'Smart' Visitor Mobility Management in the Tourist-Historic City

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Abstract

The multi-disciplinary study tries to establish interrelations between online mobile technology used for heritage interpretation and visitor mobility behaviour, exploring the implications that the changed behaviour patterns have for applied visitor management in UNESCO World Heritage listed historic city centres. Ubiquitous online mobile technology disperses delimitations between activities, time and space which affects and fundamentally changes everyday life including touristic utilized spaces and activities. In this 'liquid modernity', tourism is perceived as an essential form of mobility, increasingly changing under the influence of online mobile technologies. With this changing landscape of both, tourism and online mobile technology, interpretation of space, communication of information and the ensuing movement within a destination have to be amended accordingly. Tourism is often considered as one of the few options for economic vitality in historic cities. However, there is a fine line between tourism being an added value and support to conservation, and tourism becoming the reason for conservation. This study scrutinizes prevailing visitor mobility management strategies in historic cities in the context of changing visitor movement triggered by the increasing influence of online mobile media. For this purpose the technology awareness and acceptance of destination management organisations and the utilization of interpretive online mobile media is explored by conducting an online survey in 127 UNESCO World Heritage historic city centres, followed by an in-depth analysis in selected study areas of the compatibility of currently applied visitor mobility management strategies with prevailing behaviour of 'connected' visitors using sentiment analysis on data generated from social media mining.

Keywords: Visitor Management; Technology Acceptance; GIS; Online Mobile Technology, ICT; Historic Cities

1 AIM

The overall aim of this study is to identify and understand the actual and potential influence of mobile technologies upon visitor mobility behaviour within historic cities, and to evaluate the implications for, and effectiveness of, prevalent visitor management strategies on the case of UNESCO World Heritage listed historic cities.

From this objective three sub-aims derive: (1) The examination of the prevailing technology acceptance and actual technology usage of Destination Management Organisations and (2) the identification and understanding of the actual and potential influence of mobile technologies upon visitor mobility behaviour within the tourist-historic city which provide the basis for (3) the evaluation of the implications for, and effectiveness of, prevalent visitor management strategies with focus on online mobile technology integration and utilization.

2 BACKGROUND

The 'historic city' is a contemporary concept shaped by the urban form and fabric of the past, and fed by intangible notions of heritage (Mitsche et al., 2013) that are increasingly imparted by technocentric communication methods, making the 'past' not only more accessible, but also more vulnerable than ever before (Lowenthal and Till, 1997). Many cities and towns utilise and even exploit heritage in some form, although the physical components of heritage cannot be expanded easily and are expensive to safeguard and renew. Tourism contributes to the economic vitality of historic cities, however, the touristic utilization of historic built environments commonly entails a deep transformation of social, environmental and physical (urban) structures (Barrera Fernández, 2016), requiring effective management to navigate the

"delicate balance between tourism being a support to conservation and tourism becoming the reason for conservation." (Orbasli, 2000, p. 13).

As a communication process, heritage interpretation is designed to reveal and convey meanings and relationships of cultural and natural heritage to audiences, and is an important tool for effective destination management. However, due to advances in computing capabilities and the rapid uptake of ubiquitous mobile technology, Information Communication Technologies (ICTs) became a pivotal tool to effectively interpret environments and increasingly calls the effectiveness and relevance of classic interpretative methods into question.

In 'The Tourist Gaze', Urry (2002) expressed the dynamics of the tourist experience, emphasising changes in the organisation of travel, including innovation in communications technology, development of travel infrastructure, transformation of the economy and the changing taste of travellers. In light of these changes, a 'New Mobility Paradigm' has emerged, redefining tourism as a temporary form of mobility, in essence, conceptually analogous in scope and meaning to other forms of movement. This new paradigm opens up new possibilities for more effective analysis and management of mobilities and immobilities within tourist-historic cities, including the reconsideration of the concept of the 'traveller'. Coles et al. (2004) promote the need to understand the behaviour of the individual and not simply focus on the purpose-driven tourist. However, ubiquitous online mobile technology increasingly blurs the boundaries between activities, time and space as individuals negotiate their day-to-day mobility with increasing fluidity and make ad-hoc decisions on the go (Dickinson et al., 2012), creating unprecedented effects and constraints on tangible and intangible components of the tourist-historic city.

This growing 'liquid modernity' (Bauman, 2000) has been accelerated through the advent of ubiquitous mobile technology, comprising 1.8 billion global smartphone users in 2015 with a forecast to reach 2.7 billion by 2019 (Statista, 2016). In 2015, globally 1.2 billion people travelled (UNWTO, 2016) and 1.8 billion travellers are to be expected by 2030 (UNWTO, 2011), whereas 42% of all travellers used smartphones to plan their trip and 67% used smartphones at the destination to find their way around (Carter, 2015). Considering these statistics the imperative to investigate and understand the impact of mobile technology upon visitor behaviour is apparent, particularly within the fragile and unique environments of historic cities.

