute of Technology, the number of pioneering MOOC in 2008 was smaller and the teaching methods were different (Daniel, 2012; Martin, 2012). Canadians George Siemens and Downes, who used MOOCs firstly, proposed that connectivist learning is the process of building networks of contacts that can solve real problems (Anderson & Dron, 2011).

George Siemens, Phil Hill, John Daniel, and others researchers distinguish MOOCs in two different models: cMOOC and xMOOC (Annaraud,K & Singh, D, 2017). CMOOCs focus on knowledge creation and creation, while xMOOC focuses on knowledge replication (Daniel, 2012).

MOOCs have related to the educational and political trends in higher education (Weingarten, 2013–2014). One trend is higher education cannot satisfy the need of growing world population, the other trend is the maturity of technology makes internet more accessible and reliable. As the two trends converge, MOOCs seems to be developing rapidly (Al-Atabi & DeBoer 2014).

Many scholars believe that MOOCs have reformed traditional education. Miller, T (2012) believed that MOOCs break down barriers to knowledge. Knox, J (2014) declared that massive participation as one characteristic of the MOOC, is new for education. However, some other scholars have questioned MOOCs. Epelboin (2013) asked that are the MOOCs a breakthrough for education, or a new avatar of an old concept?

Completion rates of MOOCs remain low, averaging less than 8% (Williams 2018), some scholars paid attention to the persistence, completion, dropout rate on MOOCs. Williams (2018) examined learner characteristics and goals for enrolling in MOOCs, and the impacts on student persistence and completion in varying disciplines. Allione, G; Stein, RM (2016) used the Cox proportional hazard model, analysed the high attrition rate and found that younger students, U.S. participants, and females are less likely to complete the course.

2.2 Courses satisfaction

Some scholars also paid attention to students' satisfaction with MOOCs in recent years, mainly using quantitative analysis methods, and lacking qualitative analysis based on comment data.

According to the theory of customer satisfaction, students are considered as customers and the courses are the products (Franklin and Shemwell, 1995).
Khalil, H and Ebner, M. (2013) conducted a general study on the satisfaction of MOOC participants and found that 65% were satisfied with the MOOC. Manalo (2014) evaluated MOOCs using the Kirkpatrick Model to measure the learner satisfaction. Gutiérrez-Santiuste (2015) developed a qualitative analysis and compared the students’ communication barriers and the satisfaction between MOOCs and b-learning. 6 dimensions items were used to measure student’s satisfaction, including planning, content, participation, professors, community, conclusions. The results show that students express high satisfaction in both educational modes. X Fang (2016) explored the satisfaction of MOOCs based on structural equation model, the survey results showed that the satisfaction of MOOCs study support service is not high, and MOOCs should be improved.

In the existing literature, only a few MOOC studies focused on tourism (Murphy, Tracey, & Tognazzini, 2016), with even fewer dedicated to the comparing of blended learning and traditional learning on MOOCs satisfaction by qualitative method.

3 Methodology

3.1 Secondary data analyzing

Through professional journals, internet, and library collections of the school library, MOOCs and blended learning literature will be read. The results of theoretical research on MOOCs will be summarized to explore the research. This study also analyzes the development status of the MOOCs and analyzes the differences and existing problems between traditional face-to-face education and blended education based on MOOCs.

3.2 Data coding and analyzing

This study will employ a qualitative approach to gain a better understanding of the comments. The collected data are mostly extracted from the official website of Zhihuishu. (https://www.zhihuishu.com). A total of 1,000 comments will be used for the analysis. We will use Nvivo 11 software to edit, code and build relationship and model form the data.

The data mainly includes three types of questions and comments:

(1) Technical questions and comments. There are a lot of technical questions and comments, such as how to get a Micro-Bachelor's degree, how to use the course by computers, tablets and mobile phones, etc.

(2) Content questions and comments. There are also questions and comments raised by some students about the contents of teaching, including questions about video, lecture, case study, and further reading.

(3) Live session questions and comments. In the live session, students also ask questions directly to the teacher.

Based on these three types of questions and comments, we can conclude what problems exists in blended learning and traditional learning.

3.3 Semantic network analysis

This paper will use the semantic network analysis method to analyze the comments and questions by ROST Content Mining software. ROST Content Mining software has the functions of word segmentation, word frequency analysis, social network and semantic analysis, sentiment analysis and so on. This paper mainly uses the sentiment analysis
function to evaluate the mood index of students, so as to reflect the satisfaction of students.

3.4 Comparative analysis

This paper will conduct a comparison of traditional learning and blended teaching modalities in Micro Bachelor Courses to determine if there are differences in students’ satisfaction. At present, scholars mostly use quantitative methods for comparison. Rovai (2004) used a causal-comparative design to examine the relationship of sense of community between traditional classroom, blended, and fully online higher education learning environments. Blended learning (Wandera, 2017), very few studies have utilized a three-way comparison to examine the impact of different teaching modality on student success. SC Yen (2018) measured course satisfaction by administering the Student Opinion Questionnaire across the three teaching modalities: face-to-face, online, and blended teaching. This paper conducts qualitative approaches based on comments and questions in order to obtain innovations.

4 Implication and suggestion

4.1 Theoretical implication

Based on the theory of customer satisfaction, this paper considered students are customers and the courses are the products. We will use qualitative approaches to edit, code, build relationship and model form the comments and questions raised by students. And we hope to improve the customer satisfaction theory.

4.2 Practical implication

Blended education method based on MOOCs breaks the limitations of space and time, integrates the world’s educational resources, and realizes independent learning, personalized learning, and interactive learning, bringing new ideas to education. According to data from Class Central, the MOOCs navigation website in US, the global MOOCs have 81 million students, 9,400 courses, more than 500 certificates and more than 10 graduate online degrees in 2017 (Shah, 2018). As an emerging educational method, MOOCs should constantly improve its teaching quality and method to gain more recognition from schools, teachers and students. This study explores the students’ satisfaction of MOOCs in the tourism management profession and proposes improvement measures that will promote the education level and quality of MOOCs.

References


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Can Baidu Index Improve the Hotel Room Demand Forecasting by Machine Learning Methods?

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Abstract

Online searching has become a popular way for tourists to collect tourism information. Many researches have verified the usefulness of search engine volume in improving tourism arrivals forecasting, but few have applied search engine data to hotel demand forecasting. To improve prediction accuracy of hotel demand, this study conducts a new framework, consisting of extreme learning machine, Baidu search index and sentiment scores, to forecast hotel room demand for a specific hotel group. The expected result is that extreme learning machine (ELM) models with mixed data can outperform the benchmark models in terms of forecasting accuracy.

1 Problem Definition

With the increase of Chinese tourists, the number of tourists often exceeds the carrying capacity of scenic spots during holidays, especially during the holidays of Labour day and National Day (Huang et al., 2017). While the massive flood of travellers brings businesses to hotels, they also bring the loss to hotels when the room demand is inaccurately predicted. Better predictions can lead to proper hotel staffing arrangement, proper hotel room pricing, promotion of service quality, increment of hotel revenue and other satisfying performance while inaccurate prediction can result in numerous hotel problems. Thus, accurate hotel room demand prediction is vital for managers and administrators to allocate limited resources and meet tourist demand.

In the past, hotels relied on their own occupancy statistics to predict future occupancy. This method has shortcomings of data lag and sample insufficiency, and it cannot always reflect the future accurately. Therefore, seeking more timely and well-sampled data or methods that can deal with non-stationary data is extremely important for improving hotel demand forecasting. Can search engine like Baidu improve the hotel room demand forecasting in China? Would hotel comments help to promote the prediction accuracy? And what methods should be adopted to improve the hotel room forecasting with the mix data? This study will test the predictive effect of different mixed datasets and will also compare the machine learning models to the benchmark models in terms of forecasting accuracy to identify the best forecasting model.

2 Literature Review

This study has reviewed the researches about tourism prediction with online data from search engines, and also compared literatures with each other in terms of methods and objects. Selected references are listed in Table 1.
<table>
<thead>
<tr>
<th>References</th>
<th>Research objects</th>
<th>Methods</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wong et al., 2007</td>
<td>Inbound tourism</td>
<td>autoregressive integrated moving average, vector auto regressive, autoregressive distributed lag model,</td>
<td>Tourist arrivals and economic variables</td>
</tr>
<tr>
<td>Athanasopoulos et al., 2008</td>
<td>Inbound tourism</td>
<td>state space models, exponential smoothing model</td>
<td>Tourist arrivals and economic variables</td>
</tr>
<tr>
<td>Song et al., 2011</td>
<td>Inbound tourism</td>
<td>structural time series model</td>
<td>Tourist arrivals and economic variable</td>
</tr>
<tr>
<td>Fildes et al., 2011</td>
<td>Air travel demand</td>
<td>autoregressive distributed lag model, vector auto-regressive model</td>
<td>Air passengers and economic variable</td>
</tr>
<tr>
<td>Chen et al., 2012</td>
<td>Inbound tourism</td>
<td>empirical mode decomposition, BPNN</td>
<td>Tourist arrivals</td>
</tr>
<tr>
<td>Shahrabi et al., 2013</td>
<td>Inbound tourism</td>
<td>modular genetic-fuzzy forecasting</td>
<td>Tourist arrivals</td>
</tr>
<tr>
<td>Liang, 2014</td>
<td>Inbound tourism</td>
<td>SAIMA, generalized auto-regressive conditional heteroskedasticity</td>
<td>Tourist arrivals</td>
</tr>
<tr>
<td>Bangwayo-Skeete et al., 2015</td>
<td>Tourism demand</td>
<td>Autoregressive Mixed-Data Sampling models</td>
<td>Tourist arrivals, Google trend data</td>
</tr>
<tr>
<td>Gunter et al., 2015</td>
<td>Inbound tourism</td>
<td>ECADLM, vector auto-regressive model, Bayesian vector autoregressive, time-varying parameter, auto-regressive moving averaging</td>
<td>Tourist arrivals, economic variable</td>
</tr>
<tr>
<td>Jungmittag, 2016</td>
<td>Travel demand</td>
<td>seasonal autoregressive integrated moving average</td>
<td>Air passenger</td>
</tr>
<tr>
<td>Pan et al., 2016</td>
<td>Hotel demand</td>
<td>autoregressive integrated moving average</td>
<td>room occupancy, website traffic, weather</td>
</tr>
<tr>
<td>Rivera, 2016</td>
<td>Hotel non-resident registrations</td>
<td>dynamic linear model</td>
<td>Google trend data, NHR</td>
</tr>
<tr>
<td>Höpken et al., 2017</td>
<td>Tourism demand</td>
<td>linear regression k-nearest neighbour (k-NN).</td>
<td>Arrival data, Google Trends data base</td>
</tr>
<tr>
<td>Li et al., 2017</td>
<td>Tourism demand</td>
<td>generalized dynamic factor model, principal component analysis</td>
<td>Tourist arrivals and Baidu index</td>
</tr>
<tr>
<td>Höpken et al., 2018</td>
<td>Inbound tourism</td>
<td>linear regression</td>
<td>Tourist arrivals, Google search terms, time lags</td>
</tr>
</tbody>
</table>

Note: BPNN is short for back propagation neural network; SAIMA is short for seasonal autoregressive integrated moving average; ECADLM is short for error correction autoregressive distributed lag model.
According to table 1, there have been only a few published studies focusing on hotel room demand prediction with search query engine, and most of them focusing on tourism arrivals. Moreover, few studies have applied sentiment scores of hotel comments to predict tourism arrival and hotel demand. Besides, it is observed from the table 1 that time series models, econometric approaches are still the mainstream methods to forecast the tourism and hotel demand. Few studies of AI-based methods for hotel demand forecasting have been published.

3 Conceptual Development

Travellers are more likely to search online to collect information during the travel planning process (Sun et al., 2019). The internet search data will be more timely in terms of hotel demand forecasting for it can feedback tourists’ potential demand (Wu et al., 2017). Meanwhile, internet search data has already been applied to the field of epidemic diseases forecasting, jobless rate, stock and real estate sales and others. (Askitas et al., 2009; Choi et al., 2012; Ginsberg et al., 2008; Weng et al., 2018). Besides, sentiment scores are shown to have prediction significance in financial area (Weng et al., 2018). However, compared with other disciplines, studies in tourism, especially in hotel demand forecasting with search engines and sentiment analysis is still rare. Thus, the following hypothesis is proposed:

Hypothesis 1: Hotel demand forecasting models with mixed data (hotel statistical data + Baidu index + sentiment scores) is better than models with only hotel statistical data in terms of forecasting accuracy.

With the development of technology, some new methods have been adopted by tourism studies. One of them is machine learning method, which has the advantage of needing no assumptions. The real datasets are often featured with non-stationary, measurement errors and missing characters, which against the data assumptions of the traditional methods. Compared with the traditional methods, machine learning method can overcome the limitation of the real datasets and enhance the prediction accuracy. Artificial Neural Network (ANN) is one of the machine learning methods. And previous studies have provided evidences that ANN can outperform some traditional methods (Sun et al., 2019). To summarize, the following hypothesis is proposed:

Hypothesis 2: The proposed machine learning models can outperform the benchmark models (support vector regression, boosted regression tree, random forest regression) in terms of forecasting accuracy when using the same data.

4 Proposed Methodology

This study adopts extreme learning machine (ELM), which belongs to single-hidden layer feed-forward neural networks family, as a new method to forecast hotel room demand. The superiority of the ELM models is that the input weights and biases are randomly generated and the hidden layer parameters need not be tuned. The output weights are obtained by simple matrix computations, so the computing time is very short (Sun et al., 2019). Short calculating time and excellent application ability are two key advantages of the ELM models.

The data will be consisting of three parts: hotel statistic data + search queries volume + sentiment scores, all will be collect from January 2012 to December 2017. Hotel statistic data will be provided by STR database (https://www.strglobal.com/). As for sentiment scores, daily hotel comments will be collected from major online booking
platforms and hotel websites of China. And search queries volume will be obtained from Baidu index. The reasons to choose Baidu Index are as below: first, Baidu (www.baidu.com) is the largest Chinese search engine, which occupies approximate 80.5% market share in China; second, Chinese tourists seldom use Google to search hotel information for it has been blocked in China since 2010. Thus, Baidu will be the best search engine to reflect search behaviours of domestic hotel demand in this study. The search keywords of Baidu index will be consisting of room price, hotel name, comment and location. The data will be categorized into training-sample subsets and empirical-testing-sample subsets.

The experimental design will adopt three machining learning models as the benchmark models: support vector regression (SVR), boosted regression tree (BRT), random forest regression (RFR). And the experimental group will be categorized into three kinds of models: models forecasting with only statistical data provided by STR; models forecasting with two mixed data combined with STR data and Baidu index; models forecasting with all three mixed data(hotel statistic data + Baidu index + sentiment scores). NRMSE (short for normalized root mean squared error) and MAPE (short for mean absolute percentage error) will be the criteria to appraisal all models’ prediction accuracy.

5 Anticipated Results

The expected result is that KELM models which run with “hotel statistical data + Baidu index + sentiment scores”, is more accurate than other popular machine learning models. And all models run with mixed data are more accurate than models run only with one single type data.

References


Forecasting Tourist Arrival Using Composite Features

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Abstract

Tourist arrivals forecasting is helpful for the Destination Management Organization (DMO) and Destination Marketing Organization (DMO) to make correct strategic decisions. There have been many researches based on big data analysis for DMO, and the tourism demand forecasting is one of them. However, most of the studies in forecasting only consider the time series data of historical tourists or Internet search data, and there are few studies on the tourist arrivals forecasting in Gansu province. Therefore, based on the theory of Artificial Neural Network (ANN), a combined forecasting model that considers time series data and panel data (weather data, publicity effect data) comprehensively is proposed. The research in this paper is divided into two stages: the first stage is the data pre-processing stage, and the second stage is the data prediction and analysis stage.

Keywords: Smart tourism; DMO; Tourist arrivals; ANNs; Forecasting;

1 Problem Definition

Smart tourism (LI Yunpeng et al. 2014) is mainly reflected in the two aspects of tourism management and tourism marketing for DMO. Based on tourism big data, destination management and marketing can be conducted from multiple perspectives. For example, a research model is established to study the relationship between tourism intention and tourists' satisfaction through information search and online reputation (Selira Kotoua, Mustafa Ilkan, 2017) to provide useful information for DMOs. In terms of forecasting (Haiyan Song, Rob J. Hyndman, 2011), the tourist arrivals on the two dimensions of time and space has a great effect on tourism management and marketing (Ulrich Gunter et al., 2016. George Athanasopoulos et al., 2008). For example, for certain scenic spots, short-term tourist volume forecasting can be used to determine the degree of crowding, or tourist arrivals also can be forecasted during certain festivals.

