



Empirical Research Article

Getting Smart? A Research Note into Smart Tourism Curriculum and Implications on Generation Alpha and Beta

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Abstract

This research note probes the largely ignored sphere of smart tourism curriculum as destinations and institutions seek to develop graduates ready to embrace the demands and challenges of future work environments where technology has a ubiquitous presence. This knowledge gap is somewhat surprising, even as destinations progress towards smart tourism futures, without necessarily clarifying what human resources need to possess in the coming decades. Drawing from available smart tourism curriculum across the globe, and emergent trends associated with Generation Alpha and Beta, this research note paints a timely picture of how smart tourism curriculum should be designed and developed to meet the needs of industry and consumer demands and expectations.

Keywords

smart tourism education; future workforce; smart human resource management

1. Introduction

The term smart tourism encapsulates a technologically mediated and symbiotic environment with humans to derive evidence-based knowledge to guide decision-making within tourism (Gretzel et al., 2015). Its popularity as witnessed in an emerging body of tourism literature can be attributed to a combination of technological advances, and consumer trends to adopt and interact with such tools across a range of platforms, such as websites, social media, artificial intelligence, and big data (Ardito et al., 2019). From a supply-side perspective, smart tourism requires a smart Destination Management Organisation (DMO) leadership, whereby it necessitates the DMO to be collaborative, adaptive and value-creating (Gretzel, 2022). Destinations seek to embrace smart tourism capabilities to reduce inefficiencies and to develop competitive advantages over other destinations (Kontogianni & Alepis, 2020). It is for this reason that current literature has sought to unpack smart tourism across a range of destinations, tools, and benefits to both destinations, the tourism industry, and its consumers (inter alia Gelter et al., 2021; Otowicz et al., 2022).

However, despite its merits, smart tourism detractors point to the increasing alienation between traditional offerings of tourism to feature human-to-human interactions and overshadowed or replaced with machines or other technologies to raise ethical concerns (Chen et al., 2022; Femenia-Serra et al., 2022). Smart tourism affordances have also been scrutinized, as it pits destinations against one another, where those who have access to, and leverage on such opportunities are generally far more advanced along the continuum of "smartness" as compared to

others that may be less endowed with smart tourism infrastructure or financial might (Borges-Tiago et al., 2022; Wang et al., 2022). Scholars argue that smart tourism merely exacerbates the digital divide, which is already evident in the case of virtual tools accompanying destinations over the course of the COVID-19 pandemic (Law et al., 2022; Sun et al., 2022).

Another glaring omission from smart tourism literature is perhaps what constitutes a smart tourism curriculum, or what Gretzel (2021) argues as the smart tourism mindset, especially when more and more university graduates enter the workforce of the future. It is also a timely conversation to have, as the next two age segments - Generation Alpha (those born between 2010 and 2024), and Generation Beta (those born between 2025-2039), will feature in the smart tourism landscapes of 2050 and beyond. Therefore, drawing from available smart tourism curriculum across the globe, and emergent trends associated with Generation Alpha and Beta, this research note paints a timely picture of how smart tourism curriculum should be designed and developed to meet the needs of industry and consumer demands and expectations.

2. Characteristics of Generation Alpha and Beta

Generation Alpha and Beta are classified as those born between 2010-2024, and 2025-2039 respectively, according to McCrindle Research (2020). As some of these individuals are yet to be born, it is unsurprising that there is a dearth of academic literature to paint a nuanced insight into what the future is like for such generations. Nevertheless, Smith (2021) postulated that the

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future of higher education will need to leverage technological capabilities and social presence principles to support student learning trajectories, and design assessments that reflect the future of work. However, Smith's (2021) propositions remain focused on the technical aspects of smart/digital tourism futures, and not necessarily the human-machine interaction *in-situ*. For this reason, a range of grey literature (e.g., websites, books, and industry reports) are sourced to examine how Generation Alpha and Beta are likely to embed themselves within smart tourism environments, and how current developments should also be aligned with their needs.

Generation Alpha - many of whom are already completing their primary education, are very much comfortable with having technology surrounding their everyday life, and perhaps the first generation where almost everything operates on-demand - movies, food, music, transport, accommodation etc (Pinsker, 2020). It is for these characteristics that market research predicts and pays close attention to consumer trends of Generation Alpha, urging brands and companies to connect with these individuals and win them over based on moral and emotional ties, rather than purely functional attributes of products and services (Gaid, 2023; Ryan, 2023). In contrast to Generation Alpha, Generation Beta is instead characterized by four attributes - blurred work-life boundaries, rapidly evolving mindsets, highly technologically saturated, and demonstrates elevated levels of activism (Smith, 2020). Indicative evidence suggests that both generations are likely to be comfortable in employing technology, and in co-creating knowledge and solutions in a socially constructed manner (Cauchefer, 2022; Tigar, 2022). Crucially, Generation Alpha and Beta workforce want greater autonomy and purpose in their employment, and pushing their own boundaries (Schawbel, 2020).

