

# Knowledge Creation in Information Technology and Tourism Research

## Abstract

We critique Information Technology and Tourism (ITT) research and make recommendations to enhance its theoretical and methodological development. Our recommendations are based on four critiques: 1) ITT is primarily a self-referential research area; 2) ITT is popular with tourism academics, but not in other technology-related disciplines; 3) ITT does not synchronize with its mother discipline of information systems; and 4) ITT is primarily focused on business applications of technology, with limited engagement of theoretical developments in social science. We firstly suggest ITT researchers should engage with wider disciplinary knowledge through their parent fields of Information Systems and Tourism. Secondly, we suggest a shift from the user-centric and over-crowded applied business studies focus of ITT and encourage theorizing IT and tourism in a larger social context critically and reflexively. Thirdly, we encourage academics to develop ITT specific guidance to offer rigorous directions and instructions of theoretical and methodological development.

**Keywords:** Information Technology; Tourism; Knowledge Creation; Future Research; Social Science

## 1. The Domain of ITT

From the 1980s Information Technology (IT) has transformed tourism business operations, distribution, and management (Buhalis and Law 2008, Navío-Marco, Ruiz-Gómez, and Sevilla-Sevilla 2018). Since then, Information Technology and Tourism (ITT) has become a popular research area. Although ITT is a joint research territory between the Information Systems (IS) discipline and Tourism, the development is more active in the field of tourism with two dedicated academic journals: *Journal of Hospitality and Tourism Technology*, and *Journal of Information Technology & Tourism*; one established research community: International Federation of Information Technology for Travel and Tourism, and its annual conference ENTER since 1994. In addition, many IT-related studies have been published in leading tourism and hospitality research journals (Leung and Law 2007, Cai, Richter, and McKenna 2019), while ITT research is also published to a lesser extent in journals outside tourism.

We believe that ITT and IS have similar core research themes. Sidorova et al. (2008) uncovered five core research areas in IS. We found some examples of ITT research within these core themes: *IT & Organizations* (Cheng and Lok 2015); *IS Development* (Chen and Sheldon 1997); *IT and Individuals* (McKenna, Cai, and Tuunanen 2018); *IT and Markets* (Kim, Chung, and Lee 2011); *IT and Groups* (Delic et al. 2018). Although the research scope of ITT is synchronized with IS, their progress of development as a field and approaches to enquiring knowledge are rather different.

In this article, we critique the current state of research in ITT and make several recommendations to enhance the theoretical and methodological development of ITT research. This article focusses on knowledge creation in ITT research specifically, not in

tourism research generally. To achieve this, the paper is placed into the context of the questions that arise about knowledge creation or theories within a discipline: domain questions, structural or ontological questions, epistemological questions, and socio-political questions (Gregor 2006). Each question is used to focus the subsequent sections in this paper.

## **2. Progress and Development of ITT Knowledge**

Academically, ITT is formed from parent fields of Tourism and IS. Knowledge creation in tourism and IS both share the discursive and complex nature of originating from and being influenced by fundamental disciplines such as geography (for tourism) and computer science (for IS), and other underlying disciplines such as sociology, psychology, political science, economics, and anthropology, which play significant roles in creating and developing knowledge in both fields. However, although tourism and IS are heavily influenced by these founding disciplines, the current ITT research tends to take a narrower focus and engages with them to a lesser extent.

ITT research is still in an early advocacy phase lacking critical and reflexive academic enquiries (Munar and Bødker 2014). Established from its foundations in IS three decades ago, the theoretical foundation of ITT is similar to the early stages of IS research, which took the technological artefacts for granted (Orlikowski and Iacono 2001) instead of critiquing and theorizing them. Since introducing key concepts of IS to tourism at the early stage, the knowledge development of ITT research has been limited in the self-evolving eco-system without checking with its mother discipline IS. This includes missing other milestones in IS development. ITT studies tend to be self-referential instead of consulting much of the latest developments and progress in the mother discipline IS. For example, the Technology Acceptance Model (TAM), which originated in IS, has also been widely adopted in ITT research. However, there are now IS journals which no longer accept TAM studies (e.g. *Information Technology and People*).

In their ground-breaking paper, Orlikowski and Iacono (2001) fundamentally changed the nature of theorizing in IS. They proposed to make theorizing of technology as the core focus.

The applied nature of IT, however, has formed much debate among IS academics around theorizing of IT artefacts within specific social, historical, and institutional contexts (Orlikowski and Iacono 2001). IS research has developed into an integrated technology, management, organizational and social focus (Avison and Elliot 2006). Most IS journals, therefore, require theoretical contributions focused on the IT artefact, with less importance placed on practical implications (Baskerville and Myers 2004). Many other fields are not aware of this shift, and the growing influence of social science in IS research (Avgerou 2000), which results in misunderstandings of IT knowledge creation. ITT research, as a typical case, is still largely focused on the practical, problem-solving, and contextual applications of the technologies. Regardless of the tourism context in ITT, there is a gap between IS and ITT in terms of the understandings of technology.