In the current study, the input of most prediction models is to use only historical visitor arrival time series data or only Internet search data (Chen, KY et al., 2007). However, if only tourist time series data is considered, the model relies excessively on historical tourist data, and does not fully consider the influence of other factors on the amount of tourist arrivals, such as weather factors and publicity, besides, if the historical data is too small, accurate forecasting results will be not obtained. Therefore, this study proposes ANNs-based tourist arrivals forecasting model that considers weather factors, historical arrivals, and network publicity. In order to reflect the superiority of the proposed model, the proposed model is used for the tourist arrivals in Gansu Province, and the benchmark models are selected for comparison. Comparison criteria include Mean Square Error (MSE), Mean Absolute Error (MAE), Mean Absolute Percentage Error (MAPE) and R-square.
2 Literature Review

2.1 Smart tourism

Smart tourism is to integrate tourism resources, manage tourism resources through technologies such as cloud computing and Internet to provide more valuable information for tourism and tourism-related industries, and to bring more intelligent services and better tourism experience to tourists. The construction and development of smart tourism will be embodied in the four aspects of tourism experience (Sung Joo Baea et al. 2017), tourism management (Nick Towner, 2016), tourism service (George S. Atsalakis et al. 2018) and tourism marketing (Helena Albuquerque et al. 2018). There are two research dilemmas (Chulmo Koo et al. 2017) to established academic communities. One is a difficulty to get complete information about tourists before traveling, during traveling and after traveling. The other is a difficulty to produce business models, services, economic input/output, and applications for smart city and smart tourism.

2.2 Forecasting and smart tourism

Tourism forecasting has been studied for many years, at present, combining tourism forecasting with smart tourism can be an auxiliary tool for DMO. Accurate tourism forecasting plays an important role in DMO. A research (Stephen F.Witt & Christine A.Witt. 1995) summarized and analysed the main methods for tourism demand forecasting that had been published and indicated that the vast majority of such studies are concerned with econometric modelling/forecasting. C.J.S.CBurger et al. (C.J.S.CBurger et al., 2001) employed a variety of techniques which contains traditional methods, genetic regression and neural networks to forecast the US demand for travel to Durban, South Africa, and results showed that the neural network method had a best performance. In the next few years, most of researches used statistical forecasting methods and econometric models to forecast the tourist arrivals based on time series data. Fong-Lin Chu. (2004) employed the cubic polynomial model to forecast the volume of tourist arrivals, the results showed that the value of MAPE was higher than ARIMA, but it has the advantage of lower cost forecasting. Kuan-Yu Chen and Cheng-Hua Wang (Kuan-Yu Chen, Cheng-Hua Wang, 2007) proposed a novel approach (GA)-SVR which stand for an SVR model whose parameters were optimized by Genetic Algorithm (GA). Haiyan Song and Gang Li (Haiyan Song, Gang Li, 2008) reviewed the published studies on tourism demand modelling and forecasting since 2000 and identified some new research directions like improving the forecasting accuracy through forecast combination; Many studies (Kuan-Yu Chen, 2011. Jamal Shahrabi et al., 2013) show that the forecast accuracy of combined model and hybrid model is higher than that of single model. In addition to using historical tourist arrivals time series data for forecasting, it can also use network search data for forecasting (Yuan-Yuan Liu et al. 2018). For example, web search query volume of two different search engines (Google and Baidu) were used respectively to predict tourist arrivals for a popular tourist destination in China (Xin Yang et al. 2015). Destination price and web traffic per sending country were used as additional input to predict the tourist arrivals (Wolfram Höpken et al., 2017). Besides, a method to identify relevant search terms and time lags (i.e. time difference between web search activities and corresponding tourist arrivals) was presented and traveller’s web search behaviour was used as additional input for predicting the tourist arrivals (Wolfram Höpken et al., 2017).
Table 1. Summary of Previous Studies in tourist arrivals forecasting.

<table>
<thead>
<tr>
<th>Author</th>
<th>Data</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>John T. Cosshall et al. (2011)</td>
<td>UK outbound tourism numbers by air to the eighteen destinations in Europe in 2006 (Q1 1976–Q3 2007). Quarterly tourist arrivals</td>
<td>ARIMA</td>
</tr>
<tr>
<td>Andrea Guizzardi et al., (2015).</td>
<td>soft information, retrieved from business surveys</td>
<td>ARIMA</td>
</tr>
<tr>
<td>Xin Yang et al., (2018)</td>
<td>search query data (SQD)</td>
<td>ARIMA</td>
</tr>
</tbody>
</table>

3 Conceptual development

From previous studies, we can see that the tourist arrivals forecasting only use historical tourist arrivals data, or only use network search data. The publicity effect data and weather data have never been used for forecasting. Besides, there are few articles on tourism research of Gansu province. This study argues that weather features and publicity effects can also affect the tourist arrivals, and can also be used to forecast the tourist arrivals. In terms of technology, this study involves data mining, artificial neural network and modern intelligent optimization algorithm. Based on this, this paper proposes a model used the historical tourist arrivals data, weather data and publicity effect data for the tourist arrivals forecasting.

4 Proposed Methodology

This study predicts the tourist arrivals of Gansu Province based on ANNs for better tourism management and marketing. The proposed model is shown in Figure 2. This research contains two stages, data pre-processing stage and data forecasting & analysis stage.

4.1 Data pre-processing

The data set involved in this study consists of three parts, historical tourist arrivals data for Gansu province, weather data and publicity effect data. The weather data mainly includes precipitation, temperature, wind speed, solar radiation, wind direction and other features, the weather features associated with the tourist arrivals are selected through using Gray Relational Analysis (GRA). The publicity effect data mainly includes readings, clicks, likes and score of scenic spots in Gansu province on Online
Travel Agency (OTA). In the collection of publicity effect data, two time periods should be considered, (1) the data collection time period, for example, the number of weekly clicks, monthly clicks or other clicks should be counted. (2) the interval period, that is the interval value between the forecasting start time and the data statistics end time, which should consider the distance between the source and destination and the mode of transportation. Figure 1 shows the tourist source in Gansu in 2018. The selection of these two values is also a focus in this research. Data cleaning for the above data mainly includes missing value and noise processing. At last, time series data and panel data obtained weather data and publicity effect data are obtained.

4.2 Data forecasting & analysis

The pre-processed data is divided into three parts, training set, verification set and testing set. The methods we use are three machine learning algorithms. The model contains the CS-SVM, Extreme Learning Machine (ELM) and CS-BP. CS-SVM means a Support Vector Machine (SVM) (Collobert R et al., 2001) model whose parameters are optimized by Cuckoo Search (CS) (Yang, XS et al., 2009) algorithm. CS-BP means a Back Propagation (BP) neural network whose parameters are optimized by CS algorithm. BP neural network adopts Gradient Descent algorithm, the output is sensitive to the initial weight and threshold, the forecasting accuracy and the speed of convergence can be improved by optimizing the weights and thresholds by CS algorithm. CS algorithm is introduced into SVM parameter optimization model to improve the forecasting accuracy. Besides, ELM (Huang, GB et al., 2006) has fast learning speed and good generalization performance.

The specific process is as follows: (1) For the tourist arrivals time series data, we use three single models (CS-BP, ELM and CS-SVM) for training and forecasting. (2) For panel data, weather data and publicity effect data, each type of data is forecasted using the three models mentioned above, and verification set is used to select the model most suitable for this type of data based on MSE and MAPE. (3) verification set and modern intelligent optimization algorithms are used to determine the weight coefficients of the combined model. Based on the above three steps, we put forward three models (Model A, Model B and Model C). The model D combined the CS-SVM, ELM and CS-BP through CS algorithm is a benchmark model, which only uses historical visitor arrival data as input.
5 Anticipated Results

In this research, historical tourist arrivals data, weather data and publicity effect data were comprehensively used to forecast tourist arrivals. Besides, this study takes artificial neural network algorithm as the theoretical basis and combines modern intelligent optimization algorithm for combined forecasting. The purpose of this study is as follows: The purpose of this study is as follows: (1) improve the accuracy of tourist arrivals forecasting; (2) analyse the ranking of the impact of historical tourist arrivals data, weather factors and publicity effect data on forecasting accuracy by comparing the forecasting results of Model A, Model B and Model C. At present, historical tourist arrivals data, weather data and publicity effect data are not complete. Follow-up work mainly includes: (1) Complete experiments will be conducted after data collection. (2) Build an online forecasting platform.

Acknowledgements

The authors would like to thank to the National Key Research and Development Program of China (2018YFB1003205) for supporting this research, the smart tourism project “Smart Travel to Gansu” from Gansu Tourism Administration, the advisements and support from Qin Bingfeng who is the head of the smart tourism department of Gansu Tourism Administration, and the support from Li Min and Yang Yi who are the team members of smart tourism project.

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Tourist Satisfaction with Personalised Information Service
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Abstract
Personalisation is acknowledged as a critical factor for improving tourist experience. Lack of systematic understanding of the way how interactions with personalised service affect tourist perceptions on its performance increases the risks of customer frustration. The study aims at explaining the influence of personalised information service performance attributes on tourist value and overall satisfaction. The two-stage sequential research design with the combination of qualitative and quantitative research methodologies is applied to acquire the insights of tourists reasoning in relation to the service and to validate the model of tourist satisfaction with personalised information service. The study is expected to contribute to consumer behaviour and user behaviour domains by providing a detailed explanation of the process of customer satisfaction creation. The findings shall also be applicable for advancing business strategy and assessing the existing personalised information services in tourism.

1 Problem Definition
Matured tourism industry and integration of the Information and Communications Technologies (ICTs) in everyday and travel experience increased tourists expectations towards the capabilities of travel services to satisfy their needs (Neuhofer, Buhalis, & Ladkin, 2015). In the context of high volumes of heterogeneous travel information, tourists want to have relevant solutions that would simplify their decision-making process and enable time savings (Barragáns-Martínez & Costa-Montenegro, 2014). Personalised service, which is designed to satisfy the immediate needs of exact customer, is becoming one of the major tourist requirements and a tool for businesses that allows them to remain competitive on the market.

While acknowledging the importance of personalisation for customer satisfaction and loyalty (Grün, Neidhardt, & Werthner, 2017), both the industry (e.g. Skift, 2018) and the academia (e.g. Morosan & Defranco, 2016) associate its application with the increased risks of customer frustration. However, there is no systematic explanation of the way how information service performance attributes, which are engaged in personalisation, change tourist perception on this service performance, as well as on the acquired or lost benefits. To fill the gap, this study aims at explaining the way how personalised information service characteristics affect tourist perceptions on co-created value and overall satisfaction. It applies service satisfaction model (Song et al., 2012), supplemented with the information system success dimensions (DeLone & McLean, 2016) under the perspective of Service-Dominant Logic (Vargo & Lusch, 2017) to propose the model of tourist satisfaction with personalised information service.

2 Literature Review
2.1 Personalisation of Information Service in Tourism
The process of personalisation summarises techniques that allow companies to identify individual customer needs, create new or modify existing service parameters according to these needs and deliver the service in the form that is suitable for this exact customer
Tourist behaviour is dynamic and highly context-dependent (Buhalis & Foerste, 2015). Stable preferences can be supplemented with or substituted by immediate wants, which are triggered by the factors of destination, physical, social and technical environment. Personalisation of a website or an app in tourism context can be defined as implicit adaptation of available travel content and information system (IS) functionality, as well as of the way how they are delivered to a tourist, according to this tourist immediate needs, desires, preferences or restrictions (Asif & Krogstie, 2013). To enable relevant service adaptation, personalisation requires tourist needs to be accurately identified by service provider. Smart technologies allow to track and aggregate high volumes of destination-related and personal data, and to use them to hypothesise real-time tourist situation and potential requirements. Within a dyadic relationship between a tourist and a service provider personalisation process requires tourist to accept dual role of a consumer and a personal data provider.

The research in the domain of information service personalisation provides exhaustive details of tourist interactions with the information system outcome. Specifically, accurately selected and relevantly presented content can increase user perceptions on website usefulness, ease of use and lead to the overall positive evaluation of the service performance (e.g. Piccoli, Lui, & Grün, 2017). At the same time, several studies from different domains report that user perceptions on privacy, security (Morosan & Defranco, 2016) and established control over personal data and personalised outcome (Asif & Krogstie, 2013) may cause frustration. However, the research lacks systematic explanation of the mutual effect that company-enabled and tourist-enabled service characteristics have on tourist perception on this service performance, as well as on the achieved level of customer satisfaction.

2.2 Personalised Information System Assessment

Information service assessment can be done through a variety of methods. Depending on the definition of service performance these methods can be summarised into three major approaches. The first approach accepts business perspective and focuses on customer perceptions on service performance as a reflection of its attributes (e.g. SERQUAL and its derivatives). It enables straightforward service assessment, and, therefore, is often applied for IS assessment (Law, Qi, & Buhalis, 2010). However, it is not helpful to explain whether information service satisfies tourist individual needs and creates benefits. The second approach is grounded on consumer behaviour theory and decision-making process (e.g. Song et al., 2012). It takes customer perspective and uses customer satisfaction as a metric of overall service assessment. Generally-defined service performance is therefore placed within a multistage process of human reasoning, undergone before articulating a judgement about customer satisfaction. This approach is easy applicable in different contexts. However, it does not allow to illustrate the relationships between information service performance attributes and customer satisfaction. Lastly, the integrative frameworks bring together major dimensions of IS performance, such as information, IS and service provider performance, and their mutual effect on user satisfaction and intention to use as a form of loyalty (e.g. DeLone & McLean, 2016). Several models of this type were specifically developed for recommender systems (e.g. Pu, Chen, & Hu, 2011). However, none of the abovementioned approaches incorporate all personalised information service attributes, affected by customer participation in personalisation process.
3 Conceptual Development

Service-Dominant Logic (SDL) defines service as a process of integration of resources from a customer and a service provider. It proposes theoretical explanation of the way how interactions between these parties co-create or co-destruct value (Plé & Chumpitaz Cáceres, 2010; Vargo & Lusch, 2017). Customer value is the result of experienced processes of resource integration, performed by service provider, by IS and by the customer himself (Payne, Storbacka, & Frow, 2008). Therefore, customer is seen as an active co-creator of service and the benefits or losses it provides. SDL is, therefore, advantageous to achieve the aim of this study and develop an approach that will explain the influence of performance characteristics of personalised information service on tourist experience. First, it explains service at the level of invested resources and achieved parameters. Tourist may not be aware of internal processes of personalisation. However, they experience interactions with the adapted content and IS interface, as well as some of the service provider co-creation processes. This goes in line with the IS success dimensions of information, system and service quality (e.g. DeLone & McLean, 2016). At the same time, SDL allows to add the lacking dimension of tourist participation in the process of personalisation. Second, SDL defines value from the perspective of each actor’s motivations. This is consistent with the equity approaches, which analyse the influence of expectations, perceptions on service performance and value on the overall satisfaction (Song et al., 2012). It additionally illustrates that each of the experienced processes may increase or undermine utilitarian, hedonic and other benefits of a service, explaining potential negative reaction of tourists on accurately personalised information service. Therefore, this study aims at explaining the effect of personalised information service performance with a help of service satisfaction model (Song et al., 2012), supplemented with the information system success dimensions (DeLone & McLean, 2016) under the perspective of SDL (Vargo & Lusch, 2017) (Figure 1). It defines service performance and value as being co-created both by a tourist and an information service provider. Service performance is conceptualised as being formed by tourist perceptions on experienced performance of personalised content, interactions with the IS attributes, service provider interactional processes, as well as on their own participation in service personalisation. Customer co-created value is defined as tourist perception on the sum of the acquired and/or lost benefits from interactions with the information service performance dimensions.

The objectives of the research can be summarised as follows: (1) to explain the specific effect, which personalised information service performance dimensions have on co-created value and overall satisfaction; (2) to determine appropriate indicators to represent co-created service performance and value constructs; (3) to refine the proposed measurement scale for co-created service performance and value; (4) to validate the hypothesised model of tourist satisfaction with personalised information service.
4 Methodology

The study is guided by pragmatic research paradigm. Pragmatism postulates that reality is subjective and context-dependent, but valid knowledge comes only from a community of inquiries (Silcock, 2015). Therefore, it calls for combination of deductive and inductive reasoning and enables integration of qualitative and quantitative methodologies. Such vision goes in line both with the need for individually designed information service and with the commonly applied practices of measurement scale development (e.g. Diamantopoulos & Winklhofer, 2001) and model assessment (e.g. Hair Jr et al., 2017). The study applies two-stage sequential research design (Davis, Golicic, & Boerstler, 2011). Primary method is used to expand the existing knowledge and to explain the phenomenon, enabling subsequent implementation of the second group of methods.

To explain tourist reasoning towards value co-creation by personalised information service, to determine appropriate indicators for representing co-created service performance and value, the study applied qualitative methodology. Given the intangible nature of service and the fact that tourists may not be exposed to a range of resource integration processes, the purposive sample of 17 in-depth semi-structured interviews with the three groups of participants were used to triangulate the acquired knowledge and develop comprehensive understanding of the phenomenon. They included Hong Kong residents, who recently travelled and applied personalised website or app during their trip, industry practitioners from tourism marketing and/or IT sector, and academics from tourism & ICT domain. In-vitro coding (KALPHA = 0.884 achieved among two coders) and thematic analysis with the subsequent validation by peer-review are applied for data analysis.

