

# Rethinking Knowledge Creation in Information Technology and Tourism

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## Abstract

This letter is a rejoinder to Xiang, Fesenmaier, and Werthner (2020), who responded to our letter to the editor about knowledge creation in information technology and tourism (ITT) research (Cai and McKenna 2020). We believe the authors have misinterpreted our claims and failed to address our main points in relation to the lack of theoretical and methodological development of ITT. Therefore, we address and clarify some misunderstandings in their response. We also elaborate on our ideas for broadening the paradigmatic boundaries of ITT research and opening up potential topics to tackle wider social issues. In addition, we provide more guidance for the growth and development of ITT through broadening boundaries, methodology and theorizing, as well as knowledge dissemination.

## Keywords

information technology and tourism, knowledge creation, theoretical development, methodological development, knowledge dissemination

## Introduction

We published a Letter to the Editor with the aim of enhancing the theoretical and methodological development of information technology and tourism (ITT) research (Cai and McKenna 2020) with the desire to see the field flourish and reach its full potential. We made several recommendations for future ITT research. Our letter received a response from three eminent ITT scholars (Xiang, Fesenmaier, and Werthner 2020), and we welcome their input to this wider discussion on the development of ITT. In their response, they challenged our recommendations by arguing that ITT is an intersection between IT and tourism and a well-developed and multidisciplinary field, despite Xiang being part of a larger team later agreeing with some of our arguments in Gretzel et al. (2020). Xiang, Fesenmaier, and Werthner (2020) also offer their own vision of future ITT research. However, their response has not engaged completely with the aims of our original letter. Our primary aim was to enhance the theoretical and methodological development of ITT, one that we believe is noble for any field. However, Xiang, Fesenmaier, and Werthner (2020) only provide a cursory glance at this topic and instead their response reads more like a summary of existing ITT research. We also believe that Xiang, Fesenmaier, and Werthner (2020) have misinterpreted many of our claims. Therefore, the point of this letter is to (1) clear up any misunderstandings, (2) encourage opening up and broadening the boundaries of ITT research, and (3) set an agenda for theoretical and methodological development, and knowledge dissemination in ITT research.

We are motivated to contribute to this debate by several arguments made by prominent tourism and ITT scholars, which we believe have still gone unaddressed in ITT research. For example, the neoliberal view of knowledge production that privileges performativity, consumerism, and profitability with a focus of applied business and planning (Tribe 2009) has dominated ITT knowledge enquiry (Munar and Gyimóthy 2013). ITT primarily deals with single empirical studies, while theoretical development papers are rare (Gretzel 2011). It has also been dominated by (post) positivist approaches from a limited number of classical cognitive theories (Munar, Gyimóthy, and Cai 2013; Bødker and Munar 2014; Pourfakhimi, Duncan, and Coetzee 2019) and, therefore, falling behind the advances of knowledge in its fundamental fields (Pourfakhimi et al. 2020). Munar, Gyimóthy, and Cai (2013) argue that ITT is still in the advocacy phase of tourism research in general (Jafari 1990) with weak influences from other disciplines in the social sciences and humanities or the adoption of critical or interpretivist approaches (Munar and Bødker 2014) and requires methodological rethinking (Gretzel 2011).

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## Response to the Critical Reflection

In responding to our claim that ITT needs more theoretical development, Xiang, Fesenmaier, and Werthner (2020) cite several papers that they claim have made contributions to theory (e.g., Buhalis 1998; Buhalis and Law 2008; Wang et al. 2010; Xiang 2018; Staab et al. 2002; Werthner and Ricci 2004). However, on our assessment, many of these articles are more descriptive than theoretical, that is, defining topics, and contain no theoretical development on their own. For example, Xiang (2018) identifies the “Age of Digitization” and the “Age of Acceleration,” which is a description or categorization of socio-technological trends but is not a contribution in the form of a theoretical invalidation, extension, or reframing (Whetten 1989). Definitional and typological studies are a major foci in tourism studies (Xiao and Smith 2006) but can only make a contribution to knowledge if they contain theoretical development via the identification of new concepts or relationships among existing concepts (Jaakkola 2020). Other scholars have found a similar lack of theory in ITT; for example, Yung and Khoo-Lattimore (2019) in their virtual reality literature review, and Munar, Gyimóthy, and Cai (2013) claim that many papers do not go beyond descriptions. Therefore, it is important for researchers to understand what constitutes theory, and what does not (Sutton and Staw 1995).

