

Knowledge Creation in Information Technology and Tourism Research

Wenjie Cai¹  and Brad McKenna² 

Journal of Travel Research
2021, Vol. 60(4) 912–915
© The Author(s) 2020



Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0047287520903142
journals.sagepub.com/home/jtr



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 first suggest ITT researchers should engage with wider disciplinary knowledge through their parent fields of Information Systems and Tourism. Second, we suggest a shift from the user-centric and overcrowded applied business studies' focus of ITT and encourage theorizing IT and tourism in a larger social context critically and reflexively. Third, 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

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); and *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 inquiring 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 article 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 letter.

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

¹University of Greenwich, London, United Kingdom

²University of East Anglia, Norwich, United Kingdom

Corresponding Author:

Brad McKenna, University of East Anglia, Norwich Research Park, Norwich NR4 7TJ, United Kingdom.
Email: b.mckenna@uea.ac.uk

(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 inquiries (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 artifacts 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 ecosystem 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 that 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 artifacts 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 artifact, 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.

Knowledge Inquiries in ITT

Despite tourism being considered as a permeable and interdisciplinary field, IT inquiries in tourism have been largely focused on applied business studies (Tribe 2010; Tribe and Liburd 2016) from either an organizational 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's (2016) 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 extradisciplinary 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 were 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.

A Vision of a Critical, Inclusive, and Rigorous ITT Research Territory

We encourage ITT academics to engage in coevolution 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 sociopolitical 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 artifacts 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 (Peffer 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.

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 theorize 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 rigor, criticality, theoretical, and methodological knowledge creation, and create a more dynamic and rich body of ITT knowledge.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iDs

Wenjie Cai  <https://orcid.org/0000-0002-1505-7240>

Brad McKenna  <https://orcid.org/0000-0002-2219-7508>

References

- Adam, Mariyam Suzy, and Cathy Urquhart. 2009. "No Man Is an Island: Social and Human Capital in IT Capacity Building in the Maldives." *Information and Organization* 19 (1): 1–21.
- Au, Norman, Eric W. T. Ngai, and T. C. Edwin Cheng. 2008. "Extending the Understanding of End User Information Systems Satisfaction Formation: An Equitable Needs Fulfillment Model Approach." *MIS Quarterly* 32 (1): 43–66.
- Avgerou, Chrisanthi. 2000. "Information Systems: What Sort of Science Is It?" *Omega* 28 (5): 567–79.
- Avison, David, and Steve Elliot. 2006. "Scoping the Discipline of Information Systems." In *Information Systems: The State of the Field*, edited by J. L. King and K. Lyytinen, 3–18. Chichester, UK: Wiley.
- Baskerville, Richard, and Michael D. Myers. 2002. "Information Systems as a Reference Discipline." *MIS Quarterly* 26 (1): 1–14.
- Baskerville, Richard, and Michael D. Myers. 2004. "Special Issue on Action Research in Information Systems: Making IS Research Relevant to Practice: Foreword." *MIS Quarterly* 28 (3): 329–35.
- Bilgihan, Anil, Fevzi Okumus, Khaldoon Nusair, and Milos Bujisic. 2014. "Online Experiences: Flow Theory, Measuring Online Customer Experience in E-commerce and Managerial Implications for the Lodging Industry." *Information Technology & Tourism* 14 (1): 49–71.
- Bødker, Mads, and Ana María Munar. 2014. "New Territories in Information Technologies and Tourism Research." In *The Wiley Blackwell Companion to Tourism*, edited by Alan A. Lew, C. Michael Hall, and Allan M. Williams, 262–74. Chichester, UK: Wiley.
- Buhalis, Dimitrios, and Rob Law. 2008. "Progress in Information Technology and Tourism Management: 20 Years on and 10 Years after the Internet—The State of eTourism Research." *Tourism Management* 29 (4): 609–23.
- Cai, Wenjie, Shahper Richter, and Brad McKenna. 2019. "Progress on Technology Use in Tourism." *Journal of Hospitality and Tourism Technology*. Published online April. doi:10.1108/JHTT-07-2018-0068.
- Chen, Hong-Mel, and Pauline Sheldon. 1997. "Destination Information Systems: Design Issues and Directions." *Journal of Management Information Systems* 14 (2): 151–76.