To refine the proposed measurements and validate the hypothesised model, the study accepts quantitative set of methods. Given the types of the constructs, the number of relationships in the model (Hair Jr et al., 2017), and the need to target population from the similar cultural, travel and technical contexts, required by pragmatism, the study will collect 250 valid responses from Hong Kong residents, who used Google Trips app.
to organise their trips. The data will be analysed according to the procedure of outer and inner model validation of PLS-SEM.

5 Anticipated Results

The qualitative stage generally confirmed the proposed conceptual model and revealed a potential mediator of tourist perceptions on co-created performance. First, it demonstrated that co-created personalised information service performance is a four-dimensional second-order formative-formative construct and elaborated 23 indicators to measure it. Specifically, the performance of personalised content is confirmed as associated with the relevance of information and its amount in context (e.g. Pu et al., 2011; Wang & Strong, 1996). The performance of interactions with the IS attributes is specified as usability parameters. Service provider co-creational processes are refined as including several parameters of ‘service quality’ dimension (DeLone & McLean, 2016). The fourth dimension of customer co-creation processes is defined as tourist perceptions on their involvement and control over personalisation (Ranjan & Read, 2016).

Second, qualitative research confirmed the idea of SDL that value from personalised information service for tourists arises from multiple dimensions, and each of them can become a benefit or a loss. Utilitarian value, such as usefulness for problem-solving, is outlined as the most important outcome. Personalised information service can also trigger hedonic and experiential benefits and losses in the form of pleasurable/annoyance and interest/boredom, accordingly. Lastly, it is also associated with the feeling of empowerment and trust to the service. Together, the above-mentioned value dimensions appear to mirror major dimensions of tourist information needs (Vogt & Fesenmaier, 1998).

Third, the first stage of research revealed that tourist awareness of information service being personalised decreases their perceptions on each of the dimensions of co-created service performance, affecting value co-creation processes. Moreover, the findings demonstrate that some tourists do not pay attention to IS notifications about tracked data and adapted content and functionality and may dynamically change their assessment of information service performance immediately after they learn about personalisation being applied. However, these findings require further confirmation.

After completion of the second stage the research is expected to provide comprehensive understanding of tourist perceptions on interactions with personalised information service. Conceptually the study is expected to contribute to consumer behaviour and user behaviour domains by explaining the role of each information service performance characteristic on the process of tourist satisfaction. Practically, the findings shall advance the logic of personalised IS design development, as well as serve as an instrument to assess performance of such systems.

References


Blended Tourism Experiencescape: A Conceptualisation of Live-streaming Tourism

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Abstract

Live-streaming has become popular worldwide as digital solutions provide ever creative opportunities to bring activities in life that were previously impossible. Travel is one of the most common live-streaming topics. This research proposes that ‘live-streaming tourism’ (LST) is a distinct socio-technological phenomenon. However, research on LST remains under-explored. This study sheds light on LST by incorporating existing relevant concepts to propose a blended tourism experiencescape model to address live-streaming tourism from a theoretical perspective. This model is used as a basis for identifying new research opportunities. The proposed research program will then explore the role of authenticity and para-social interaction practices in LST context.

1 Problem Definition

In contemporary society, technology is increasingly embedded in everyday life, enhancing the ways we interact and experience the world around us (Gretzel & Jamal, 2009; Lefebvre, 2017). In the tourism context, the growing number of digital solutions provide creative opportunities for engaging with tourism, leading to significant changes in the ways in which tourists and their social networks are able to produce, consume and interact with tourism destinations (Gretzel, Sigala, Xiang, & Koo, 2015). As digital encounters infiltrate the entirety of our touristic journey, the spectrum of technological engagement has produced a new type of traveler called the ‘smart tourist’ (Femenia-Serra, Neuhofer, & Ivars-Baidal, 2018). Smart tourists interact and co-create experiences using smart technologies. Among these technologies, live-streaming has started to increase in popularity, particularly among younger Asian consumers.

Live-streaming refers to the medium of recording and broadcasting live audio and video in real-time over the Internet (Thorburn, 2014). The growth of live-streaming has led to a number of recent academic studies focused on describing live-streaming (Todd & Melancon, 2018). In addition, the features of live-streaming platforms facilitate real-time interactions, thereby connecting live-streamers to viewers or ‘live-streaming tourists’ (Pires & Simon, 2015). The interactive nature of live streaming tourism creates a blended experience consisting of virtual content experienced in physical settings that are removed from the site of the touristic activity. However, the study of live-streaming is relatively new and the research to date has been limited. Empirical studies of touristic live-streaming have barely been explored in real world applications.

The proposed study consists of three interrelated papers that explore different aspects of live streaming tourism. The first paper aims to theoretically define and conceptualise live-streaming tourism, and its role in facilitating tourist experiences. The technological, visual, and social forms of live-streaming tourism are further explored. Building on these conceptual foundations, the second and third papers examine the role of authenticity and interaction in live streaming tourism.
2 Literature Review

Live-streaming in tourism has evolved from several recent developments and useful insights can be gained by considering this new phenomenon from a number of different perspectives compared with other visual media such as photography and videography (see comparison of Table 1). Despite the intimacy of these tourism visual media, live-streaming in tourism context not only brings about technological enhancement, but an ensemble of shifting and fluid experiences in time and space (Zhang & Liu, 2015). First, a distinctive characteristic of live-streaming tourism is the notion of time. In contrast to other visual media commonly used in tourism, the distinctiveness of live-streaming derives from its real-time nature (Taylor, 2018). Second, reflecting on Oldenburg’s (1997) conceptualisation of third places as informal public spaces where people engage in sociability to form and maintain communities, destinations experienced via live-streaming could be regarded as virtual or online third places. The feeling of ‘almost being there’ increases immersion and engagement and enables tourists to be virtually involved in their ‘surroundings’ via a digital lens (Mueser & Vlachos, 2018).

Table 1. Tourism visual media comparison

<table>
<thead>
<tr>
<th></th>
<th>Photography</th>
<th>Videography</th>
<th>Live-streaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Time</td>
<td>Pre-recorded</td>
<td>Pre-recorded</td>
<td>Real-time/archived</td>
</tr>
<tr>
<td>Space</td>
<td>Virtual</td>
<td>Virtual</td>
<td>Blended</td>
</tr>
<tr>
<td>Performance</td>
<td>Raw/Edited</td>
<td>Edited</td>
<td>Unedited</td>
</tr>
<tr>
<td>Authenticity</td>
<td>Contrived</td>
<td>Contrived</td>
<td>Staged authenticity</td>
</tr>
<tr>
<td>Storytelling</td>
<td>Static</td>
<td>Scripted</td>
<td>Spontaneous</td>
</tr>
<tr>
<td>Social interaction</td>
<td>Asynchronous</td>
<td>Asynchronous</td>
<td>Synchronous</td>
</tr>
</tbody>
</table>

The evolution of technology opens avenues for live-streaming to create blended tourism experiences. At the same time, tourism experience is not merely an encounter happening in isolation; it often involves a significant set of social relations. For example, live-streaming raises questions about the nature of authenticity because live-streaming video is not like photography or videography, where the selection and manipulation of visual frames and sound can result in content that may feel contrived. Although live streamers exercise some discretion over what scenes to capture, the lack of post-production editing means that live streams are more likely to capture authentic events, objects, places and people (Tiberghien, Bremner, & Milne, 2017). Following MacCannell (1973), there is an opportunity to explore whether live streams are more likely than other visual media to be perceived as representations of backstage settings or perhaps a form of staged authenticity.

On the other hand, due to the rise of digital technologies, media consumption and social trends, consumers of digital content may come to know more people parasocially than directly through interpersonal contact (Jin and Park, 2009). Notably, but not exclusively, as a multi-dimensional form of new technology, the digital nature of live-streaming offers a means for direct interaction between live-streamers and viewers through digital encounters. In mass media contexts, the connection between individual viewers and media personalities have been recognised as an illusionary one-sided relationship described as parasocial interaction (PSI) (Horton & Wohl, 1956). PSI has been employed frequently in live entertainment in mass media, but recently it has been applied to computer-mediated environments. Rather than the conventional one-way transmission of live TV, a sense of PSI can be triggered in the live-streaming via two-sided communication (Dibble, Hartmann, & Rosaen, 2016). As such, touristic live-
streaming transcend spatial and temporal boundaries to infiltrate digital communication. It is likely to facilitate hybrid or blended tourism experience whereby viewers watch the stream but are also able to participate in the experience by ‘directing’ live streamers in the destination. However, the concern is, whether live-streaming tourism has made PSI more a part of live-streaming tourism needs further exploration.

3  Conceptual Development

To facilitate the discussion, a theoretical framework is proposed in Figure 1 to illustrate the three research papers that make up the proposed research program. The first paper is a conceptual paper that will define live-streaming tourism, building a conceptual model incorporating technological and social practices within its distinctive characteristics. The subsequent papers are empirical studies that explore social practice in live-streaming tourism. Specifically, the second paper will focus on the concept of authenticity by negotiating how authenticity can be constructed in the production and consumption of live-streaming tourism. The third paper will concentrate on the role of para-social interaction in facilitating a blended tourism experiencescape.

Fig. 1. Theoretical Framework for the Proposed Research

4  Proposed Methodology

Following interpretive social science paradigm, a qualitative research methodology is suitable for this thesis as it allows for exploring and understanding the thoughts of research objects (Jennings, 2001).

4.1 Research Design

This research is designed to be conducted in three phases: a pre-live streaming stage, a during-live streaming stage, and a post-live streaming stage. The netnographic method will be applied during live-streams to observe live-streaming activities online (Kozinets, 2015). A phenomenography approach will be employed at the pre- and post-live streaming stages by interviewing live-streamers. Therefore, both netnographic and phenomenographic methods will be applied to address the research aims (Lewis, 2015).
4.2 Data Collection
Several data collection methods will be adopted to enable the desired understanding including qualitative interviews and online observation. Before the data collection, a pilot study of two to four participants will be conducted to test the feasibility of this method. Purposive sampling and snowball sampling will be applied to recruit live streamers (Hammersley, 2016), with each of these methods applied in this study after due consideration of their strengths and weaknesses (Fusch & Ness, 2015).

4.3 Data Analysis
In order to analyse and interpret the collected data, a qualitative approach to content analysis will be adopted. Content analysis focuses on the content or its contextual meaning (Neuendorf, 2016). This approach will also be utilised in the data collection process to ensure the identified themes can be evaluated in parallel with the empirical setting. Then, various components of live-streaming tourism (social practices and technological practices identified in the first paper) as well as knowledge derived from the academic literature will form the conceptual and theoretical guides to assist organise and categorise the collected data.

5 Anticipated Results
It is anticipated that the proposed research will make both theoretical and practical contributions to the understanding of blended tourism experiencescape through live-streaming tourism. Theoretically, it is argued that live-streaming tourism is (a) a multidimensional form of vicarious tourism consumption enabled by new technologies and (b) a distinct sociotechnical mediator for constructing tourist experiences. In addition, this research will also make several practical contributions to the social media platforms and DMOs. They may be inspired to use live-streaming as a strategic tool to manage their communication with consumers, in order to offer more personalised and efficient products and services that improve tourist experience.

References

Customer Experience with the Application of Self-service Technology in Hotels in China

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Abstract
With the ever-increasing technological advances, self-service technologies (SSTs) have shown potential to supplement or replace personal services. However, limited attention has been paid to the preference of customers and hoteliers for SSTs during the delivery of hotel service. Therefore, this research aims to develop a framework to link and explain how customers and hoteliers construct their preferences for innovative SSTs at different service delivery stages from an experiential perspective. To achieve this objective, mixed methods (in-depth interviews followed by a survey) will be adopted. The findings will contribute to the knowledge on the role of SSTs in human life, enhance the understanding of experience economy and provide valuable references for hoteliers regarding service delivery channel management.

1 Problem Definition
The ever-increasing technological advances have influenced all dimensions of human life, and the hotel industry is no exception. Henn na Hotel, the world’s first hotel staffed by robots, opened in 2015. Facial-recognition check-in kiosks and smart speakers have also been rolled out in hotels. These “technological interfaces that enable customers to produce a service independent of direct service employee involvement” are labelled as self-service technologies (SSTs) (Meuter et al., 2000, p. 50). Innovative SSTs show potential to supplement or replace personal services.

Previous studies concerning SSTs divide into two dimensions: customers’ adoption of SST and its influences on customer commitment, satisfaction and delight. However, the two streams ignore suppliers’ opinions and separate SSTs from manpower. According to reference-independent preference, decision making is influenced by a reference point (Kahneman & Tversky, 1979). Therefore, it is necessary to take another channel (employee) into account to explore preferences rather than the “intention to use” SSTs (Gelderman et al., 2011). Moreover, prior studies focused on single service encounter (e.g., check in) and overlooked the complexity of hotel service delivery, which is usually divided into dissimilar service encounters (e.g., check-in, room, restaurant and check out). Hence, the present study aims to develop a framework to articulate how customers and hoteliers construct their preferences for SSTs at different service delivery stages from an experiential perspective.

2 Literature Review
2.1 Different Service Delivery Channels in Hotel
Service delivery channel refers to “the means of communication through which a service is delivered to (or reaches) the customer” (Sousa & Voss, 2006, p. 357). Service providers offer diversified channels and customers adopt various channels to satisfy their needs (Berry et al., 2010; Pietersen & Ebbers, 2008). However, the multiplicity of channels has sparked a debate. The synergies of diversified channels enable customers to enjoy efficiency (Betancourt et al., 2016), whereas the inconsistency across channels probably leads to customer confusion or difficulties in managing service quality and
levels (Berry et al., 2010). Consequently, it is necessary to articulate the trade-offs among multiple channels, particularly between SSTs and service employees. SSTs eliminating employees’ direct intervention represent high technology. By contrast, employees underlying the entire involvement of humans represent high touch. This statement is in accordance with previous studies claiming that SSTs are some of the most prevalent ‘high-tech and low-touch’ technological interfaces, which have complemented or supplanted ‘high-touch and low-tech’ manual service encounters (Kim & Qu, 2014).

2.2 Customer Experience with Different Service Delivery Channels

Service delivery plays a crucial role in customer interaction (Chen et al., 2009). In the service industry, the influences of customers’ dis/satisfaction with employees have been explored from the perspectives of customers and employees (Bitner et al., 1994; Bitner et al., 1990). Meuter et al. (2000) identified factors influencing customers’ dis/satisfaction with SSTs. Nevertheless, customers usually adopt different channels to receive a service (Pietersen & Ebbers, 2008). As such, previous studies taking a single-channel perspective seemingly restrict the comprehensive understanding of the influences of multiple channels on customer experience. Such a claim is consistent with the opinion of Giebelhausen et al. (2014) who criticised previous studies on SST for exclusively focusing on technology and not considering SST interaction with other delivery ingredients. Thus, the present study explores customer experience with SST by taking employees into consideration as a response to the call of Wei et al. (2016) for investigation into the interaction effects between employee and SST.

2.3 Debate on High Touch versus High Tech

Debates on the choice between SSTs or employees have emerged alongside technological development (Wei et al., 2016). On the one hand, academics suggest integrating SSTs with employees (Salomann et al., 2006). They believe that profits rely on the cost allocation between e-services and human-based services (Ba et al., 2010). On the other hand, the incompatibility between SSTs and employees has drawn academic attention (Kokkinou & Cranage, 2013; Kucukusta et al., 2014). For instance, benefits derived from SSTs conflict with the emphasis placed by hotels on the significance of customer–employee encounters (Kucukusta et al., 2014). Enhanced customisation demanding employee involvement is incompatible with the decrease in waiting time via SSTs (Kokkinou & Cranage, 2013). Understanding these contradicting points from the perspectives of the suppliers and customers plays a vital role in the success of new and innovative technologies.

2.4 Current Theories for Technology Adoption

In the literature, extant studies have used various theories to explore the adoption of SST, including theory of reasoned action, theory of planned behaviour, technology acceptance model (TAM) or extended TAM, technology readiness, diffusion of innovation, task-technology fit theory and unified theory of acceptance and use of technology. Scholars have used these theories to confirm that technological characteristics (e.g., perceived usefulness), individual differences (e.g., demographic characteristics), situational influences (e.g., perceived waiting time) and task complexity affect customers’ intention to use SSTs (e.g., Kim & Qu, 2014).

However, these theories and influencing factors are mainly designed to tackle technology adoption intention instead of the preference among different service delivery channels. The antecedents of customer attitude toward different SST vary
The simplistic nature of a model based on a single service delivery channel is open to doubt. Therefore, this study aims to develop a framework to link and explain how customers and hoteliers construct their preferences for SSTs at different service delivery stages from an experiential perspective.