UNESCO (2015) considers mobile technology as both a threat as well as an opportunity for historic sites, encouraging site management organisations to fundamentally reconsider their strategies and incorporate and adapt to new technologies. However, to be able to do this effectively, behavioural changes of 'connected' visitors have to be first identified and understood. Recent research has utilized location sensing and tracking to generate spatio-temporal data to understand different aspects of mobility and travel (Moussouri and Roussos, 2015; Al-Subhi, Bell and Lashmar, 2015). However, to gain a richer understanding of the users' experience of and relation to the historic built environment, this research proposes the use of social media data mining (Chua et al., 2016), combined with targeted ethnographic mobility studies to explore the effects of mobile technology on the movement and experience of visitors in historic cities, and to examine the implications for visitor management strategies.

3 METHODOLOGY

The methodological design proposes a sequential multi-stage, mixed method approach. The first stage focusses on the supply side of a destination. An online survey is sent out to (1) identify the technology awareness and acceptance of Destination Management Organisations (DMOs) as well as the technology integration into policies and the actual use of online mobile media. The results of this survey will also provide the basis to (2) identify three suitable study areas for in-depth investigations in the subsequent stages. The in-depth analysis will use sentiment mining techniques to extract and illustrate technology influenced movement and behaviour of the demand side (visitors) on an intra-destination level. Geographic Information Systems (GIS) will be used to overlay and compare mined data to applied visitor management strategies and techniques at the destination with the purpose to reveal compliance or anomalies between the intended visitor management activities and the actual, technology influenced visitor behaviour.In case of severe deviations between management intention and visitor behaviour it is envisaged to conduct an ensuing ethnographic study at relevant sites for a better understanding and identification of potential causes.

3.1 Technology Diffusion in Visitor Management

A methodological framework has been developed to be able to identify technology awareness and acceptance on a destination management level as well as the actual use of technology in terms of policy integration and actual utilization. The methodological framework sequentially combines awareness models (Markopoulos, Ruyter and Mackay, 2009), technology acceptance models (Taylor and Todd, 1995) and use theories (Venkatesh et al., 2003).

The focus of this study is the identification of technological awareness and acceptance of destination management organisations (DMOs) in terms of intra-destination visitor management and interpretive ICT strategies, to understand the prevalent utilization, application and incorporation of mobile technologies for on-site visitor mobility management as well as heritage interpretation. For this purpose, online questionnaires based on the developed methodological framework will be designed and distributed to 127 DMOs covering 139 listed UNESCO WHS in Europe and North America.

Based on the findings of the online survey it is envisaged to select three relevant study areas for the in-depth examination of online mobile diffused visitor behaviour within the managed destination.

3.2 Technologically Influenced Visitor Mobility Behaviour

The aim of this stage is (1) to identify spatio-temporal visitor behaviour with focus on ‘sojourn areas’ at the destination. It is anticipated to generate large data through social media data mining by using R as coding language to access social media platform APIs (Application Programming Interfaces) and apply text mining techniques such as sentiment analysis and topic modelling for content analysis.

Subsequently, (2) GIS (Geographical Information System) will be used to identify compliances and/or deviations between applied visitor management strategies, interpretive methods and activities used at the destination and the previously user-generated spatio-temporal mobility behaviour data extracted from social networks.

Complementing the quantitative data generation, the last stage proposes an ethnographic investigation to further discuss the identified deviations and anomalies between actual technology-influenced visitor behaviour and applied visitor management strategies. The aim is to understand and describe implications that the 'digital panopticon' (Ahas et al., 2014) created by the ubiquitous availability of mobile technology has on visitors' spatio-temporal movement behaviour (Büscher and Urry, 2009). It is envisaged to perform covert or participatory observations, such as 'shadowing' (Bærenholdt et al., 2005) or apply 'participation-while-interviewing' techniques (Kusenbach, 2003), of visitors in the selected areas, the final choice of the appropriate technique is based on the results of the preceding data generation. The core purpose of the ethnographic study is an in-depth investigation of the immediate effects social media can have on user behaviour, in this case focusing on the influence on spatio-temporal decision-making processes and consequently movement behaviour of users in historic cities when using online mobile technology to explore the destination.

4 EXPECTED RESULTS

Based on the overall hypothesis of the study it is expected to (1) give an insight on the prevailing technology acceptance and usage among DMOs as well as (2) identify deviations or consistencies among applied visitor management strategies at the destination and actual behaviour of visitors using online mobile technology applications and devices on-site.

The first phase of data generation is envisaged to start in April 2017, leading to first results by May 2017.

5 CONCLUSION

This study will provide foundational insights into conceptual and empirical discrepancies between provider and user of interpretive online mobile technologies in touristic urban environments. Prevailing paradigms of space use and mobility are scrutinized based on the proposed behavioural changes of the ever-growing number of online mobile media users.

These findings provide the potential to optimise destination management, tackle touristic constrains on sites as well as holistically yield touristic impacts on a sustainable basis.

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