- Cheng, Vincent Ting Pong, and Peter Lok. 2015. "Strategic Decision-Making Criteria and Process of Top Management on Technology Adoption in the Travel Agency Industry." *Information Technology & Tourism* 15 (3): 189–208.
- Clemons, Eric K., and Il-Horn Hann. 1999. "Rosenbluth International: Strategic transformation of a Successful Enterprise." *Journal of Management Information Systems* 16 (2): 9–27.
- Delic, Amra, Julia Neidhardt, Thuy Ngoc Nguyen, and Francesco Ricci. 2018. "An Observational User Study for Group Recommender Systems in the Tourism Domain." *Information Technology & Tourism* 19:87–116.
- Germann Molz, Jennie. 2013. "Social Networking Technologies and the Moral Economy of Alternative Tourism: The Case of couchsurfing.org." *Annals of Tourism Research* 43:210–30.
- Granados, Nelson F., Robert J. Kauffman, and Bradley King. 2008. "How Has Electronic Travel Distribution Been Transformed? A Test of the Theory of Newly Vulnerable Markets." *Journal of Management Information Systems* 25 (2): 73–96.
- Gregor, Shirley. 2006. "The Nature of Theory in Information Systems." *MIS Quarterly* 30 (3): 611–42.
- Gretzel, Ulrike. 2011. "Intelligent Systems in Tourism: A Social Science Perspective." *Annals of Tourism Research* 38 (3): 757–79.
- Kim, Myung-Ja, Namho Chung, and Choong-Ki Tourism Management Lee. 2011. "The Effect of Perceived Trust on Electronic Commerce: Shopping Online for Tourism Products and Services in South Korea." *Tourism Management* 32 (2): 256–65.
- Klein, Heinz K., and Michael D. Myers. 1999. "A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems." *MIS Quarterly* 23 (1): 67–94.
- Lamb, Roberta, and Rob Kling. 2003. "Reconceptualizing Users as Social Actors in Information Systems Research." *MIS Quarterly* 27 (2): 197–236.
- Leung, Rosanna, and Rob Law. 2007. "Analyzing Research Collaborations of Information Technology Publications in Leading Hospitality and Tourism Journals: 1986–2005." In *Information and Communication Technologies in Tourism 2007: Proceedings of the International Conference in Ljubljana, Slovenia, 2007*, edited by Marianna Sigala Luis Mich, and Jamie Murphy. Vienna, Austria: Springer.
- McKenna, Brad, Wenjie Cai, and Tuure Tuunanen. 2018. "Technology Enabled Information Services Use in Tourism: An Ethnographic Study of Chinese Backpackers." *Pacific Asia Journal of the Association for Information Systems* 10 (4): 37–64.
- Michopoulou, Eleni, and Dimitrios Buhalis. 2013. "Information Provision for Challenging Markets: The Case of the Accessibility Requiring Market in the Context of Tourism." *Information & Management* 50 (5): 229–39.
- Munar, Ana María, and Mads Bødker. 2014. "Information Technologies and Tourism: The Critical Turn in Curriculum Development." In *Routledge Handbook of Tourism and Hospitality Education*, edited by Dianne Dredge, David Airey, and Michael J. Gross, 105–17. Abingdon, UK: Routledge.
- Munar, Ana María, and Szilvia Gyimóthy. 2013. "Critical Digital Tourism Studies." In *Tourism Social Media: Transformations in Identity, Community and Culture*, edited by Ana Maria Munar, Szilvia Gyimóthy, and Liping Cai, 245–62. Bingley, UK: Emerald.
- Myers, Michael D., and Heinz K. Klein. 2011. "A Set of Principles for Conducting Critical Research in Information Systems." *MIS Quarterly* 35 (1): 17–36.
- Navío-Marco, Julio, Luis Manuel Ruiz-Gómez, and Claudia Sevilla-Sevilla. 2018. "Progress in Information Technology and Tourism Management: 30 Years on and 20 Years after the Internet—Revisiting Buhalis & Law's Landmark Study about eTourism." *Tourism Management* 69:460–70.
- Orlikowski, W. J., and C. Iacono. 2001. "Research Commentary: Desperately Seeking the 'IT' in IT Research—A Call to Theorizing the IT Artifact." *Information Systems Research* 12 (2): 121–34.
- Peppers, Ken, Tuure Tuunanen, Marcus A. Rothenberger, and Samir Chatterjee. 2007. "A Design Science Research Methodology for Information Systems Research." *Journal of Management Information Systems* 24 (3): 45–77.
- Sidorova, Anna, Nicholas Evangelopoulos, Joseph S. Valacich, and Thiagarajan Ramakrishnan. 2008. "Uncovering the Intellectual Core of the Information Systems Discipline." *MIS Quarterly* 32 (3): 467–82.
- Straker, Karla, and Cara Wrigley. 2016. "Translating Emotional Insights into Digital Channel Designs: Opportunities to Enhance the Airport Experience." *Journal of Hospitality Tourism Technology* 7 (2): 135–57.
- Tribe, John. 1997. "The Indiscipline of Tourism." *Annals of Tourism Research* 24 (3): 638–57.
- Tribe, John. 2010. "Tribes, Territories and Networks in the Tourism Academy." *Annals of Tourism Research* 37 (1): 7–33.
- Tribe, John, and Janne J. Liburd. 2016. "The Tourism Knowledge System." *Annals of Tourism Research* 57:44–61.
- Tribe, John, and Muchazondida Mkono. 2017. "Not Such Smart Tourism? The Concept of E-lienation." *Annals of Tourism Research* 66:105–15.
- Van Scotter, James R., and Patrick E. Culligan. 2003. "The Value of Theoretical Research and Applied Research for the Hospitality Industry." *Cornell Hotel and Restaurant Administration Quarterly* 44 (2): 14–27.
- Walsham, Geoff. 1995. "Interpretive Case Studies in IS Research: Nature and Method." *European Journal of Information Systems* 4 (2): 74–81.
- Wang, Yi-Shun, Hsien-Ta Li, Ci-Rong Li, and Ding-Zhong Zhang. 2016. "Factors Affecting Hotels' Adoption of Mobile Reservation Systems: A Technology-Organization-Environment Framework." *Tourism Management* 53:163–72.
- White, Naomi Rosh, and Peter B. White. 2007. "Home and Away: Tourists in a Connected World." *Annals of Tourism Research* 34 (1): 88–104.
- Yung, Ryan, and Catheryn Khoo-Lattimore. 2017. "New Realities: A Systematic Literature Review on Virtual Reality and Augmented Reality in Tourism Research." *Current Issues in Tourism* 22 (17): 2056–81.

Author Biographies

Wenjie Cai is a Senior Lecturer in Tourism and Hospitality at the Department of Marketing, Events and Tourism, University of Greenwich, UK. Wenjie received his PhD in Tourism from the University of Surrey, UK. His main research interests include tourist behaviors, technology use, social inclusion, and intercultural communication in tourism.

Brad McKenna is a Lecturer in Information Systems at the University of East Anglia, UK. Brad received his PhD in Information Systems from the University of Auckland, New Zealand. His research interests focus on how people use information technology, in particular, virtual worlds, social media, and in tourism contexts.