3 Conceptual Development

As SSTs infiltrate the tourism industry (Kaushik et al., 2015), customers’ adoption of SST has garnered academic attention (Kim & Qu, 2014). However, some studies in the hotel context are accused of exploring SST without considering alternative channels, thereby exclusively focusing on a single service encounter (e.g., check-in encounter) and neglecting hotels’ standpoints. Thus, as shown in Figure 1, this study aims to explore the preferences of hoteliers and customers for SSTs at different hotel service delivery stages by taking employees as a reference point based on strategic experiential modules (Schmitt, 1999). On the basis of the cognitivist theory of affordance (Cardona-Rivera & Young, 2013), discrepancies between hotelier’s and customer’s preference and experience are probed as well. These discrepancies can help hoteliers manage different service delivery channels to improve customer experience. Such a study is set in a context of China due to its special national conditions (e.g. labour issues, policies, great interest versus low application and rapid development of technology) and academic neglect.

![Figure 1. Study Framework of this Present Research](image-url)

4 Proposed Methodology

A qualitative research followed by a quantitative study will be conducted according to the good fit between the nature and characteristics of the objective of the study and the characteristics of sequential exploration design. This methodology is useful for the in-depth exploration of the preference for SSTs and measurement of its prevalence (Creswell & Clark, 2007). Moreover, the two-phase approach allows easy implementation and straightforward description and helps quantitative-oriented readers to understand the qualitative study (Creswell & Clark, 2007).

The first phase is a qualitative research where in-depth interviews with customers and hoteliers will be conducted. Chinese customers or hoteliers who have knowledge on
SSTs in a hotel-related context will be recruited via convenience and snowball sampling. Conversations will centre on the following: (1) What is your preference between SSTs and employees when checking in/ordering room service/dining in restaurant/checking out? (2) Why do you prefer SSTs/employees when checking in/ordering room service/dining in restaurant/checking out? The qualitative phase is followed by a quantitative research, which aims to generalise and test the conceptual framework derived from the qualitative research. In the quantitative phase, questionnaires will be distributed to customers and hoteliers who satisfy the same requirements in the qualitative research via online (employing a professional survey company) and offline (collaborating with hotels equipped with SSTs) methods.

5 Anticipated Results

By adopting mixed methods, this study will develop a framework to link and explain how customers and hoteliers construct their preferences for innovative SSTs at different hotel service delivery stages (i.e., check-in, room and restaurant services, check-out) from an experiential perspective. The findings will unveil the preference of customers and hoteliers and identify the experiential factors influencing such preferences at different service delivery phases. In addition, they will explain the plausible discrepancies existing between customers’ perceived experience and the experience that hoteliers wish to provide at a corresponding service delivery stage.

The results will contribute to handling the high-tech or high-touch debate. Hotels’ and customers’ channel choice is not a question of binary preference but channel sequencing (Reddick & Turner, 2012). Exploring the preference for specific SSTs by anatomising service delivery process into different service encounters (e.g., check in, room, restaurant, and check out) will provide a much more comprehensive knowledge than prior studies, which exclusively focused on the check-in encounter or overlooked the distinctions among different service encounters. The detailed findings will also provide valuable references for hoteliers in terms of deciding the places where SSTs can be applied and tailoring service offerings to satisfy customer needs. As a result, customer experience, loyalty and operation financial performance will be enhanced. The findings will also enrich the knowledge on experience economy. The experience economy emphasises the compatible interaction between customers and employees (Pine & Gilmore, 1998). Instead, this study extends the knowledge on the experience economy to a level where customers can generate services through SSTs without employee involvement.

References


Smart Technologies and Travel Experience

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Abstract

Recent advances in technology have led to the emergence of innovative intelligent technological solutions that offer opportunities for application in the tourism and hospitality industry. Furthermore, the use of these technologies by tourism and hospitality organisations may have an effect on the customer experience in several destinations. In this line, the main objective of this study is to develop a model that analyses the relationship between smart technologies and travel experience in consumers that have visited specific destinations in Europe and Middle East. Specifically, this research will analyse several antecedents and consequences of smart tourism technology experience. This research provides strategic implications for tourism and hospitality management and research.

1 Problem Definition

The introduction of new technologies has created a new type of consumer behavior, changing the way tourists search and find information about their destination. This new type of consumer can be described as multi-screener who spend most of their media time in front of a screen such as computers, smartphones or social media or computers (Gretzel, Sigala, and Christou, 2012; Molinill, Cabanillas, and Sanchez, 2017). Some figures represent the evolution in the use of new technologies by consumers. For example, in 2017 the number of Internet users was accounted for to achieve almost 3.4 billion globally (Yoo, Goo, Huang, Nam, and Woo, 2017), the quantity of mobile consumers near 4.4 billion (Stergiou and Psannis, 2017), and the quantity of smartphone consumers achieved 1.9 billion (Hiller, Savage and Waldman, 2018). In tourism, these technologies have assumed a basic role due to the importance of the use of smart technologies in tourism as well as the experience of travellers. Today, a dominant part of travel information search and reservations during the preparation of a trip is done using the Internet. The use of smartphones, internet, and different technologies give travellers rich, various, and valuable information because of simple connection and convenience. These digital technology trends have assisted travellers in personalising destination-related activities so that they feel fulfilled and satisfied not only with their travel experiences but also with their overall life experiences (Harris, 2017).

The advancements in the field of technology and the use of these technologies by consumers have led to the emergence of innovative technological smart solutions, providing greater opportunities for the application in the tourism and hospitality industry. The severe competition in the tourism industry has created the need for exploring the power of the smart technologies in facilitating the creation of more meaningful and personalised services and experiences (Neuhofer, Buhalis, and ladkin, 2015). Thus, the term smart tourism, alongside the technologies that are related to it, has turned into a typical term to depict such synchronisation, concerted and interconnection utilisation of various technologies for travel. Specifically, smart tourism is described by its online services and addressing the user’s needs of acquiring comprehensive information about tourism benefits immediately and expeditiously by transmitting, collecting and, processing tourism information (Sidler, Viola, and
Polozola, 2018). It takes tourist-service as the centre and places an accentuation on communicating with tourists.

However, previous studies have not yet examined the elements of Smart Tourism Technologies (STT) in determining satisfaction with travel experience, overall image of the destination and positive Word-of-Mouth (WOM). To fill this research gap, this study presents an integrated research model to explain the aspects of smart tourism technologies (accessibility, social influence, personalisation, perceived usefulness and enjoyment). Then, this model will analyse the effects of smart tourism technology on tourists’ service experience satisfaction, tourists’ travel experience satisfaction, overall image of the destination, and positive WOM regarding the destination experience.

2 Literature Review

Smart technologies are specific products and service which add value to tourist experiences in a concrete manner by fostering higher interaction, co-creation and personalisation levels (Neuhfer et al.,2015). Smart technology is also an ambiguous umbrella term for many advanced technologies that take connectivity to a further step including sensors, near field communication, augmented and virtual reality, and ubiquitous connectivity through Wi-Fi. Recently, the concept STT has been widely analysed in the literature, relating this concept with satisfaction aspects. In their study, Huang, Goo, Nam, and Woo (2017) investigated the influence of the significant smart tourism technology (STT) features on travel decision satisfaction. The findings of their study illustrated that STT features of information quality, interactivity, accessibility, and source credibility had a positive effect on travel decision satisfaction.

Recently, Lee, Lee, Chung, and Koo (2018) developed a research model examining tourists’ value-seeking procedures over the tourism services and travel experiences of a destination. Their model suggested that tourist happiness is evaluated by tourists’ apparent experiences, which are designed by two motivational values: destination value and smart tourism technology. Their findings showed that tourists are likely to put more value on what they perceived from their destination travel experiences than what they perceived from their experiences with STT services when they evaluate their overall happiness.

3 Conceptual Development

This research presents the integrated research model examining the impact of different aspects or antecedents of Smart Tourism Technology (STT) experience, such as accessibility, social influence, personalization, perceived usefulness and enjoyment on STT experience. Then, this study proposes the analysis of the effect of STT experience on service experience satisfaction, travel experience satisfaction, image, and positive WOM concerning the destination. (see Figure 1). As a consequence, the model tests whether or not the use of STT by tourism organisations affects tourist’ experience on the destination.
Therefore, the present study proposes the following hypotheses related to the experience with the destination:

- **H1**: Accessibility has a positive effect on perceived STT experience.
- **H2**: Social influence has a positive effect on perceived STT experience.
- **H3**: Personalization has a positive effect on perceived STT experience.
- **H4**: Perceived usefulness has a positive effect on perceived STT experience.
- **H5**: Enjoyment has a positive effect on perceived STT experience.
- **H6**: The perceived STT experience has a positive impact on service experience satisfaction.
- **H7**: The perceived STT experience has a positive impact on travel experience satisfaction.
- **H8**: The perceived STT experience has a positive impact on negative WOM.
- **H9**: The perceived STT experience has a positive impact on affective image.
- **H10**: Service experience satisfaction has a positive effect on positive WOM.
- **H11**: Travel experience satisfaction has a positive effect on positive WOM.
- **H12**: Cognitive image has a positive effect on overall image.
- **H13**: Affective image has a positive effect on overall image.
- **H14**: Overall image has a positive effect on positive WOM.

4 Proposed Methodology

Tourists who voluntarily participate in the study will complete a questionnaire in an interviewer’s presence. When necessary, the primary researcher would assist respondents. The main researcher will confine the population to tourists located in...
Europe and Middle East. The results will be summarized using descriptive statistics such as frequency distribution, mean scores, and standard deviations through the software SPSS 24.0. The Partial Least Squares Structural Equation Modelling (PLS-SEM) technique will be employed to test the reliability and validity of the measurement model, after which the structural model will be used to test the underlying hypotheses of this study.

5 Anticipated Results

The main goal of this study is to examine the elements that have an impact on STT experience and how this variable may impact on tourist’ satisfaction, image and WOM concerning a destination. More specifically, the results may explain how tourists perceive attributes of STT experience and how these attributes could be perceived as strong predictors of STT. Furthermore, both service experience and travel experience could be elements that have a strong influence on tourists’ WOM. In this study, tourists may recognise STT experiences as a part of the creation of an overall image of the destination that lead to a general perception of a destination experience and positive WOM. This study may reveal the importance of emotional assessment in determining satisfaction with the overall travel experience.

Indeed, this study also enables various practical insights into all relevant stakeholders (i.e. tourists, local residents, business holders, and destination/tourism marketers). Most importantly, this study suggests how tourists process and evaluate their tourism experience based on the STT attributes. Regarding the importance of STT-based experience, the study may suggest that accessibility, social influence, personalization, perceived usefulness and enjoyment should be improved on smart technologies used by tourism organisations of a destination so that tourists can easily find the information they need. The results provide strategic directions for tourism/destination-related parties, indicating that destination cities should implement smart tourism systems that offer a wide variety of information resource that can promptly address tourists’ specific needs.

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A study of cognitive dissonance in hotel booking context: 
The perceived affordance theory perspective

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Abstract

Most of online hotel booking websites display cues or indicators called perceived affordance, which induce consumers to spend less time and efforts for the purchase decision. However, consumers can experience cognitive dissonance in case the perceived affordance lead wrong choice. The objective of this study is to examine the relationship between the cognitive dissonance and perceived affordance in online hotel booking websites. We focus on false and explicit affordance and select six specific antecedents from panel discussion. By determining the causality between cognitive dissonance and those antecedents, this study is expected not only to explore which factor distracts the purchase decision from consumers’ perspective but to provide the practical implication to online hotel booking service providers with regard to the display of perceived affordance in their websites.

Keywords: Cognitive dissonance, Perceived affordance, False affordance, Explicit affordance, Hotel-booking website

1 Problem Definition

Tourism purchase provides no opportunity for experiencing products before making a decision (Huang & Chen, 2006). To reduce the uncertainty and risk, consumers tend to follow perceived affordance offered by online hotel booking websites, which makes them to spend less time and efforts for the purchase decision. However, if consumers’ internal belief or initial expectation conflict with performance due to perceived affordance, cognitive dissonance can arise (Pandey & Jamwal, 2015). Consequently, cognitive dissonance affects customer satisfaction and furthermore, it can influence trust and usability of online hotel booking websites (Flint \textit{et al}., 2011). Especially, as hotels use online booking platforms (e.g. Booking.com, Expedia.com) and online sales from the biggest part of their revenue (Buhalis & Law, 2008), it is paramount to prevent an occurrence of cognitive dissonance. Thus, the main purpose of this study is to examine the relationship between the probability of cognitive dissonance and perceived affordance in online hotel booking websites. To ensure the accuracy of study, we focus on false and explicit affordance among several types of perceived affordance for reasons that they are relatively obvious and common cues exposed by online hotel booking websites and are likely to affect consumers purchase decision. This study would extend the literature of tourism purchase from the consumers’ standpoint and provide the practical implication to online hotel booking websites.
2 Literature Review

2.1 Cognitive Dissonance Theory

Cognitive dissonance theory (Festinger 1957) states that consumer experiences uncomfortable feeling due to the disconfirmation of initial expectations about the product (Pandey & Jamwal, 2015). Because cognitive dissonance can influence customer satisfaction and it leads to loyalty and trust (Flint et al., 2011), a few researches on cognitive dissonance have been conducted from the perspective of consumer perception like the discussion about cognitive dissonance and service quality by O’Neil and Palmer (2004). Specifically, in a tourism context, cognitive dissonance is likely to arise when consumers purchase tourism products via online platforms as it is hard to assess the value of products (McIntosh, 1972), thereby many scholars have studied the theory in OTAs (Online travel Agencies) like the impact on cognitive dissonance and electronic Word-of-Mouth (Tao & Jin, 2017) and the application of the theory to travel purchase decision (Tanford & Montgomery, 2015). Nevertheless, antecedents mostly limited the range of researches to sustainable tourism and green-hotel such as Juvan and Dolnicar’s research (2014) or examined the relationship focusing on online review as a variable like Liang’s research (2014). Thus, this study will determine the factors which cause cognitive dissonance in online hotel booking websites from general and comprehensive scope to prevent consumers from feeling inconsistency with regard to their online hotel purchase decision.

2.2 Perceived Affordance

Perceived affordance is suggestions or clues as to how to use the properties, which results from users’ mental interpretation such as their previous knowledge and experience (Norman, 1988). The concept of perceived affordance derived from the design principles for technology (Wellman et al., 2001) and mainly discussed from the designers’ perspective. It is rarely used to understand the consumers’ perception of perceived affordance and impact on their purchase decision (Hatakka, 2016). Based on prior researches, we can sort perceived affordance into several types. Gaver (1991) categorized it as perceptible, hidden, false, and correct rejection according to the availability of information and affordances. From later studies, explicit, pattern and negative affordance are suggested by Mirsarraf et al. (2017). Most of online hotel booking websites offer these kinds of perceived affordance using visually prominent indicators and cues which induce consumers to spend less time and effort. However, if consumers notice that the perceived affordance give unclear information and lead wrong choice (false affordance) or they feel intrusive because of stimuli and they couldn’t objectively judge alternatives and made a decision unlike original intention as a result (explicit affordance), cognitive dissonance can arise. False affordance exists upon which people may mistakenly try to act. It is typically exemplified by a gap between what the users expect to get and what the users actually achieve (Hatakka, 2016). Explicit affordance is the hints given off by language or physical appearance of the object. For example, a raised button that says ‘Click me’ obviously indicates the possibility of clicking (Mirsarraf et al., 2017). Hence, this study investigates how specific antecedents of false and explicit affordance trigger cognitive dissonance in online hotel booking websites such as Booking.com or Expedia.com.
3 Conceptual Development

3.1 False affordance and cognitive dissonance

Providing comparison information allows consumers to compare hotel rates in one search and shows aggregated summary of hotel information from external sites (e.g., Trivago). It has the merit of reducing time and effort for collecting data, but more comparison information does not always mean the better, in case of disturbing the search as false affordance. According to the focus group interview from a prior research (Roman, 2007, p.137), “once you click on the link, it is impossible to purchase them, either because you just can’t find them, or if you’re lucky enough to find them, they are sold out”. This is a prime example of comparison information as false affordance of OTAs and can be applied to online hotel booking websites as well. Additionally, because consumer who considered a wider range of options are more likely to experience greater magnitudes of purchase dissonance (Menasco & Del, 1978), more hotel comparison information causes higher likelihood of cognitive dissonance by giving up other attractive offerings.

H1. If hotel comparison information needs to take a lot of time and effort, cognitive dissonance is likely to occur.

Another typical type of false affordance is an indicator implicating offer distinctiveness like “Today’s best seller” or “Special product”. Purchasing and owning distinct products tend to cause compulsive purchase decision (Kukar-Kinney et al., 2016). Especially, for ardent shoppers, shopping for unique and stylish products also has hedonic dimensions (Endo & Kincade, 2008). Accordingly, the deal’s distinctiveness enables consumer to make a decision against their internal belief or individual proposition by strongly motivating compulsive desire and enjoyment. As such, offer distinctiveness can be one of the factors increasing the probability of the rise of cognitive dissonance.

H2. Offer distinctiveness messages, which implicate that the hotel product is special, possibly induce the cognitive dissonance by stimulating consumers’ compulsive desire and enjoyment.