Xiang, Fesenmaier, and Werthner (2020) claim that we said the *Journal of Information Technology and Tourism* (JITT), the *Journal of Hospitality and Tourism Technology* (JHTT), and *ENTER* represent the whole field of ITT. However, we did not make such a claim. In our original letter, we acknowledged that many ITT papers are published in leading tourism and hospitality journals. We also acknowledge there are several prominent books and book chapters. Although ITT is a widely published field, it is over-focused in applied research and lacks in critical engagement of social issues and theoretical development. Xiang, Fesenmaier, and Werthner (2020) cite a large number of examples of ITT research. By doing so, they have proven our point about ITT being overly focused on the applied aspect of IT, as the majority of their cited papers fall into this category. By ignoring non-business related ITT research, we believe this limits the scope and potential of the field. We suggest that new avenues of non-business related ITT research could involve a critical turn in ITT, ethics, well-being, fake news, and the digital divide.

Xiang, Fesenmaier, and Werthner (2020) claim that we said ITT is a subfield of Information Systems (IS). However, we never used the term *subfield*. This misunderstanding may have come from our use of the term “parent discipline,” although we also used the term “reference discipline” (Baskerville and Myers 2002). They also claim that we are naïve to suggest that ITT research finds its primary reference in IS. Gretzel et al. (2020) argue that ITT is the intersection between IT and tourism, which is exactly our point. IT is a

concept formed by many academic disciplines such as computer science, software engineering, and IS. Despite this, Xiang, Fesenmaier, and Werthner (2020) and Gretzel et al. (2020) seem to go to great lengths to avoid saying that ITT uses IS as a reference discipline, while mentioning other IT-related reference disciplines such as computer science and engineering. We are puzzled by this omission as tourism and IS are both social science disciplines and share the common inquiry toward technology. Tourism and IS are more closely related than some of the other disciplines they mention (Hassan-Montero, Guerrero-Bote, and De-Moya-Anegón 2014). The omission is more surprising because there is a large body of ITT research that has drawn from two prominent theories developed from IS: the Technology Acceptance Model (TAM), and the Unified Theory of Acceptance and Use of Technology (UTAUT). These theories are also used for what Gretzel et al. (2020) claim is a lack of creativity and originality in ITT as it has primarily been focused on analyzing existing IT solutions and technology adoption and acceptance. While ignoring the contribution of IS, they mention other fields such as data science and digital sociology, which fails to recognize that IS researchers have also focused on these topics (e.g., Jones and Karsten 2008; Agarwal and Dhar 2014), which demonstrates that ITT researchers should not ignore IS as a reference discipline. In Scopus’s CiteScore metric, JITT and JHTT have subject area classifications of Tourism, Leisure and Hospitality Management, Computer Science Applications, and IS, further demonstrating the influence of IS on ITT research.

We further argue that ITT can draw from IS because of its focus on technology within social, historical, cultural, political, and business contexts (van Dijk et al. 2011; Hirschheim and Klein 2003). We disagree that referencing IS would narrow the focus of ITT; in fact, it is quite the opposite, we believe it would broaden its scope, potential research routes, and outlets for ITT. Xiang, Fesenmaier, and Werthner (2020) also refer to ITT as drawing on the computer science discipline. We do not dispute this, and agree that ITT research can also learn from computer science and other related disciplines. However, we believe ITT researchers can explore alternative realities of ITT phenomena, and for this reason, we suggested a reference to IS theoretical developments. IS is different from other IT-related disciplines as it focuses on applications (the “soft” issues) of technology rather than the fundamentals of the technology itself (the “hard” issues). Computer scientists and systems engineers research the technology itself, whereas IS researchers look away from the technology to the impacts it has on a broad range of contexts, which is why IS has been seen more as a social science discipline rather than a science of engineering (Avison and Elliot 2006). IS has drawn from a large “diversity of theory from reference disciplines, including economics, mathematics, linguistics, semiotics, ethics, political science, psychology, sociology and statistics, along with computer science” (Avison and Elliot 2006, p. 8). We agree it is important that

ITT can continue to discuss the “hard” issues drawing from computer science, but is also perfectly placed to research the “soft” issues by drawing from IS. For example, using anthropological approaches to study IT (Avison and Myers 1995). Xiang, Fesenmaier, and Werthner (2020) claim that ITT is a practical discipline, which may explain the lack of theoretical contribution in many papers. IS also has its origins in problem-solving of practical issues, but the application of practical knowledge does not mean neglecting theory (Hirschheim and Klein 2003).