### **3. Knowledge Enquiries in ITT**

Despite tourism being considered as a permeable and interdisciplinary field, IT enquiries in tourism have been largely focused on applied business studies (Tribe 2010, Tribe and Liburd 2016) from either an organisational or individual perspective (Cai, Richter, and McKenna 2019). For example, e-commerce hotel bookings (Bilgihan et al. 2014), strategic decisions by top management (Cheng and Lok 2015), customer satisfaction (Wang et al. 2016) or passengers' digital channel engagement in airports (Straker and Wrigley 2016). This focus on applied business studies (Van Scotter and Culligan 2003, Leung and Law 2007) somehow explains why tourism academics perceive ITT research more practically than theoretically (Yung and Khoo-Lattimore 2017). In addition to categorizing the predominating ITT research in the field of 'the business of tourism' (Tribe 1997), in Tribe and Liburd (2016)'s tourism knowledge system, technology is also mentioned as a 'hard' science. However, IS has long considered the social issues related to technology (Walsham 1995). Also, web 2.0, referring to philosophical principles to understand web-based collaborative, bottom-up knowledge production is located within extra-disciplinary tourism knowledge.

We argue that the lack of focus and uneven attention of technology in the tourism knowledge system, and the focus on applied business research in ITT research (although we acknowledge its importance), leads to rich research within a narrow set of ITT related domains but misses out on the potential for research diversity in broader areas from social science and humanities. For example, much ITT research has focused on the concept of users (Cai, Richter, and McKenna 2019) as passive consumers (Bødker and Munar 2014). IS research has critiqued this socially thin user construct, as it limits understanding of the various roles, interactions, and social contexts in which 'social' users produce goods and services through IT (Lamb and Kling 2003).

ITT research is not considered a ‘hot topic’ in its mother discipline IS. Our search for the keyword ‘tourism’ in the title, abstract, or keywords of the eight key IS journals (known as the Senior Scholars Basket) from 1999 to 2019 returned only nine articles. In these articles, tourism was considered either as a secondary contribution (Adam and Urquhart 2009), as a convenient context for the study (Clemons and Hann 1999, Michopoulou and Buhalis 2013, Granados, Kauffman, and King 2008), or because the data was collected from a tourism setting, but the paper’s contribution was in another context (Au, Ngai, and Cheng 2008). ITT research is thus divided unequally between tourism and IS academics. In tourism, ITT research focuses on the usage, applications and impact of IT in understanding the phenomenon of tourism; while ITT research in IS utilizes tourism as a context to theorize technologies. Overall, our impression is that ITT research has not reached its full potential.

Therefore, we recommend that ITT researchers look beyond applications of technology and engage in a wider area of research in social science through its parent fields of IS and tourism. Using IS as a reference discipline (Baskerville and Myers 2002), and the sociology of tourism (Tribe and Liburd 2016) to inform ITT research brings with it the rich theoretical developments in sociology, psychology, culture, economics, and other theoretical approaches developed in IS and tourism literature.

#### **4. A Vision of a Critical, Inclusive and Rigorous ITT Research Territory**

We encourage ITT academics to engage in co-evolution of knowledge (Gretzel 2011) with IS and tourism by actively introducing critical perspectives and theories from social science disciplines to explore the dynamic tourism and technology interface (Munar and Bødker 2014). These combined avenues of IS and tourism research inquiry in ITT will free academics from the limited applied business focus of this area and encourage a wider range of epistemic and methodological approaches to understand how tourism engages in the transformational impact and interrelations of IS with human beings as social phenomena (Munar and Gyimóthy 2013).

By recognizing a wider territory for ITT, researchers should engage in deeper discussions and dialogues around ethical and socio-political debates by theorizing tourism and technology together. This includes engaging in paradigmatic shifts away from the user-centric focus; instead, focusing on the (re)constructions, (re)ordering, and the meaning-making of the dynamic travel space. Based on this shift, researchers can examine how ITT affords embodied virtual and physical experiences, transform values, challenges norms, and promotes inclusion (see White and White 2007, Tribe and Mkono 2017, Germann Molz 2013). Furthermore, by theorizing IT artefacts in ITT studies or conceptualizing exclusive IT and Tourism theories, research outcomes can potentially contribute to wider contexts instead of solving problems of the single case.

Bødker and Munar (2014) argued that knowledge production in ITT is limited by a lack of critical voices. Although tourism research, in general, does contain guidance for methodological approaches, we argue that additional guidance with a technological perspective is needed for ITT researchers, and could draw on guidance given by IS research.



This would enable ITT researchers to engage fully with the broader implications of technology. There are a plethora of such papers in IS, for example, technology and critical research (Myers and Klein 2011), technology and interpretive studies (Klein and Myers 1999), and design (Peppers et al. 2007), which have been widely applied within IS and across other disciplines. However, we recommend that ITT researchers could go further, and begin to develop these guidance papers with the dual focus of both theoretical and methodological developments from the combined tourism and IS perspectives.

## **5. Conclusion**

We have critiqued the current progress in ITT research. We made several recommendations for further research to ensure that ITT research continues to flourish and to improve its theoretical and methodological development. We recommend that authors look beyond self-referential ITT research by engaging with theoretical social science developments from both IS and Tourism. We suggest that ITT researchers should look away from the user-centric and applied business studies focus, and theorise the interface between technology and tourism from a larger social science focus. We also recommend that ITT researchers not only utilize the theoretical and methodological guidance from IS and tourism but also develop their own ITT specific research guidance. We believe these recommendations will enhance the rigour, criticality, theoretical, and methodological knowledge creation, and create a more dynamic and rich body of ITT knowledge.

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