Visual presentation, especially for hotel purchase, plays an important role in providing hotel product information which influences consumer purchase intention (M. Kim & Lennon, 2000), whereas it is hard to tell whether the visual information is deceptive or not. For example, hotel images presented on screen may be perceived as not accurate enough to make a judgement on the hotel. Also, if hotel images are exaggerated and there is a large discrepancy between the images and the real one (e.g., the consumer finds out that hotel room is, in fact, cramped unlike the image which implicated a spacious room), consumers possibly feel cognitive dissonance.

H3. Exaggerated or deceptive hotel images are likely to induce the cognitive dissonance.

3.2 Explicit affordance and cognitive dissonance

To reduce the risk and uncertainty, therefore, consumers observe the reactions of others to avoid feeling out of place (Dittmar & Drury, 2000). Also, Chevalier and Mayzlin (2006) suggested that other internet consumers’ product recommendations had an impact on consumer purchasing behaviour at online retailer sites. In that sense, rate of room recommendation is influential in making a purchase decision in online hotel booking websites. However, consumers sometimes choose the tourism product which is even inconsistent with their original purchase intentions because the rate of room
recommendation convinces the hotel product is valuable and induce their selection. Accordingly, we assume that the exposure to this kind of persuasive messages, possibly influences to cognitive dissonance

**H4.** Emphasizing high rate of room recommendations is likely to induce the cognitive dissonance.

In general, consumers usually show herd behaviour for a risk reduction strategy by following other people’s choice (Park & Jang, 2018). Especially, the uncertainty of the online environment increases their reliance on other people’s choice, thereby sales volume positively affects a potential consumers’ decision in making an online purchase (Huang and Chen, 2006). This implicates that the number of room reservation influences in evaluating hotel products. The problem is that the number of room reservation induces consumers to imitate other people’s decision, possibly by ignoring their own information (Banerjee, 1992). Eventually, it can lead cognitive dissonance by conflicting with internal belief.

**H5.** Displaying the large number of room reservations booked by other people is likely to induce the cognitive dissonance.

Socially oriented consumers are motivated to possess luxury hotel brands in order to display their status and success to their targeted social groups (Tsai, 2005). In other words, it stimulates individuals’ intention to purchase a luxury brand as social influence. In case of online hotel booking service, when consumer who has a propensity to consume luxury brand is exposed by stimuli like “Luxury Pick”, the message influences their purchase intention even though there is no objective evidence. Therefore, if consumers’ internal belief and expectation of luxury conflict with emotional appeals for luxury, they can possibly feel cognitive dissonance.

**H6.** Presenting hotel products with emotional appeals for luxury is likely to induce the cognitive dissonance.

### 4 Proposed Methodology

This study will be conducted in three steps. Antecedents of each perceived affordance were chosen by the preliminary panel discussion which consists of five researchers in Ph.D graduate students or professors of tourism and hotel management section in advance. Subsequently, a pilot test using a virtual image of online hotel booking website, including false and explicit affordances, will perform with to assess the appropriateness of the antecedents selected by panels. After we confirm that six antecedents are quite in place as variables of the research, the survey will proceed. All participants will be assigned to the same image used in the pilot test. After exposure to the image, each participant will complete the questionnaire asking about if they experienced cognitive dissonance due to the antecedents. In order to accurate estimation of cognitive dissonance, respondents will be targeted people who used online hotel booking websites within a year.

### 5 Anticipated Results

This study is expected to examine that false and explicit affordances offered by online hotel booking websites have significant influence to cognitive dissonance after a tourism purchase. If the result showed there are correlation between perceived affordance and cognitive dissonance, it will provide practical implications for online
hotel booking websites to increase the usability by displaying proper perceived affordance.

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The Effects of Technology Readiness and Application Quality on Impulse Buying at an Online Travel Agency

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Abstract

As online travel agencies (OTAs) have launched smartphone applications, consumers can book travel products easily and even on an impulse. This study therefore verified the effect of mobile, individual and transactional characteristics on impulse buying. In addition, it identified the moderating effects of consumers’ technology readiness in these relationships. Based on the anticipated results, we propose theoretical and practical implications.

1 Problem definition

Impulsive buying is an important consumption pattern, and sellers rely on it for successful marketing (Rook, 1993). Smartphone apps have made it easy to purchase travel products on a whim. Online travel agencies (OTAs) have apps where potential tourists can search, book and purchase travel products. OTAs offer travel information and a variety of travel products to customers (Kim, Kim & Han, 2007). Even though searching, booking and paying for a product through an app is easier than doing it through a website (Zhang & Yuan, 2002), customers still have to download the app, compare the products and pay with their credit cards. A large amount of research has been done to find out how application quality and technology readiness-related variables influence customers’ intention to purchase or satisfaction. However, few studies have been done on how they affect impulse purchasing. Therefore, this study explores the way in which mobile, individual and transactional characteristics of mobile commerce affect impulse buying, and how customers’ technology readiness moderates these relationships.

2 Literature Review and Conceptual Development

2.1 Characteristics of OTA application and their customers

OTAs followed the development of the Internet and computer reservation systems in the 1990s (Buhalis & Law, 2008). Many OTAs have expanded their services from traditional travel products (e.g., accommodations, airline, car rental) to event tickets, local tours and restaurant reservations (Pratik & Bayu, 2017). In recent years, OTAs have launched smartphone apps so that consumers can easily acquire travel information and book their travel products anywhere and anytime, even during the trip.

Previous researchers have investigated the mobile environment, including online shopping, mobile banking, and education (e.g., Chung, Song & Lee, 2017; Kim, Chung, Lee & Preis, 2015; Ko, Kim & Lee, 2009; Landor, 2003; Park & Tussyadiah, 2017; Xu & Gutiérrez, 2006). To sum up the results of these studies, we divided the predictors of customers’ urge to buy impulsively into three categories: mobile characteristics (e.g., convenience and ubiquity of mobile application), customers’ individual characteristics (e.g., impulsiveness) and transactional characteristics (e.g., transaction information quality and notice of special promotion).
Advanced information systems increase consumers’ access to products and services by providing an easier purchasing process and a ubiquitous decision-making support system, which ultimately increases customers’ intention to purchase (Kacen & Lee, 2002; Lee, Chung & Byun, 2015). In other words, an impulse purchase is more likely when the purchasing process is easy and the smartphone is connected to the Internet or other devices (Jain, Sharma & Narwal, 2012; Lee et al., 2015; Yi, 2012;).

H1: Convenience has a positive impact on urge to buy impulsively.
H2: Ubiquity has a positive impact on urge to buy impulsively.

An impulse buy is a spontaneous and unplanned purchase (Chien-Huang & Chuang, 2005). Peck and Childers (2006) defined impulsiveness as “consumers’ tendency to buy spontaneously, unreflectively, immediately and kinetically” (p. 765). Meanwhile, the urge to buy impulsively is defined as “the state of desire that is experienced upon encountering an object in the environment” (Beatty & Ferrell, 1998, p. 172). It is an irrational desire and can be substituted for an intention to purchase impulsively (Chung, Song & Lee, 2017). According to Solomon (2012)’s experiential hierarchy (see Fig. 1), called as ABC paradigm (Affect→Behavior→Cognition), consumers tend to buy intangible products such as travel product based on their emotional reactions and hedonic motivations. In this vein, we can assume that consumer’s impulsiveness is a strong predictor of a person’s urge to make an impulse purchase (Parboteeah et al., 2009; Wells et al., 2011; Xiang et al., 2016).

H3: Impulsiveness has a positive impact on urge to buy impulsively.

Customers can use an OTA app to can search and book travel products even during the trip. In this circumstance, various OTAs have used some facilitators of purchase, such as pop-up alerts that the offer will expire (e.g., “30 minutes left!”) or are in limited quantity (e.g., “170 people are currently looking at hotels in Seoul”) (Chung et al., 2017). In addition, consumers can read reviews by people who have stayed in a hotel and use the reviews to decide whether or not to book a room there. These strategies can be an OTA’s transactional characteristics through mobile and as a means of adding value to products and services (Chung et al., 2017).

H4: Transaction information quality has a positive impact on urge to buy impulsively.
H5: Notice of special promotion has a positive impact on urge to buy impulsively.

2.2 Technology Readiness Index

Some people are eager to use new technologies, but others are not (Lin & Hsieh, 2007). Therefore, it is important to know the technical readiness of customers (Parasuraman, 2000). Technology Readiness Index (TRI) is a personal tendency and temperament, not an indicator of technical ability (Lin & Hsieh, 2007). Parasuraman (2000) based the four concepts of TRI on the attitudes to technology. Optimism and innovativeness are drivers of TRI, but insecurity and discomfort are inhibitors (Parasuraman, 2000).
According to Mick and Fournier (1998), even people with a sufficient understanding of and interest in technology can have concerns about it. In addition, there are many correlations between drivers and inhibitors (Parasuraman, 2000), suggesting that negative and positive aspects of technology can coexist (Lin, Shih & Sher, 2007). Therefore, we conceptualized TRI as the extent to which an OTA consumer is fully aware of both the positive and negative aspects of a new technology. TRI are second-order factors consisting of four first-order factors.

As we mentioned earlier, customers have to undergo somewhat difficult and annoying tasks such as downloading a suitable application, comparing the products and paying by putting some numbers of their credit cards. And there are still issues of security or privacy, or certainty about whether reservations have been made correctly.

H1a-5a: Technology readiness enhances the impacts of convenience (1a), ubiquity (2a), impulsiveness (3a), transaction information quality (4a) and notice of special promotion (5a) on urge to buy impulsively.

Based on the discussion, our research model is presented in Figure 2.

![Fig. 2. Research model](image)

3 Proposed Methods

The measurement items were adopted from the previous literature and revised. Measurement items for convenience were adopted from Van der Heijden (2004), for ubiquity from Lee et al. (2015), for impulsiveness from Chien-Huang and Chuang (2005), for transaction information quality from DeLone and McLean (2003), for notice of special promotion from Song et al. (2015), for technology readiness from Lin and Hsieh (2007), for transaction information quality from DeLone and McLean (2003) and Kim, Ahn and Chung (2013), and from urge to buy impulsively from Beatty and Ferrell (1998) and from Chung, Song and Lee (2017). All items of this study were measured on 7-point Likert scale ranging from strongly disagree (1) to strongly agree.
The survey was developed in English, and then translated into Korean by researchers who are proficient in both languages. A pilot test was conducted with an OTA staff to ensure face validity. We will use an online survey for data collection. To select an appropriate sample, we formulated a screening question: “Have you booked travel products through an OTA app in the past year?” We then check the validity of the measurement model by conducting confirmatory factor analysis and test the hypotheses.

4 Anticipated results

This study can address customer’s urge to buy impulsively from three perspectives: mobile, individual and transaction characteristics. Although there are few limitations, based on the results, it is expected to provide OTA with practical lens to decide marketing strategy.

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References

Exploring the role of Social Media Influencers characteristic on the Destination Image formation

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Abstract

This study will explore the impact of Social Media Influencers (SMIs) characteristic on the destination image formation. Referring to Saudi Arabia as a case study in order to find out its image from a local and international point of view. It will investigate the SMIs characteristics influence on each of the destination image components. The study will use a mixed method, quantitative and qualitative. The qualitative study will be carried first followed by the quantitative study. This is to identify the SMIs characteristics in order to support the quantitative study.

1 Problem definition

This study will take Saudi Arabia as a case study in order to understand the impact of Social Media Influencers (SMIs) on the formation of destination image that local and international tourists hold. The reason of choosing SMIs is that, one of the major challenges for DMOs is to identify a suitable influencer to be their ambassador. This study will attempt to discover the appropriate SMI by identifying their characteristic that influence the DI formation.

Destination image (DI) is a very important concept in tourism, as it influences the tourist destination selection (Baloglu and Mc Cleary, 1999; Beerli and Martin, 2004). Although destination image is very well researched (Pike, 2002), the process and sources of destination image formation were found to be the least studied area in tourism (Santana et al., 2018). This study will look at how the internet, in particular SMIs, have an impact on the DI formation, by allowing information and content to be easily distributed and having the power to shape the tourists’ attitude and opinion. The influence of SMIs on DI formation has never been studied before in the tourism literature, and this paper aims to fill this gap.

The case of Saudi Arabia is chosen because research so far has solely focused on well-established destinations, such as USA and Italy (Phillips and Jang,2010; Vanolo, 2008). Saudi Arabia can be considered as a new tourist destination, having recently introduced a new strategy, Vision 2030, which identified as one of its main objectives is to develop the tourism sector. The new strategy comes on the aftermath of a number of political crises that the country has faced in the past years (i.e. the 9/11 attacks, the Yamen war, and more recently the political conflict with Iran and Qatar). Hence, it is important to explore the image of Saudi Arabia as a tourism destination from both a local and international point of view. The objectives of this study are threefold: 1) to investigate Saudi Arabia’s image from a local and international point of view; 2) to explore the impact of SMIs characteristics’ as information source (covert induced I) on each component of the DI; and finally, to provide recommendations based on the findings to DMOs in order to identify the suitable characteristics’ of SMIs when attempting to form the DI.
2 Literature review

2.1 Social media in tourism

Xiang and Gretzel (2010) defined social media (SM) as an online application that are driving by user-generated content (UGC). According to the cited authors, SM has virous forms for example, online communities, blogs, wikis, social networks and sharing applications. Social media platforms gained a considerable popularity among individuals, attracting millions of users across the world. For example, October 2018 recorded more than 2.23 million monthly active users on Facebook, YouTube 1.900 billion, WhatsApp 1.500 billion users (Statista, 2018). These statistics clearly illustrate the prevalence of social media in our daily lives. In tourism, according to Xiang & Gretzel (2010), social media have had a major impact on the travel industry. Most travellers now are able to gain information about a specific destination, share their experience and emotions, and buy tourism products via their engagement on social media or so-called web 2.0 (ParraLópez et al., 2011). Referring to the definition, user generated content is where individuals publish a content via SM. Some individuals created a larger-based audience throughout SM platforms who share the same interest, recognized as social media influencers (SMIs). They are believed to be users who increase the influence of an information when sharing it with others. This study will be attempted to discover the information shared by SMIs and its influence on the DI components. Regarding social media studies in tourism, it is known that tourism is an Intensive information industry (Gretzel et al., 2000) therefore, tourism scholars explored the role of social media in tourism. Particularly, capturing the tourist’s information search behaviour, decision making, promoting tourism products, and finally, the appropriate methods to interact with tourists (Zeng & Gerritsen, 2014). Researchers in tourism have concentrated on the role of social media from the consumer perspective or the supplier perspective. Considering the consumer perspective, researchers explored the role of social media in the pre-trip phase (i.e Burgess et al., 2011; Xiang & Gretzel, 2010), during the trip phase (i.e Tussyadiah et al., 2011; Sparks and Browning, 2011) and lastly post-trip phase (i.e. Cox et al., 2009; Huang et al., 2010). From the supplier perspective, researchers explored the role of social media applications for promotion (i.e Dippeleleriter et al., 2008; Chan & Guillet, 2010) for product distribution (i.e. Schmallegger and Carson, 2008; Chan et al., 2011), for communication (i.e Kim and Hardin, 2010; Pantelidis, 2010), and lastly for management (i.e. Akehurst, 2009; Isacsson and Gretzel, 2011) (cited in Leung et al., 2013).

2.2 Social media influencers:

Social media influencers (SMIs) are a new type of independent third-party endorsers who are active on their own social media platforms and they have the power to shape their fans attitude (Freberg, et al., 2011). They are individuals who established an account on social media platforms and have a large access to their audience. Forbes (2016) argues that SMIs can influence their fans behavior, opinions, and actions in terms of their purchase decisions.

In the Marketing literature, major studies confirmed that using influential spokesperson can capture customer’s attention to the product, deliver the image of the product (Morgan and Pritchard, 2012; Kamins, 1990), and transfer the right message in a limited time and space (Agrawal and Kamakura, 1995). In tourism, DMOs acknowledged that employing influential spokesperson is essential. For example, in 2010, Australia employed the famous US celebrity, Oprah Winfrey, to promote a campaign targeting
Considering research on SMIs in tourism, Xu (Rinka) and Partt (2018) study attempted to discover the SMIs “internet celebrities” influence as endorses on outbound Chinese generation Y tourists. Another example is Less’s et al., (2015) paper, where they studied the influence of information source on DI, using the Korean pop star as autonomous agent. However, up to date there are no studies explored SMIs as a covert induced I agent. This study will be attempted to investigate the relationship between SMIs characteristic and DI components.

Credibility of SMIs is known as an important factor that can influence the receivers in order develop the DI. It is confirmed that an opinion leader who has a credible image is more trusted than others (Erdogan, 1999). There are many factors to measure the impact of influential people. However, Ohanian’s (1990) model (credibility of celebrities) which is based on previous existing literature is found to be widely accepted in terms of measuring the perceived image of the celebrities (Van der Veen and song, 2010). The three factors identified by Ohanian (1990) are: trustworthiness, expertise, and attractiveness. Trustworthiness is defined as the consumers felling towards the spokesperson in terms of his/her honesty, integrity, and believability (Erdogan, 1999). Expertise refers to the extent to which the spokesperson is perceived in terms of his or her skill and advanced level of knowledge. Finally, Ohanian (1990) defined attractiveness as the perceived image of the spokesperson regarding his/her physical appearance. However, an online influential characteristic is yet to be explored. Therefore, this study will carry a qualitative study in order to identify the SMIs characteristics and explore each factor identified on the DI formation.