We do not disagree with topics proposed in Xiang, Fesenmaier, and Werthner (2020) vision, and in particular, the pandemic will require new research perspectives into ITT. However, in our original letter, we suggested a deeper alignment with new theoretical frameworks and methodological approaches that, unfortunately, Xiang, Fesenmaier, and Werthner (2020) have not addressed beyond a few passing statements. We think this is very important for the growth of ITT research, so we reinforce our ideas in this letter.

### **Broaden and Open Boundaries of ITT**

We call for ITT researchers to reexamine the paradigmatic boundaries and broaden the research sphere of ITT. We argue that knowledge production in ITT should go above the confirmatory and reproductive pattern, and engage in more debates through theorizing with other knowledge traditions (Pritchard and Morgan 2007). As we mentioned in our original letter, ITT has several dedicated journals, conferences, and research communities. However, Munar, Gyimóthy, and Cai (2013) argue that these are driven by applied business research agendas with a close circle of actors who hold editorial positions and who perpetuate particular ontological views and act as gatekeepers for knowledge production. As the hub of ITT knowledge production, the aims and scope in JITT and JHTT, as well as the call for papers in the ENTER conference continue to reflect the privilege of applied and business-orientated research. Much focus on the scope and themes are definitional and typological. While valuing the importance of these articles, we believe that we should treat IT artifacts more than just a “black box” (Benbasat and Zmud 2003; Agarwal and Lucas 2005), as technology has been woven into the fabric of tourism (Xiang 2018). It is essential now to critically examine IT in tourism ontologically and discuss how ITT can engage with philosophical and theoretical development.

As key gatekeepers of knowledge production, board members and editorial teams in key journals and knowledge networks should engage more with reflexive self-critique (Hall 2004; Airey et al. 2015) and encourage young academics and alternative voices to debate and reflect the nature of ITT, and engage with other fields and disciplines outside ITT to push the paradigmatic boundaries. Pritchard and Morgan (2007) observe that tourism management communities are too certain in their cozy orthodoxies and resist

engaging with other traditions in the epistemological shift. The maturing of a field is associated with its shifting boundaries (DeSanctis 2003).

COVID-19 and the George Floyd protests both show the intersectional nature of crises that requires a critical, inclusive ITT response that encourages voices that are unrepresented and silenced (Hollinshead 1999). Emerging evidence suggests that the impact of race and income inequalities may result in higher death rates for minorities from COVID-19 (Kirby 2020) and law enforcement encounters (Galea and Abdalla 2020). The responses to these crises have societal implications that require ITT to critically reflect on its ontological foundations. The emerging COVID-19 “new normal” will require new individual and organizational norms around health, equality, travel and communications, for example, understanding E-mindfulness in a post-pandemic world (Stankov, Filimonau, and Vujičić 2020), and a recent call for papers in a special issue in “Digital Technology, Tourism and Geographies of Inequality” in *Tourism Geographies*. Beyond micro-level customer/provider routines, researchers may wish to challenge the growth assumptions inherent in the current business and management focus of ITT which can have negative environmental and social impacts (Prideaux, Thompson, and Pabel 2020). As we seek to reopen national borders closed by COVID-19 to tourists (<https://reopen.europa.eu/en>), the future ITT research may incorporate noncapitalist growth perspectives such as eco-feminism that seeks to jointly address the exploitation of both women and the environment that can result from increasing visitor numbers (James, Condie, and Lean 2019). Similarly, the issues of social justice that have sparked global protests have encouraged organizations to reflect on their societal role. While technology in ITT has been championed as emancipatory for individuals, organizations, and institutions, ITT researchers have paid less attention to the unethical use of technology by enterprises (such as dark patterns) (Harviainen, Paavilainen, and Koskinen 2019) or its role in facilitating discriminatory practices (Ahuja and Lyons 2019). Reflexive, critical ITT research may begin to explore and address the interconnected nature of social, digital, and economic inequalities in Tourism.