Despite interesting differentiating characteristics of Generation Alpha and Generation Beta, both generations share similar challenges. Market research indicates that while they are generally more formally educated, both generations are less adept at establishing hands-on competencies, assessing risk, planning and completing goals, and other practical skills (McCrinkle Research, 2020). Additionally, both generations are thought to experience higher levels of anxiety and stress. Various studies have reported a direct relationship between overexposure to technological devices and the negative mental well-being of individuals. While information communication technologies (ICTs) have significantly improved work processes and information sharing, studies show how such information overload can cause harmful effects on the growth of children. And in this case, the children of Generation Alpha and Generation Beta will not only have a more sensitive mental well-being but also experience a shorter attention span. This begs the question as to how future smart tourism tertiary education can better support both generations and seek to educate them with the necessary skills and knowledge.

As such, knowing about Generation Alpha and Beta alludes to how these individuals learn and acquire knowledge. What will be more important is how they behave/operate in the workforce, and more importantly, for this research note, in a smart tourism environment.

3. Smart Tourism Curriculum

In this research note, a smart tourism curriculum is broadly defined as higher educational courses that address smart tourism objectives both in terms of technical capabilities, and other soft skills such as problem-solving and working alongside robots for instance. As Boes et al. (2016) highlight, smart tourism requires destinations to possess "hard smartness" and "soft smartness." While "hard smartness" refers to the technological infrastructure and data capabilities of a destination which leads to the (co-)creation of value, "soft smartness" emphasizes the human aspect, i.e. social capital (collaboration) and human capital

(knowledge and skills) (Boes et al., 2016). Therefore, smart tourism curriculum should reflect these industry requirements to ensure the future workforce of smart tourism possesses the necessary skills and knowledge. Despite the vast literature on smart tourism destination development and management, there is a lacuna of papers other than the work of Femenia-Serra (2018) that explores the higher education landscapes of smart tourism. This is somewhat surprising, as smart tourism is not intended to displace the human factor within the industry, but instead, co-exist and leverage human-technological capabilities towards desired outcomes. For this reason, it is important to take stock of what currently exists, at least in the English-speaking domain, of what constitutes smart tourism curriculum - similarities, strengths, and areas of improvement.

4. Methods

To gain a snapshot of smart tourism curriculum available in the public domain, a Google search of smart tourism course/subject outlines was undertaken in early March 2023. The search process identified 16 smart tourism courses, of which 6 did not have specific content over the semester. Nonetheless, the remaining 10 courses are analyzed for their nomenclature and a summary of these is presented in Table 1.

5. Results and Discussion

Based on the results of the Google search, the results of the smart tourism curriculum are presented in Table 1. From Table 1, a key observation is that smart tourism curriculum is located in just three continents - Europe (6 institutions), Asia (3 institutions) and North America (1 US institution). This perhaps suggests that smart tourism in higher education is very much in its infancy, or that there are barriers to incorporating smart tourism domain knowledge within universities, such as a lack of faculty expertise, or costs of accessing big data for example. Nonetheless, smart tourism curriculum across the ten institutions is mostly concerned with introducing the landscape of smart destinations, tourists and the management of such developments, and correspondingly, designing smart tourism experiences and elucidating methods associated with smart tourism research projects. Less than half of the curriculum reflects ethical issues with smart tourism, sustainability, or marketing-related foci.

Table 1. Scope of smart tourism relevant courses within selected universities

Institution	Smart Tourism Destinations (Including Field Trips)	Innovation and Technology, Experience Design	Smart Planning/Research Methodology	Digital Marketing	Communication in Digital Tourism	Corporate Responsibility and Public Rights	Apps and Social Networks (Big Data & IoT)	Energy Management	Climate and Environmental Risks	Smart Tourism Infrastructure
University of Nebrija	✓	✓	✓	✓						
Universitat de les Illes Balears			✓		✓	✓	✓	✓	✓	✓
Universitat de Barcelona	✓		✓			✓				
Vidzeme University of Applied Sciences	✓	✓							✓	✓
Gingko College of Hospitality Management	✓	✓	✓	✓						✓
Munich University of Applied Sciences	✓	✓	✓		✓	✓	✓			
University of North Texas	✓	✓	✓			✓	✓			
Macau University of Science and Technology	✓	✓	✓	✓						
Yeditepe University	✓	✓			✓	✓	✓	✓	✓	✓
Macau Institute for Tourism Studies	✓			✓					✓	✓

However, Table 1 also reveals what smart tourism curriculum, at present, does not possess. For instance, key domains such as human resource and finance are conspicuously absent in Table 1. These key aspects of any organization need to be in the future curriculum as they are fundamental to address under-investigated issues such as:

- What skill sets are needed for individuals to work within smart tourism ecosystems?
- How do we prepare graduates to work with robots, Artificial Intelligence within an Internet-of-Things landscape?
- In what ways can we undertake a cost-benefit analysis in employing smart tourism?
- Can small and medium enterprises build smart tourism capabilities within their limited resources and finances?