2.3 Destination image definition and dimensions

The significance of destination image (DI) is widely acknowledged, as it influences the tourists’ perception, behaviour, and destination choice (Echtner and Ritchie 1991; Chon 1992). Destination image however remains a vague concept, Gallarza et al., (2002, p.59) stated, “There are almost as many definitions of image as scholars devoted to its conceptualization”. In spite of the variation on defining DI, the most approved definition is proposed by Crompton’s (1979, p.18) where she defines DI as “the sum of beliefs, ideas, and impressions that a person has of a destination.”

There is a common agreement among researchers that image is a combination of two main dimensions: cognitive and affective image (Gartner, 1994; Baloglu and Mc Cleary, 1999). The cognitive image represents the individual’s knowledge or belief regarding the attributes provided by a destination. The affective image refers to the tourist’s feelings and emotions towards the destination. In addition to the two dimensions, there is a third dimension named conative image (Gartner, 1994). The conative is a combination of cognitive and affective image and it is considered as an action component. For example, it can be illustrated as tourist’s intention to visit. The combination of the two dimensions leads to the overall image which provides a negative or a positive image evaluation to the destination by tourists (San Martin and Rodriguez del Bosque, 2008). As most research in tourism agreed on the relationship between the three dimensions, this research will implement them to measure the SMIs influence on them.
2.4 Destination image between different groups

It is confirmed by researchers that locals have a significant role on the DI formation (Papadimitriou et al., 2015). They can be ambassadors to their destination, they could recommend the attributes of their place, and they could act as a recommender to their friends and family (Simpson and Siguaw, 2008). Hence, it is critical to explore the destination image that locals hold of their own place in order to engage them in forming the DI.

Since the importance of locals DI is acknowledged, DI formation studies are lacking in terms of comparing different groups DI (Garrod et al., 2012). Few studies have touched on this matter, for example a study by Simpson and Siguaw (2008) studied the perceptions of locals and compared it with tourists, however they did not look at the DI held by the two groups. Phillips and Jang (2010) attempted to explore DI of two groups, visitors and non-visitors. Other studies only attempted to explore either the DI of one or two groups such as (Baloglu, 2000; Choo et al., 2011). This study will explore the DI of Saudi Arabia from locally and internationally.

2.5 Image formation agents

Image formation agents (IFAs), are found to be influential in terms of generating perceptions on a destination by individuals (Gartner, 1994)). They are based on information cues provided by IFAs that tourists depend on in order to mentally construct an image of a destination (Gartner, 1994; Alhemoud and Armstrong, 1996). The type of agents as identified by Gartner (1994) are Organic, autonomous, and Induced. This paper will focus on the sub set of Induced IFAs which is named covert induced I. It refers to employing a recognizable spokesperson by DMOs in order to develop the DI. The use of a well-known person, for example celebrities, can overcome the credibility issue that is found in the other agents. DMOs rely on them as they have the ability to attract consumers by using their attractiveness and likability. They are affective in terms of increasing the message recall and distinguishing the product that they are presenting from other competitors. SMIs will be considered as a covert induced I to explore their role on forming the DI.

Academics in tourism noticed the significance of information source with regard to their influence on DI formation (Baloglu and Mc Cleary, 1999; Santana et al., 2018). Baloglu and Mc Cleary (1999) confirmed that different information source has a significant influence on the DI formation. Others found that the type of information source only has an influence on the cognitive image (i.e. Baloglu and Mc Cleary, 1999; Baloglu and Martin, 2004; Santana et al., 2018.). However, Chagas et al., (2013) found that there is no direct influence of the information source on DI formation.

3 Methodology

This study will explore the impact of SMIs characteristics on the DI formation process. It will assume that the characteristics of SMIs that has an impact on the DI formation are trustworthiness, attractiveness, and expertise (derived Ohanian’s (1990) model). However, the research will use a mixed method in order identify the SMIs characteristics. It will take the two-step research design, (sequential exploratory research design), that is a qualitative study followed by a quantitative study (Saunders et al., 2016). According to the cited author, this is to support the quantitative study with the finding of the qualitative study. This method will allow the researcher to identify
unique characteristics of SMIs that could influence their followers, which in turn have an influence on the DI formation process.

In the first stage, social media influencers (international and local SMIs) in different platforms will be identified, based on the number of followers they have (Forbes, 2016). The reason of not choosing a specific platform is that some social media are more popular than others in different countries. For example, the most popular SM platform in Saudi Arabia is WhatsApp 73%, then YouTube 71%. Followed by Facebook and Instagram. For UK, YouTube is the most used 77%, followed by Facebook 76%, then FB messenger, and WhatsApp (Statista, 2018). Based on the search, they will be considered as the population of the qualitative study. Semi-structured interviews will aim to identify their characteristics that could have an influence on their followers, consequently the DI formation process. After analysing the results, the factors identified from the interviews will be add to the quantitative study.

The quantitative method will be prepared using online and face-to-face questionnaires with locals and international tourists. It will contain three parts: Destination image, SMIs characteristics which is derived from the qualitative study, and respondents’ demographic profile. For DI, each dimension will be assessed with a set of items. With regard the SMIs influence, the characteristics which were identified from the qualitative study will be added to assess their influence on the DI formation. The last section will consist information about the demographic information including: gender, education, age, income, and marital statues.

4 **Anticipated Results**

This research will aim to integrate the DI formation model with the credibility model. In addition, conducting the qualitative study could identify new factors (SMIs characteristics) that could have an influence on the DI formation. The results can provide valuable insight to DMOs, especially when choosing SMIs as ambassador.

**References**


Information Sources and Consumer Behavior In Travel: An Investigation of Destination Activity Choice in A Multi-Channel Digital Age

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Abstract

How do consumers choose activities at a destination and how do digital sources and other factors influence the decision making process? Studies in the ICT field have demonstrated the importance of developing new digital sources such as online platforms and mobile technology for destination activity choice. The decision making process for tourists is highly complex. The goal of this research is to synthesize the work from the disciplines of ICT, digital marketing and tourism by empirically investigating destination activity choice-behavior in Wales. The first phase of the research is exploratory: in-depth semi structured interviews with self-catering guests on holiday in Wales in 2018. The second phase of the research will narrow the focus of the study with an online survey. The research will provide insights into consumer decision-making processes as influenced by digital technologies and other sources. The managerial outputs of the research will report the segmentation and preferences of tourists in information source selection; could recommend improvements to information sources; assist practitioners with the marketing of activities and attractions in Wales and offer strategic direction to the DMO.

1 Introduction & Problem Definition

In Wales, there is a diverse range of activities and attractions. There is a growing activities market, particularly in the adventure and outdoor sector in North Wales. The research will examine why tourists engage in their chosen activities. It will also investigate how visitors plan for their holiday and how decisions are made whilst on holiday. There are multiple online and offline marketing channels and information sources available to visitors, though they are largely disconnected. These channels and sources are operated by the national and regional DMO’s as well as commercial operations. Technology is increasingly being used by visitors to plan holidays and as a tool whilst on holiday. Indeed mobile use has grown hugely and offers service providers and destinations increasing opportunities to engage with visitors in new ways. However even in the advent of new technology, traditional forms of information such as tourist information centres, printed resources and word of mouth are still in existence and arguably still well used by the visitor. This research project will determine the usefulness of the information sources available and make recommendations on how they can be improved or changed to meet the needs of the visitor.
Sub Questions:

- How useful to visitors are the various offline and online information sources?
- What digital information and booking behaviour do visitors use in relation to the destination?
- What are the stages in the booking behaviour and how does the need for information change in the process?
- How do consumers choose activities at a destination?
- What are the needs of different segments such as groups or individuals?
- What is the need for mobile location based services by visitors?
- How are these activities most effectively marketed?
- Does discounting have any impact on the purchase cycle?
- What type of packages would lend themselves to discounting? Such as adventure, family etc
- Would businesses “buy into” and use a digital app as a channel to promote their activities
- Would a digital app for activities increase visitors into an area?

2 Literature Review

The literature identifies that a combination of information sources are used by tourists in the selection of destinations (Fodness and Murray, 1998). However in the field of activity selection within a destination there is a lack of both theoretical and empirical research. The research project will be the first to empirically explore opportunities for digital and mobile location based service for the visitors to Wales. The research further synthesises the work from the different disciplines of ICT, digital marketing and tourism. A case study applied to Praiano, a town on the Amalfi Coast by Colace et al (2015) developed and tested a mobile digital application based on research in the ICT sector but have failed to consider the tourist decision making process. Indeed it has been identified in the literature that there is need for a new theory on the decision making process of tourists as it is highly individualistic (Smallman, and Moore 2010), and does not lend itself well to usual and more predictable general theories. This research will contribute to the development of critical theories that are complex, defamiliarizing and rich in paradox (DiMaggio, 1995). However it has been proposed that “theorizing tourist behavior” is a challenging task because tourists “show thousands of facets in their choices and activities” (Decrop, (2010) cited in McCabe p.262).

The impact of the research could be beneficial to the tourism industry. Indeed understanding consumer behaviour is fundamental for the success of leisure and tourism companies in order to market to customers effectively (Decrop, (2010) cited in McCabe p.251). An investigation of the decision making cycle of tourists in relation to destination, activity selection that pinpoints those information sources could determine salient market segmentation for the industry. The project will provide significant insights into consumer decision-making using online technologies and potentially develop new business models (recognised by the UNWTO in 2016) that will benefit Wales. Furthermore it could contribute to the academic literature that is lacking in this regard and contribute to new theory.
The existing literature on information sources and decision-making in tourism is limited to the general tourism field and focuses mainly on destination choice as opposed to activities. Electronic word of mouth is increasingly influential and that the internet is used by all generations of American users. However generation Y is much more active and engaged in travel planning: use of blogs, social media, video content, reserve online and use online travel agents more (Xiang et al 2015). Further to this, other studies have found that online usage is not only preferred by Generation Y but also repeat visitors to a destination. Grønnflaten, Ø (2009) found that first time visitors preferred face to face interactions when planning a trip whereas returning visitors booked online. Face to face usage of travel agents and printed materials are also preferred by some tourists in order to avoid risk (Alvarez and Asugman 2005). Conversely more adventurous tourists are more likely to go to friends and family for information (Alvarez and Asugman 2005). Age and demographics have also been used to segment tourists – retirees are more likely more likely to source information from family and friends. Higher income and families with children are more likely to use external sources such as tourist information centres and state travel guides (Fodness and Murray 1999). Buhalis and Hung (2018) in a conceptual paper explore smart hospitality the needs of hotels guests for “ICT applications for daily itinerary planning, information search, and for locating nearby activities”.

There has been research into the planning stages of the tourist. Murphy and Chen (2016) ascertained that in the planning process the first digital stage is to use search engines to locate information, then to check supplier and online travel agents. Litvin and Hoffman (2012) found that social media and review sites such as Facebook and Trip advisor are used mostly at the post purchase stage. Choi, Lehto and Oleary (2007) have also investigated the pre-trip, on-site destination and post trip information needs. They investigate the changing needs of the tourist through the holiday experience. Further reading in this domain is required for the full literature review.

It is suggested by Decrop (2010) cited in McCabe p.252 that there are five key theoretical approaches to tourist decision-making and behaviors: “Micro economic approach, the motivational perspective, the behaviourist paradigm, the cognitivist approach and the postmodern perspective”. The micro economic approach suggests that budget and price are the driving forces of decision-making. The motivational perspective relate to psychoanalytic theories developed by Freud and Jung. Behaviourist theory assumes that consumers can be conditioned to react in certain ways. The cognitivist approach argues that perception; information processing and judgment of risk are central to the process. Postmodern theory explores new dimensions such as emotions, dreams, and the symbolic dimension of consumerism. There is a wealth of work on consumer behavior and a full review of it will be required for the literature review.

Jones and Chen (2011) note that to date “the focus of attention has been on determining ‘choice attributes’, that is, the factors that affect choice, without any research into the actual selection process itself” for product selection at destinations. To remedy this, the study will interrogate consumer choice selection in the purchase cycle and its relation to location based services to provide a greater
understanding for developers of digital platforms. As such it will provide an original empirically based study of significance to both academia and industry.

3 Conceptual development

3.1 Attraction & Activity Decision Making Conceptual Model

Figure 1, depicts the conceptual model as developed from the first phase of the research.

![Figure 1](image)

Proposed Methodology

The research project will have an inductive and an explanatory approach. A deductive approach is not considered appropriate in this study because there is insufficient empirical data available on activity selection and information sources to test a priori hypotheses. The approach of the dissertation will impact on the epistemological and ontological foundations of the research. It is a cross-disciplinary research project, and as such will require research methods appropriate to the investigation of digital and other information sources and consumer behavior. Firstly semi-structured interviews will be carried out, the purpose of which is to elicit themes that can be further measured quantitatively. The sample will consist of guests staying at self-catering accommodation in Aberystwyth, Mid Wales. The purpose of the interviews will be to investigate the information channels that promote the activity and to profile visitor types. Interviews will be recorded, transcribed and Thematic analysis applied to code, sort and analyse the data. Following the discovery of appropriate themes an online
survey will be designed for visitors from across Wales will be contacted. It is
anticipated that a large sample size both in number and cross-section of visitors
will be surveyed. The survey will investigate consumer behavior, and will seek to
segment visitor types and discover information sources used, traveler
characteristics, and influencing factors that determine behaviour. It is likely that
the survey will be designed with factor analysis in mind in order to segment the
visitors. A survey will be designed for owners or managers of visitor activities
and attractions in Wales. A triangulation approach could be appropriate.

4 Results

Group and family needs were illustrated by examples of considerations made for
erly parents that are not as mobile as younger members and could not
participate in all activities. There were examples of parents giving teenagers
some freedom (to stay in bed/spend time on mobile phones) in return for joining
in with key family activities. Groups often did activities together because of
shared interests, such as being “foodies” and eating at local places, shopping or
visiting castles.

Friendship and family closeness was a topic that came up often when the
respondents were asked why they chose particular activities. They said that these
activities allowed them to be closer to each other, it was about spending quality
time together.

Some participants, in relation to the reasons why some activities were more
desirable, discussed authenticity. They were perceived to be more “Welsh” or
“local”. Indeed there was a desire to feel “at home” whilst on holiday, to feel part
of the town. Sometimes spontaneity in attending local events added to this
dimension.

Budget was discussed and for some guests there was no question of cost, it being
more important to have a good experience. For others budget was a constraint and
some activities were deemed too expensive. An example of this is the Vale of
Rheidol Railway, a popular steam railway in Aberystwyth that traverses to Devils
Bridge. In high season the cost per return ticket for an adult is £22 and child is
£11. Many of the guests interviewed had either been on the steam railway or
were considering it and it was interesting as budget came up a few times here.

The matter of information sources was interesting. Guests typically fell into the
two types, either pre-planning in great detail, usually online and sources from
family and friends, or not planning too much and relying on information available
at the destination. Most if not all guests used online sources of information but to
different extents and memory recall of specific web sites (other than google and
searching for Aberystwyth) was generally poor. Mobile device use for
information searching was generally high or active amongst all guests. In
particular use of google maps for finding places, posting on social media and
checking prices or opening times of restaurants/attractions. Although not all
members of the group had smart phones or access to free reliable wifi outside of
their accommodation. The perceived usefulness and trust of information types
also varied, some respondents were highly critical of review sites such as
Tripadvisor since reviews were not reliable. Some respondents preferred to speak
to local people and get advice on the best places to go. Familiarity with the destination also affected the amount of information search required, as the more familiar the guests were with the destination the less research they did.

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Abstract
The research proposal reflects on Phase 3 of a three phased PhD research project. It aims to investigate the functionalities of the next generation digital collaborative platforms for DMOs from the perspective of both businesses and visitors, allowing a more comprehensive understanding of the next generation of digital platforms. The research is conducted with two industry partners; Surrey’s regional DMO and a bespoke digital platform developer. A digital platform will be developed and tested by business representatives and visitors. An eye tracking tool and an interview will be part of the methods to gain feedback on the proposed functionalities of the digital platform.

1 Problem Definition
Past literature focuses on the travellers and consumers’ motivation and behaviour side in the tourism industry (Gkritzali, 2017; Rahman, Crouch, & Laing, 2018; Tussyadiah & Pesonen, 2016). Research have also considered the collaborative environment of businesses and its advantages (Túnez López, Altamirano, & Valarezo, 2016). However, there is a lack of in-depth literature with evidence, as mostly discuss upon conceptual frameworks. The research will provide empirical data on consumer behaviour and next generation platforms for a Destination Management Organisation (DMO). Furthermore, contribute to the theoretical framework for the next generation platforms for regional DMOs. This proposal is part of three phased research process and for the purpose of ENTER2019 PhD workshop, will be focusing on Phase 3. The research phases will be further explained in the methods section. The study will be one of its kinds by integrating and developing an all-inclusive digital platform of a DMO website which connects local businesses/organisations and consumers directly while achieving a sustainable collaborative framework between the businesses/organisations. The overall research aim will forecast future trends of next generation digital platforms for DMOs and seeks to impact a behavioural change in the way DMOs enhance existing digital platforms and influence consumers’ behaviour in navigating through technology. Meanwhile, Phase 3 aims to gain user insights on the functionalities of the developed digital platform i.e feedback of the newly enhanced platform.