Positioned as an interdisciplinary field, ITT is currently a domain in which technology, innovation and management theories are applied. However, there is little evidence that ITT research advances the knowledge and influences the discourse in the field of technology, innovation, and management. Although we acknowledge some ITT studies are published in the disciplines of computer science and information systems, most ITT studies are still predominantly published and presented in tourism journals and conferences. To challenge this unequal power dynamic in ITT knowledge production, ITT researchers should go beyond only publishing and presenting in the tourism field. This not only helps to strengthen the awareness and recognition of ITT research in other knowledge disciplines, but also



allows ITT researchers to engage in theorizing and contributing to a broader knowledge by focusing on the dynamic and hybrid togetherness of tourism and IT artifacts in an embedded social and cultural context, thereby enabling neighboring disciplines to learn from each other (Davies, Manning, and Söderlund 2018). Furthermore, we encourage researchers to initiate and create environments outside the tourism field for ITT research to flourish. This includes proposing ITT special issues in prestigious journals, dedicated ITT conference tracks in established conferences in relevant knowledge disciplines, and collaborations between fields at both individual and organizational levels. We are pleased that there are some attempts at this, for example, a special issue on tourism scale development in the *Journal of Business Research* (2020), and we encourage ITT scholars to propose more in other disciplines.

In the past two decades, we witnessed a growing number of researchers who have reached beyond the hegemonic (post)positivist domain and engage with a critical lens in understanding gendered embodied experiences, political and ethical issues, social justice, and (in)equality (Ateljevic, Pritchard, and Morgan 2007). ITT researchers and gatekeepers should look beyond the repeating and privileged area (Hollinshead 1999) and widen the gaze into the “world of ITT,” and reflexively critique their own situatedness and social practices that shape the knowledge force-fields (Tribe 2006).

## Methodology and Theorizing

While Xiang, Fesenmaier, and Werthner (2020) encouraged ITT alignment with computer science (we do not disagree), it is important that neighboring disciplines that have a joint interest in similar topics learn from each other to encourage cross-fertilization and collaboration between research disciplines (Davies, Manning, and Söderlund 2018). ITT and IS both have a joint interest in IT, and to encourage collaborative learning and cross-fertilization, Davies, Manning, and Söderlund (2018) encourage the use of meta-theories—“theoretical framework or paradigms with generic and reflexive qualities that prompt scholars to question established assumptions” (p. 971). Munar, Gyimóthy, and Cai (2013) listed some potential meta-theories for ITT research, and we advocate for some additional meta-theories that we argue could easily be aligned with ITT. For example, affordance theory (Gibson 1977; Leonardi 2011), sociomateriality (Orlikowski and Scott 2008) structuration theory (Giddens 1984), actor–network theory (Latour 1987), and practice theory (Feldman and Orlikowski 2011). There is also a Wiki that lists further theories used in IS research (Larson and Eargle 2015), which includes theories used in critical, interpretive, and (post)positivist research, and we urge ITT researchers to draw further from these theoretical perspectives. By doing so, it is important for ITT to remain rigorous and use concepts from other disciplines critically (Avison

and Elliot 2006), adapt theories (Truex, Holmström, and Keil 2006) for the ITT perspective, and engage with experts from other disciplines (Davies, Manning, and Söderlund 2018).

Pourfakhimi, Duncan, and Coetzee (2019) and Pourfakhimi et al. (2020) argue that the issue of theory has not been solved in ITT research. They argue that eTourism technology acceptance has largely been relying on a narrow group of early classic cognitive theories, for example, TAM and UTAUT. This narrow focus not only leads to poor theoretical contributions with confirmatory results but also impedes the ground-breaking insights that push paradigmatic boundaries of the field. The progress of knowledge production in eTourism and technology acceptance has fallen behind in its fundamental fields (Gretzel 2011), including tourism.

Xiang, Fesenmaier, and Werthner (2020) disagreed with our methodological vision, despite this being earlier advocated by Gretzel (2011) who argued for “methodological rethinking”; to move away from one-off and one-context research, and advocate for more replication or systematic expansion of existing theories, as well as longitudinal studies. We agree with Gretzel (2011) and provide our ideas for methodological rethinking here. For example, Munar and Bødker (2014) discussed design-related issues through a critical lens. ITT researchers can draw on IS design science methodologies (e.g., Hevner et al. 2004; Peffers et al. 2008) or including longitudinal studies (Gretzel 2011) by using ethnographically informed design science (Baskerville and Myers 2015). There are other methodologies that we believe could add alternative voices for ITT scholars, for example, ethnography (Myers 1999), critical ethnography (Myers 1997), interpretive studies (Klein and Myers 1999), critical studies (Myers and Klein 2011), grounded theory (Urquhart 2012), action research (Baskerville and Myers 2004), visual methods (Whiting et al. 2018), multimethod research designs (Mingers 2001), or from other areas of tourism research such as LEGO® Serious Play® (Simon, Neuhofer, and Egger 2020).