Next, this research note will discuss the implications of Generation Alpha and Beta, and how to overlay smart tourism in order to leverage the potential of this future workforce.

The implications of this research note reveal that more needs to be done to prepare students for smart tourism careers, building on what Table 1 has revealed in terms of higher education curriculum in smart tourism. In addition, a glimpse into the futures of Generation Alpha and Beta warrants an introspection into how smart tourism environments are formulated that give greater control to such individuals, even though it may appear that smart tourism operates in a (less/un)moderated manner. Then, from an organizational perspective, determining what to place in a job advertisement, such as this one from Dublin needs to be carefully articulated. This would prompt how we consider strategic human (and machine) resource management, especially when the jobs of 2050 would be filled by more than 2 billion individuals from Generation Alpha and Beta, as Wallace (2022) estimates.

Additionally, smart tourism curriculum should consider more effort to develop greater critical thinking and hands-on competencies. As Generation Alpha and Generation Beta have grown up with digitalization all around, teaching content should incorporate practical skills such as programming and risk assessment. Curriculum assessment on the other hand should aim to develop students' "soft smartness" skills such as planning and goal completion, collaboration and communication (Boes et al., 2016).

Furthermore, although the overview of the smart tourism curriculum provides an interesting snapshot of the content taught for smart tourism, little is known about the delivery of content. As highlighted before, the smart tourism curriculum content must meet the needs of the tourism sector. Meanwhile, the delivery of the smart tourism curriculum must meet the needs of Generation Alpha and Generation Beta students. Market insights indicate how both generations experience higher levels of anxiety and stress while also demonstrating a far shorter attention span (McCrinkle Research, 2020). Studies suggest blended learning of digital and face-to-face learning which incorporates elements of creativity and innovation could be considered to introduce an element of fun and help students to better focus (Ziatdinov & Cilliers, 2021). As such, a more visual, engaging and multimodal approach should be used in smart tourism curriculum for future technology-driven generations.

Additionally, a practical example of effective delivery is the use of the "whole-to-parts" approach when teaching Generation Alpha and Generation Beta. Smart tourism is embedded in a complex network of stakeholders, interconnected with technological devices. Balancing such a complex ecosystem may be confusing for a generation that is considered to be lacking in understanding risk and goal completion. In the "whole-to-parts" approach, students are exposed to the overall ecosystem before delving into the subject matter (Akasah & Alias, 2010). A clear map is made to present the interconnectedness between each component and curriculum of smart tourism. This approach has

been applied in teaching complex systems in the engineering field (Akasah & Alias, 2010). Considering the multi-layers of technology and human interaction in smart tourism, the "whole-to-parts" approach could also be incorporated in teaching smart systems in tourism. An approach that is thought to simplify the learning of complex systems and ultimately help support Generation Alpha and Generation Beta in their smart tourism education.

6. Conclusion, Limitations, and Future Studies

In conclusion, the topic area of how smart tourism curriculum can be designed for the needs of the future tourism workforce i.e. Generation Alpha and Generation Beta are limited. Therefore, this research note sought to understand how smart tourism curriculum should be designed and developed to meet the needs of industry and consumer demands and expectations. Smart tourism capabilities are important to enhance destination efficiencies and develop advantages over other destinations. Elements such as technological infrastructure should be developed alongside the human and social capital of smart tourism destinations. An overview of the existing smart tourism curriculum suggests that more needs to be done to prepare students for smart tourism careers. For instance, while most smart tourism curriculum focus on the general management and design of smart tourism experiences, there is far less emphasis on the ethical, financial and sustainability issues of smart tourism. Reflecting on the projected characteristics of Generation Alpha and Beta, future smart tourism curriculum should also focus on the development of practical (e.g., programming and risk assessing) and personal (goal completion, collaboration and communication) skills.

This research note presents an initial understanding of the smart tourism curriculum landscape. While it presents an overview of the content taught related to smart tourism in tertiary education, it omits the delivery approach. Delivery of knowledge based on the personalities and characteristics of students is crucial to ensure students are more receptive to new knowledge. This research note suggests the use of gamification and the "whole-to-parts" approach in delivering smart tourism curriculum to Generation Alpha and Generation Beta. Nonetheless, a deeper analysis is required to examine whether the current delivery methods meet the psychological requirements of Generation Alpha and Generation Beta. Future research should explore the delivery methods of smart tourism that would be most effective towards Generation Alpha and Generation Beta. Furthermore, this research note assumes that these Generations may even decide to pursue formal tertiary education. Current trends of accessible and customizable online courses may gain traction amongst future generations. Therefore, future research could examine how smart tourism education could be strategized to become more adaptive and flexible to meet the mobile needs of Generation Alpha and Generation Beta.



Declaration of competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this research note.

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