2 Literature review and Conceptual Framework
DMOs have long been established by countries who take prioritisation in taking advantage of the country’s blooming tourism industry. Literature suggests two main interpretations of the letter “M” within the DMO name: either “marketing” or “management” (Pike & Page, 2014). Over the years, DMOs have evolved by taking a more comprehensive and complex approach in tourism management, to which this research stands upon (Borzyskowski, 2015; Volgger & Pechlaner, 2014). As emphasised by Jørgensen (2017), DMOs need to collaborate with local stakeholders to succeed. Hence, this research accepts the integral role of DMOs as managers and stimulators of collaboration and destination growth. Albeit the extensive literature on digitalization and collaboration, research integrating both areas maintains in its
embryonic stage. Hence, this research seeks fill the research gap by synergising the elements of collaboration and digitalisation from the perspective of a DMO.

After reviewing the essential literature underpinning the research, a conceptual framework to investigate the functionalities and elements of a next generation digital collaborative platform has been proposed (Fig. 1). The conceptual framework reflects upon the phased methods that will be later discussed within the paper. The framework first starts off from the initial phase of a collaborative platform development by involving the businesses and consumers. Understanding the needs of businesses and consumers facilitates towards establishing the roles of a DMO. These roles can be categorised as a marketing role and a management role (Pike & Page, 2014). Within the management role, DMOs need to consider the needs of their stakeholders, hence, the importance of applying stakeholder theory. Other roles related to stakeholders would include being a mediator (Buhalis, 2000), gatekeeper (Gartrell, 1991), coordinator (Beritelli, Buffa, & Martini, 2015) and provider of public representation (Morrison, Bruen, & Anderson, 1998). Additionally DMOs must function as networking catalyst (Bornhorst, Brent Ritchie, & Sheehan, 2010).

Various literature critically delves into the realm of digitalisation, focusing on its advantages and importance for organisational process. For instance, DMOs are required to provide facility or assist in developing products, to which the current situation relates to the importance of technological changes. Key characteristics in technological integration include risk management, an e-ticketing system, e-collaboration and ensuring the awareness and adoption of such technological changes (Buhalis & Licata, 2002). It is crucial to understand the ways in which consumers behave online and search for information when developing the collaboration platform (Choi, Lehto, & Oleary, 2007).

The second phase of the conceptual framework looks into the trial runs of the platform to receive feedback and improve on experience design and choice architecture (Tussyadiah, 2014; Weinmann, Schneider, & Brocke, 2016). By including these factors, it is proposed that the elements of next generation platforms will be identified as the final output. The literature suggests that feedback and subsequent improvements of experiences will ultimately provide conducive environment through a collaboration platform that can function as an economic driver, community builder while ensuring sustainability (Buhalis, 2000).
Fig. 1: Conceptual framework to investigate the functionalities and elements of next generation digital collaborative platform.
3 Proposed Methods

The research is conducted in collaboration with Visit Surrey, a regional DMO and Minted Box, a bespoke platform developer. As illustrated in Fig. 2, Phase 1 aims to explore the current scenario in which key tourism stakeholders face in this digital age. The challenges and opportunities to the use of digital platforms and DMO collaboration. Phase 2 is the development of the proposed digital platform. The platform development is supported with the data themes that emerged from Phase 1. Finally, Phase 3 will test the digital platform with the main aim of receiving real time and verbal feedback on the incorporate functionalities derived from Phase 1. Participants will be key stakeholders and eye tracking will be used during this stage. Follow-up interviews will then be conducted to clarify information or to inquire additional matters during empirical material analysis and therefore, provide feedback. 30 participants (15 business representatives and 15 visitors), purposively sampled from the same sample of Phase 1’s participants will be invited to test the developed platform. The number of respondents is deemed adequate as they greater than that suggested by Hwang and Salvendy (2010) who reported that an optimal size for studying website usability would be ‘10±2’. The participants will be invited to the university’s digital lab and test the sites with eye-tracking equipment to analyse the participant’s physical and behavioural characteristics. Using eye-tracking will be a useful tool to understand a user’s focusing processes while using the platform (Katsanos, Tselios, & Avouris, 2010). The form of research is utilised to give an automated response and will enable a more comprehensive understanding of a participant’s emotional reaction towards the digital platform. Therefore, allowing further development and improvement of the digital platform to enhance consumer experience and boost business competitiveness. Doing so would reinforce the theoretical and practical understanding of the effectiveness of the digital platform. The research Phases 1 and 2 will be repeated in another round if needed. The three phases allow the researcher to have a comprehensive understanding on digital collaboration and user needs on next generation digital platforms for destinations.
Fig. 2. Method to investigate the functionalities of next generation DMO digital platform

4 Expected results

The research is in response to Phase 3 of the research. Where Phase 1 has been conducted, preliminary results for Phase 1 has identified several key characteristics and operational capabilities of next generation digital platforms for supporting new functions of DMOs. These includes the facilitation of collaboration between local businesses for added value, opportunities for networking to reach wider audiences, knowledge sharing, and personalised product development which incorporates the needs of destination businesses and visitors. As an exploratory research, Phase 3 will discover whether the main functionalities of the next generation platform are desirable.

References


Perceived Self-efficacy in Consumer Engagement with Online Travel Reviews: A Dual-route Persuasive Process

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Abstract

Despite the significance of online travel reviews in consumer engagement, cognitive information overload resulting from the vast and rapidly-updated posts may reduce consumers’ self-confidence in their ability to process online travel reviews. To better interpret the role of self-efficacy in transferring the cognitive mechanism of information engagement, this study suggests a dual-route persuasive process of consumer engagement with online travel reviews based on the information adoption model. Argument quality and source credibility of online travel reviews are set as the dual routes to predict users’ perceived self-efficacy and perceived information usefulness, which in turn promote consumers’ adoption intention and generation intention for online travel reviews.

1 Problem Definition

Social media technology provides a golden opportunity for travel brands to engage with consumers through two-way interactions beyond the purchase transaction (Thao et al., 2017). Such setting dramatically improves the significance of online travel reviews (OTRs) in consumer engagement, because it is becoming the most intriguing information sources. Despite the rapidly growing research on the application of consumer engagement in interpreting travellers’ information processing (Zhang et al., 2018), study in this field is still in its nascent stage. Moreover, most of measurement scales of consumer engagement have failed to address engagement with content or information per se, but have documented the engagement with a brand or brand community (Schivinski et al., 2016). Therefore, this study tends to follow the calls for better understanding on what cognitive processes shape consumer engagement with online travel reviews.

In the research of travel information processing, information usefulness, stemming from users' utilitarian motivation, has been identified as the most predictive factor in evoking consumers to engage in using OTRs. However, the vast and rapidly-updated OTRs, even including the fake information, produce multiple tasks for users to assess the useful content. Such cognitive information overload increases their stress and reduces their self-confidence to make further coping efforts in the information engagement process (Samson & Kostyszyn, 2015). As such, what factors are effective in leading to self-confidence and how the generated self-efficacy motivates consumer engagement with OTRs become core issues to be addressed.

Considering the literature gaps, based on the information adoption model, this study attempts to investigate a dual-route persuasive process of consumer engagement with OTRs. It integrates the role of users’ perceived self-efficacy in bridging the associations of persuasive messages (argument quality, source credibility), perceived information usefulness, and behavioural engagement intention.
2 Literature Review

2.1 Consumer engagement

As a behavioural response, consumer engagement (CE) is defined as a consumer’s behavioural manifestations toward a brand or firm, which result from motivational drivers and go beyond purchase-related transactions (van Doorn et al., 2010). The modes of CE are routes to persuasion (Phillips & McQuarrie, 2010). In this study, CE can be viewed as a persuasion process of users’ active participation in OTRs, indicated by their behavioural engagement intention (Zhang et al., 2018). Along with such active participation, behavioural engagement captures not only information adoption but also information generation. In sum, this study believes that CE can be well constructed by persuasion communication theories.

2.2 Information adoption model

Sussman and Siegal (2003) proposed the information adoption model (IAM), which extended the elaboration likelihood model (ELM) (Petty & Cacioppo, 1986) by integrating the impact of perceived information usefulness from the technology acceptance model (TAM). IAM is a dual-route persuasion theory that draws upon how an individual’s attitude changes in processing information. It postulates that an individual perceives persuasive messages as useful through a central route determined by argument quality embedded in the information and a peripheral route determined by source credibility. The resulting perception of information usefulness will be a direct predictor of information adoption.

The IAM leads the scope of information processing to the direction of information adoption and has been viewed as one of the most feasible persuasive communication theories. Although a wide range of previous studies has confirmed its applicability in predicting the travel information processing (Chung et al., 2015), more empirical studies are needed to pay more attention to both “adoption” side and “generation” side of information use. This study tries to make effort to extend the outcome of the IAM into behavioural engagement intention, arguing that it will contribute more interpretation of the cognitive process of OTRs.

2.3 Self-efficacy

Self-efficacy reflects “an individual’s self-confidence in his or her ability to perform a behaviour” (Taylor & Todd, 1995, p. 150). Self-confidence will be produced by four forms of influence sources: an individual’s mastery experiences in easy successes to reach quick results, observing successes of others similar to oneself, social persuasion of positive encouragement from others, and an individual’s positive emotional states (Bandura, 1994). As such, efficacy expectations generated from the self-confidence will transfer the purposeful information processing for executing the behaviour.

In travel research domain, despite the powerful effects of self-efficacy on task performance, its role is still unclear regarding how consumers feel, think, and process OTRs. To trace reasons of that lack of clarity, perceived self-efficacy serves as the foundation of human agency in the scope of social cognitive theory (Bandura & Adams, 1977); it is therefore considered a uniformly accurate predictor of task performance, regardless of where the changes in self-efficacy are produced (Bandura et al., 1977). That is, the information per se is immaterial, whereas whether it works for task performance matters significantly. However, external information concerned with
behaviour-relevant beliefs is the core component in attitude-behaviour theories. Furthermore, travel information processing is attributed by high-perceived risk because travel products are intangible and information-intensive. Therefore, as crucial influence sources, the effects of OTRs on users’ self-efficacy cannot be ignored when exploring the cognitive mechanism of consumer engagement with OTRs. As such, this study focuses on the role of users’ perceived self-efficacy in processing the OTRs.

Following the previous discussion, perceived self-efficacy in this study refers to the extent to which users perceive that they are confident in their ability and skills to process and evaluate the OTRs. It will be measured by users’ self-confidence in searching and evaluating OTRs, distinguishing credible sources, and navigating unexpected problems when using OTRs (Yoo et al., 2017).

3 Conceptual Development

A research model is shown in Figure 1. The IAM is extended by shifting its outcome to behavioural engagement intention with online travel reviews. Besides perceived information usefulness, users’ perceived self-efficacy is set as another important factor to transfer the information cognitive processing.

3.1 Role of perceived information usefulness

Following the dual-route postulate in the IAM, information will be perceived as strong in argument quality when it maintains a high-quality and cogent argument, which evokes users to hold positive beliefs regarding its usefulness. On the other hand, information will be assessed as helpful if it is generated by sources who are experienced and trustworthy. A large body of empirical studies has verified the efficiency of the two routes in helping consumers evaluate the usefulness of use-generated reviews (e.g., Chung et al., 2015). The following hypothesis is assumed:

H1 (a) Argument quality and (b) source credibility of online reviews have positive impact on perceived usefulness of online reviews.

Perceived information usefulness has proved to be a crucial reason for consumers to actively engage in travel-related communication. Casalò et al. (2010) indicated that when consumers perceive that using an online travel community is helpful for them to plan and organize their travels, they are more likely to actively participate in the
community, using and recommending the brand and its products. Filieri (2015) suggested that travel reviews given on TripAdvisor improve consumers’ beliefs that the platform is beneficial for consumers, prompting them to adopt the recommendations and provide positive reviews. Therefore, this study proposes that:

H2 Perceived usefulness of online reviews has positive impact on (a) users’ adoption intention and (b) generation intention for online reviews.

3.2 Role of perceived self-efficacy

According to self-efficacy theory, an efficacy expectation, as the conviction, mediates an individual’s cognitive process to execute the behaviour (Bandura et al., 1977). People’s convictions will increase along with their confidence in their ability to manage situations, but their convictions will decrease when they perceive that the situations exceed their coping abilities (Bandura & Adams, 1977). Therefore, the sources generating more confidence will improve an individual’s desire to behave (Bandura, 1994). In the same line, online reviews can be a source of persuasion that enables recipients to learn other users’ successful travel experiences and comprehensive reviews of travel products (Filieri, 2015). As a result, recipients are likely to become confident in their success to perform task because persuasive online reviews from others reduce their fear and uncertainty regarding how to handle the situations (Quintal et al., 2010). Considering that travel products are characterized by experience and information intensiveness, learning travel-related reviews from others is believed to bring much higher levels of perceived self-efficacy than alternative products. Accordingly, this study assumes that:

H3 (a) Argument quality and (b) source credibility of online reviews have positive impact on users’ perceived self-efficacy.

A consumer’s belief in his or her own ability to use social media techniques and to evaluate online reviews, no doubt, will promote the perception of information usefulness. Extensive research on perceived self-efficacy supported its important role in predicting perceived ease of use and perceived information usefulness in the context of technology acceptance (McFarland & Hamilton, 2006). Like beliefs in one’s confidence, previous studies also found that self-efficacy can create consumer trust in online shopping (Zhou et al., 2016). Therefore, this study reproduces these findings into the travel information domain and raises that:

H4 Users’ perceived self-efficacy has positive impact on perceived usefulness of online reviews.

In the tourism research domain, numerous previous studies have attested to the positive and powerful effects of perceived self-efficacy or perceived behavioural control on consumers’ decision making. These actions include but are not limited to using and reusing travel support techniques (e.g., mobile apps) (Fong et al., 2017; Yoo et al., 2017); participating in and contributing to online travel communities (Casaló et al., 2010; Wang & Fesenmaier, 2004). Accordingly, perceived self-efficacy is considered to be vital and effective to construct consumers’ behavioural engagement with online travel reviews. Hence, the following hypothesis is proposed:

H5 Users’ perceived self-efficacy has positive impact on (a) their adoption intention and (b) generation intention for online reviews.
4 Proposed Methodology

A web-based survey will be conducted in Mainland China. Based on slightly modified instruments from previous studies, measurement will be developed by a multi-item approach. Content of the questionnaire will be confirmed through a back-translation procedure between English and Chinese. A pre-test for 50 students at a university in Southern China is planned to test the good-of-fit of the measurement. After the formal data collection, the valid samples will be screened from the target respondents who have had used OTRs posted on the online travel agencies (OTAs) and shared their travel experiences online in the previous one year before the survey is conducted. Subsequently, the research model will be estimated through the sequential procedures in structural equation modelling (SEM). Finally, to inspire more understanding on the role of users’ confidence in their ability to process the OTRs, post-hoc analysis will be employed to examine the potential indirect impact of persuasive messages on perceived information usefulness through users’ perceived self-efficacy.

5 Theoretical and Practical Implications

Focusing on the role of users’ perceived self-efficacy in predicting their engagement with online travel reviews, this study is expected to contribute several theoretical and practical implications. The most significant contribution is to advance the IAM from adoption behaviour-focus to the scope of consumer engagement. The anticipated findings are hoped to suggest that the dual-route approach can not only elaborate on users’ adoption intention for OTRs, but also on their generation intention for OTRs. In this line, this study can enrich the knowledge of dual-route persuasion theory, inspiring more casual relationships based on its postulates. Moreover, this study tries to contribute to exploring the antecedents of consumer engagement with OTRs from the perspective of self-confidence. Based on this effort, beyond consumers’ utilitarian motivation (perceived information usefulness), it hopes to inspire more research interests in the impact of users’ self-efficacy or other social influence factors on consumer engagement with travel information per se.

In practice, this study is expected to advance the knowledge of travel brands and tourism marketers in social media marketing, inspiring more effort in addressing the question: What are the best ways to engage my audience with travel-related social media? More importantly, learning how to increase users’ self-confidence in processing OTRs become indispensable for travel brands to create a great space of online community. To do so, travel brands will be beneficial from active participation in the consumer interaction to maintain the quality and credibility of OTRs. The generated self-confidence in users’ ability to assess the usefulness of OTRs is believed to evoke more continuous use. To sum up, this study may provide a feasible framework for travel brands to evaluate their current consumer engagement tactics.

References


Travel as Consumption: Capturing Social Media Footprints in Photogenic Places

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Abstract
The emergence and standardization of social networking sites (SNS) has completely changed the landscape of the travel industry in recent years creating an environment where travel experiences are traded online as markers of social status. Certain destinations that are befitting of online photography have seen an influx of visitors, with no strategic conservation. This research will qualitatively examine SNS behaviours in the travel to obtain a better understanding of the phenomena being experienced by the destinations effected, while determining practical strategies for place management.