Methodologies that explicitly incorporate context have been used to develop evolutionary/co-evolutionary theory that goes beyond typology/classification. More recently, these approaches have been extended in the IS domain to incorporate the growing volume of trace data to build theory that attempts to explain digital socio-technical phenomena (Benbya et al. 2020). We further emphasize that many of the methodologies stated above have been developed from an IS perspective, but we believe that ITT researchers could further develop them from the unique perspective that tourism can offer. In a related argument, these methodologies also make the process of theorizing explicit. IS has debated the nature of theory, the process of theorizing, and more broadly the role of theory in the discipline (Siponen and Klaavuniemi 2019); ITT has not yet done so.

We believe that for the ITT field to grow and flourish, these issues need to be solved. We made some suggestions in

our original letter, many of which follow on Gretzel (2011) who, drawing from Tribe (2008), urges for a critical theory approach to ITT and broader use of theoretical perspectives from other disciplines such as sociology. We further urge that because IS research already has a long history of drawing from sociological, anthropological, and psychological theories (among others) in examining IT artifacts, it is uniquely placed for ITT to draw on these insights and embrace them into a tourism perspective. We acknowledge that the wider tourism research has drawn from these disciplines, but the difference is that IS draws on these disciplines to understand issues related to the IT artifact. Adopting this approach can expose ITT researchers to new ways of thinking, identify new theoretical or methodological resources, enhance or challenge existing tourism theory, or set a new tourism research agenda (Kock, Assaf, and Tsionas 2020).

### Knowledge Dissemination

A discussion on developing ITT further necessarily involves a critical examination of knowledge dissemination as well as production. ITT knowledge is not only shared via research artifacts and interactions but via undergraduate and postgraduate courses. The latter is a significant domain to be examined as ITT learners begin the process of developing professional identities that are shaped by subsequent practice. Emerging work in sustainable tourism recognizes the value of developing learners as citizens, which may contrast with the customer–supplier dyad that underpins extant ITT research (Boluk, Cavaliere, and Duffy 2019; Johnson and Morris 2010). Agarwal and Lucas (2005) have argued that established academics are successful because they are able to publish similar studies and, therefore, train their doctoral students to do the same. There is no incentive to change because it is hard to shift focus without journals calling for different kinds of papers. Therefore, following from Agarwal and Lucas (2005), we argue that ITT editors should encourage nontraditional ITT theories and methodologies (some we mentioned above), and to encourage doctoral students to learn both traditional and nontraditional approaches. Furthermore, similar to IS, ITT can develop guidance for ITT doctoral students to develop high-impact and high-visibility research.

Boluk et al. (2019) point out that quality education offers a substructure to achieve sustainability and offer a framework for the development of critical tourism citizens—a guideline that could be applied also to ITT education in order to foster criticality among its students. Accordingly, strategies for critical education should focus on *critical praxis*, *critical positionality*, and *critical reflection*. Critical praxis refers to bringing critical topics, dialogue, and reflection into real-world situations, forcing students to uncomfortably confront their own behaviors (p. 876) in domains such as gender, race, and class. Critical positionality refers to an examination of power, privilege and position (p. 875)—*why one thinks in*

*a certain way*—engaging with issues such as Western-centric academia and social and technological inequalities, which has been debated in IS (Bosch 2017) but not ITT. Finally, Boluk, Cavaliere, and Duffy (2019) propose critical reflection as an outcome of the discussion of critical topics. For example, ITT, like other business-oriented domains, is largely embedded in tacit assumptions of capitalism and neoliberalism, where production and consumption are generally favored over critical reflection (Niewiadomski 2020). Future ITT educators need to encourage students to actively consider their critical positioning, supporting their development as reflective ITT researchers and practitioners, aware of issues such as institutional and power structures. This process can be supported by the development of a body of critical ITT scholarship that realizes its interdisciplinary potential.

### Conclusion

In this article, we responded to Xiang, Fesenmaier, and Werthner (2020) and further elaborated on our ideas for rethinking knowledge creation in ITT research. We reemphasize our original positions in Cai and McKenna (2020) that ITT should not ignore the rich and diverse nature of IS research and engage in a wider theoretical and methodological development. We also set out an agenda for pushing the paradigmatic boundaries of ITT research in relation to knowledge production and research topics. In addition, to flourish as a field, ITT research must engage more with theoretical and methodological advancements, alongside knowledge dissemination practices. We hope this discussion will contribute to more inclusive and hopeful development of ITT research.

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