1 Problem Definition
Technology has fundamentally changed the ways in which modern travel inspiration is derived (Buhalis & O’Connor, 2005; Wang, Xiang & Fesenmaier, 2016), with social networking subsisting as one of the dominant segments of the technological revolution in expressed travel behaviours. Furthermore, social influence now plays a significant role in travel decisions (Tanford & Montgomery, 2015), and increasingly the use of social networking sites (SNS) have become paramount to every stage of the travel process. As a result, online photography has emerged as an essential means of self-presentation and taking photos of oneself while traveling to share on SNS is now a primary objective of self-presentation (Lyu, 2016; Kim & Tussyadiah, 2013).

With many modern travellers seeking destinations that are befitting of certain visuals to represent intended emotions for their audience on SNS, there is a resulting influx of visitors to places that are unprepared for tourism development and lack the infrastructure necessary for sustainable tourism management.

The purpose of this research is to qualitatively explore the behavioural implications that social networking used as a means of self-presentation have generated modernistic travel habits, and to examine how the phenomenon of affected certain destinations that are befitting of online photography.

The objectives of this research are:
• To define persistent behaviours of travellers to locations that are befitting of online photography for self-presentation on social networking sites; and
• To examine the paternalistic strategies that destinations have used to shape visitor behaviours and place management; and
• To evaluate the degree of efficacy of the strategies destinations currently have in place.

2 Literature Review
2.1 Travel Photographs as Objectified Self-Presentation
Posting travel photographs online has become the norm, not only because tourism is so closely related with visual experiences (Pan, Lee & Tsai, 2014), but also because of its long-established role as a source for cultural mediation and social interaction (McCabe & Stokoe, 2010). Social networking sites are particularly significant sources for contemporary travellers to share sights from their journeys and obtain travel advice and suggestions (Pearce & Packer, 2013). In addition, taking photos of oneself while travelling to share on social media is now a primary objective of self-presentation (Lyu, 2016; Kim & Tussyadiah, 2013). Travellers can access visual content from around the world via SNS (Tussyadiah & Fesenmaier, 2009) and now plan for the photos they will take on future trips. They also show great concern for the quality of their photos, while looking to the photos of their social networks to draw inspiration (Lo & McKercher, 2015). Tourists respond strongly to images in circulation about their touristic destinations (Crouch & Lübbren, 2003).

With the advent of the internet and SNS, social influence has become a powerful force in travel decision-making (Tanford & Montgomery, 2015), with social media inspiring a new consumer journey for travellers (Hudson & Thal, 2013). Posting travel photographs online has become the norm, with many having an intention to elicit envy (Hajli, Wang & Tajvidi, 2018). Taking photographs can be considered a cultural idea and therefore tourists are caught up in what they “must” photograph and how a landscape or portrait “should” look (Bourdieu, 2003), and the circumstantial social interaction of SNS contributes exponentially to this phenomenon.

2.2 Sphere of Influence

Destination marketing via the internet has evolved from simply providing information online that was traditionally presented in a visitor’s guide to harnessing the power of social interactions made possible by social media. Influencers or individuals with stakeholder status in a destination were found to have a higher degree of influence than a DMO or formal business marketing campaign (Bokunewicz & Shulman, 2017).

As a result of the social networking phenomenon, social influence in travel has been exponentially increased, with an entirely new market of travel influencers emerging on SNS. Research on Influencers and Opinion Leaders in travel is still an emerging topic. Influencers are characterized by their large social following due to their online self-branding activities and ability to fully integrate their brand with their role on social media (Lin, Bruning, & Swarna, 2018). Opinion leaders consider themselves to be experts and will likely think they possess the knowledge that the general travellers communicate through social media (Yoo, Gretzel & Zach, 2011).

2.3 Role of Places

The role of tourism spaces and related tourism practices within those spaces is an important phenomenon in the history of tourism research (find sources ex: Turner & Ash, 1975), and the motivation to take photographs has become a part of the tourist gaze (Dinhopl & Gretzel, 2016). Tourism is uniquely visual, with pictures being vital to successfully create a destination image (MacKay & Fesenmaier, 1997).

Overcrowding in tourism spaces is a well-researched topic, however, there is a lack of specific research to tourists that are motivated to travel solely for means of self-presentation on SNS. There is a certain ceiling of social congestion costs to areas that
attract visitors, which must be regulated to manage both visitor satisfaction and protection of the area itself (Martín & Luis, 2011).

Scarles (2012) studied the ethical byproducts and complexities imposed on a destination by tourist photography, and concluded that rather than being static or overarching, the moral maze of tourists photographing and encountering locals is a relatively complicated and ambiguous situation that will continue to require ethical negotiation to ensure the least amount of intrusion on local communities. Santana-Jiménez & Hernández (2011) indicated that tourists of differing cultures present varying challenges upon destinations, and useful policies were outlined to protect the local communities in this context. These examples precede potential applications for locations that are recently popular due to the phenomenon of social networking (Siegel & Wang, 2018).

3 Conceptual Development

4 Proposed Methodology

The methodology will need to address the research questions, and thus will be broken down into phases to meet the goals of the study, which will take an ethnographic approach, commonly used to study social behaviours on the terms of the participants and not that of the researcher (Anderson, 2009).

Participant observation will be carried out in destinations that meet predetermined criteria. Specifically, places that are explicitly popular for the purpose of self-presentation on SNS and not mature destinations that have experienced and continue to experience large tourist crowding due to inherent popularity regardless of social networking. Preference will be paid to places that have an online documented history of visits and resulting posts of Influencers and Opinion Leaders in travel. Online content analysis will be used in the destination selection stage.

To address the remaining research questions, the researcher will be fully immersed in field observations to determine exactly what place management and protection
strategies are currently in use. Additionally, interviews with visitors will be conducted to gather information on their motivations for visiting these locations, and to explore their behaviours for self-presentation on SNS.

In the last research phase, the onsite participants’ social networks will be mapped by the researcher to determine network overlaps and sphere of influence. The specific photos that the onsite participants upload to SNS will be analysed by the researcher and to answer the research questions.

5 Anticipated Results

Over-tourism has been researched thoroughly, though the locations that encompass the definition of over-tourism are inherently popular destinations learning to deal with more visitors than ever before; however, this research will focus on locations that are specifically popular for the purpose of self-presentation for SNS. It is anticipated that results will contribute insights on the habits and infographics of how SNS is used for travel-related behaviours, as well as beneficial strategies for these locations to utilize for the unforeseen visitors social networking has brought upon them.

Moreover, sustainability concepts that are used for larger established destinations can be expanded to apply to smaller micro destinations that are emerging due to the online photography phenomenon for SNS. The importance of having strategies such as these include a broad range of benefits including lower environmental impacts on the location itself, as well as the local community. This would also result in higher visitor satisfaction.

The sphere of influence and its potential results on destinations is still a developing topic. Possible theoretical contributions are highly positive.

References


Abstract

Online reviews have been studied for their potential to explain consumer behaviour and to predict business performance. However, large volume and unstructured format of the textual part of the reviews make them unamenable to analysis with traditional methods like survey. By employing the automated text mining methodology this study explores how consumers reflect on the perceived service quality in the online reviews. Specifically, sentiment analysis, text classification and predictive modelling will be applied to investigate the dimensions of perceived service quality together with their contribution to the overall rating of service experience. The results are expected to extend the understanding of perceived service quality; to illustrate the value of the automated text mining methods for maximising the usefulness of online reviews and helping businesses reach their strategic goals.

1 Introduction

In the modern world full of choices, the success of the business depends on the ability to promptly identify the needs and aspirations of the consumers, and turn them into distinguishable, high quality experiences. For decades, service quality remains among the hottest topics in marketing and management research. Consumers’ perception of service quality and satisfaction with the service provided, have become important business performance indicators, and are traditionally monitored and measured through surveys.

With the rise of social media and travel platforms consumers are increasingly willing to provide a voluntary review of the services they received. Review and booking platforms like TripAdvisor, Yelp, Google or Booking.com allow the users to post detailed text review along with the numerical rating of the service or its parts, generating high volume of readily available consumer feedback. The latter is particularly relevant for the service industries, like hospitality, where the formal quantitative quality measurements (e.g. hotel stars) remain subjective and incomparable. Unsurprisingly, there is increasing evidence of the strong influence the reviews have on consumers’ attitudes and behavioural intentions (Ladhari & Michaud, 2015; Mankad, Han, Goh, & Gavirneni, 2016). Industry and researchers are called for to find efficient ways of leveraging this resource to create the better insights into consumer service experiences and the evaluations thereof. Further, it is interesting to tease out the key drivers of satisfaction and dissatisfaction from these unstructured text resources to help industry establish a system to improve their service provision.

The two main obstacles in dealing with the online reviews are: (1) the large and constantly increasing volume of the data; (2) unstructured format of the textual part of the reviews. The developments in text mining methodologies provide new tools for discovering patterns and extracting valuable information from the unstructured texts (Mankad et al., 2016).

Given the above-mentioned challenges the aim of the research at hand is to determine
how automated text mining methodology can be exploited to elicit consumer opinions embedded in online reviews. By analysing the unstructured content of the online hotel reviews, the study strives to answer the following research questions: RQ1. What are the underlying service quality dimensions reflected in the online hotel consumer reviews? RQ2. To what extent does each of the identified perceived service quality dimension contribute to the reviewer’s overall rating? RQ3. To what extent can the identified service quality topics and their sentiment be used to predict the reviewer’s overall rating?

2 Theoretical Background

2.1 Service Quality

Service quality remains among the most debated topics in marketing and management literature. Service quality is a complex multidimensional concept that is often investigated from one of the two paradigms: expectation-disconfirmation or the performance-based paradigm (Brady & Cronin Jr, 2001; Parasuraman, Zeithaml, & Berry, 1988). The central idea of the expectation-disconfirmation paradigm, presented in SERVQUAL model, is that service quality is a comparison between consumers’ perception of the company’s performance (how they feel the service provider performed) and the preceding expectations (what consumers feel the service should offer). The critics of the SERVQUAL scale discard the expectation component and use performance to measure perceived service quality. While in SERVQUAL service quality is being studied along the five dimensions (reliability, responsiveness, tangible aspects of the service, assurance and empathy); in SERVPERF (the dominating performance-based model) service quality is conceptualized as a three-dimensional construct (outcome, personal interaction and physical environment) (Cronin & Taylor, 1992; Parasuraman et al., 1988).

As the discussion continues, there is no consensus regarding the optimal measurement of the service quality construct (Brady et al. 2002; Zeithaml & Berry 1994; Duan et al. 2016; Carrillat 2007; Kilbourne et al. 2004). Moreover, previous research suggests that this is nearly impossible because of the strong connection with the research context. This study extends the service quality literature, not by suggesting another model, but by suggesting another approach to extracting service quality measurements from the online reviews.

2.2 Online Reviews: Source of Unfiltered Consumer Opinion

Earlier studies have examined the potential power of online reviews from one of two perspectives. The first perspective examines whether quantitative review characteristics (e.g. star ratings, review volume) are associated with business performance indicators (e.g. revenue, satisfaction, purchase intention) (Babić Rosario et al. 2016). These studies yield un conclusive results. On the one hand, scholars confirm existing association between online review ratings and performance indicators (Duan et al. 2016; Chevalier & Mayzlin 2006). On the other hand, Blal & Sturman (2014) suggest insignificance of these relationships.

The second perspective examines the text of the reviews to get better insights into consumer behaviour and consumer choices. Recent developments in the field of information technologies opened the way to automate text analysis processes. Generally referred to as text mining, these methodologies allow to automatically process a large
amount of textual data, identify hidden patterns or trends in the data and create models interpreting those trends (Tsantis, Castellani 2001). An increasing number of studies start to employ text mining to online reviews to understand how consumers perceive service quality (Mankad et al. 2016; Duan et al. 2016). They predominantly use supervised text mining techniques to validate the existing service quality measurement scales. For example, Duan and his colleagues (2016) relied on an expert created word/term list to decompose customer reviews into five dimensions of the SERVQUAL model. In contrast, this study will employ unsupervised text classification algorithms to identify the perceived service quality dimensions from the online consumers’ reviews. The benefit is that no human a-priory determines an item or construct structure, instead the structure naturally evolves from the reviews text.

3 Methodology

3.1 Data

This study will use online hotel reviews from Booking.com. In order to improve reliability of the results, the data will be filtered based on the following criteria: a) language of the review - English; b) length of the review – only reviews with >30 words will be considered. The analysis will be performed on the balanced dataset, created by undersampling the dominant review categories. The final sample contains 28,372 reviews of 1435 hotels from 6 major European cities (Vienna, Barcelona, London, Paris, Amsterdam, Milano).

3.2 Analytical Framework

The data will be analysed following the four steps analytical framework.

*Step 1: Data Pre-Processing.* This study applies the standard data pre-processing steps including: converting text to lowercase, tokenizing the text, removing punctuation, numbers, stop words, special characters, sparse terms (words that appear in less than 1% of reviews), words’ lemmatisation (Guo et al. 2017; Mankad et al. 2016; Lee & Bradlow 2007). The pre-processed text of the reviews will be represented with a bag-of-words (BoW) document-term matrix, where columns will correspond to words of the corpus, and rows – documents of the corpus (reviews). The latter step is particularly important for the selected topic classification procedure (Blei, Ng, & Jordan, 2003).

*Step 2: Sentiment Analysis.* Initially sentiment analysis will be performed to identify the degree of the emotions consumers reflect in their reviews. Sentiment analysis is a wide spread approach to study “people’s opinions, appraisals, emotions, attitudes towards products, services, experiences, individuals, events etc. and their attributes” (Liu 2014). There are two competing approaches to sentiment analysis: lexical (dictionary based) and non-lexical (machine learning based) text classification (Taboada et al. 2011). The latter approaches proved to be particularly effective for evaluating the data from travel recommender systems (Kirilenko et al. 2017). This study employs the word2vec and SVM for sentiment classification (Bansal & Srivastava, 2018; Zhang, Xu, Su, & Xu, 2015).

*Step 3: Topic Classification.* The content of the reviews will be automatically processed and classified according to the underlying topics contained in the data. The procedure is referred to as text mining and is a popular methodology for classifying large amounts of unstructured textual data. This study will employ unsupervised Latent Dirichlet
Allocation (LDA) model from the R package “topicmodels”. LDA is a probabilistic model, built upon the assumptions that (a) each document is a mixture of topics; (b) each topic is a mixture of words (Blei et al., 2003). The optimal number of topics (K) is determined by: 1) complex of minimisation and maximisation measures (Anandarajan et al, 2019); 2) the lowest perplexity index (Blei et al., 2003). Additionally, the content of the topics of the selected model is then manually analysed and labelled by at least two human coders.

**Step 4: Predictive Modelling.** To study the association between numerical hotel ratings, underlying topics, and sentiment score several classification models will be tested. The dependent variable for every model will remain the overall rating. Independent variables will include BOW frequencies, topic and sentiment probabilities.

The predictions will be performed with three classifiers from the R package “Caret”: NB, SVM and RF. The best classification model will be selected upon five-fold cross-validation, using “Cohen’s Kappa” and average “F score” as model quality indicators (Kirilenko et al., 2017). Finally, the varImp function of the R package “Caret” is applied to identify to what extend each of the underlying topics contribute to the overall hotel rating.

## 4 Preliminary Results

Following the results of preliminary experiments, 5-topic model was selected for the analysis. Based upon the top words the topics were manually labelled as (1) Tangibles; (2) Responsiveness & Empathy; (3) Environment; (4) Transactions and (5) Food & Beverage.

The topic probabilities along with BOW frequencies and sentiment probabilities were modelled to predict the overall ratings. Based on the Cohen’s Kappa and Average F Score values SVM demonstrated the highest level of performance (Kappa = 51%; Average F Score = 67.2%). BOW frequencies and topic probabilities were defined as the optimal predictors of the overall ratings, whereas adding sentiment probabilities did not influence the results.

The selected model was further analyzed to understand the degree of contribution of individual topics to the three levels of overall ratings. The results convey that quality related to transactions and employees responsiveness and empathy are the most important predictors for both Low rated and High rated reviews.

Finally, additional model tuning procedures and experiments are required to understand the role of the sentiment in the overall rating formation and the degree of positivity/negativity of the identified topics.

## 5 Conclusion

In the modern digitally mediated world consumer reviews become the primary source of information regarding consumer preferences, expectations and behaviour. This study challenges the traditional service quality research methodologies and proposes novel automated text mining approach to investigate perceived service quality from the textual part of the consumer reviews. The theoretical contribution of the study is seen in validating the use of automated text mining algorithms in hospitality context;
challenging existing service quality measurements scales; and improving understanding of the service quality construct. Managers can leverage the proposed approach to assess and improve the quality of the offered services. At the same time, the findings are expected to become an additional argument for the managers to facilitate automation of the process of service quality measurement that would free essential resources to be invested in actual design of the better service.

References


