ENTER 24
@İzmir, Türkiye

PROCEEDINGS

ENTER24 Ph.D. Workshop

16 January 2024

Editors:

Jelena Mušanović

Emre Ozan Aksöz

ALKÜY 006

Proceedings of the ENTER24 Ph.D. Workshop

16 January 2024

Organized by:

The International Federation for Information Technology and Travel & Tourism

Editors:
Jelena Mušanović, University of Rijeka, Faculty of Tourism and Hospitality Management
Emre Ozan Aksöz, Anadolu University, Faculty of Tourism

ISBN: 9 7 8 - 6 0 5 - 7 4 5 8 1 - 6 - 2

2024

Publishers: ALKÜY

ALKÜY 006

Preface

The ENTER Ph.D. Workshop serves as the antecedent event for the annual ENTER International eTourism Conference, meticulously organized by the International Federation for Information Technology and Travel & Tourism (IFITT). Annually, this workshop affords doctoral students a distinctive opportunity to actively engage in the presentation and discourse of their research with peers and eminent scholars within the field. Encouragement is extended to doctoral students at all phases of their academic journey, encompassing both initial stages and those on the verge of completion. The ENTER Ph.D. Workshop's particular significance, this comprehensive workshop spans an entire day, providing participants with the invaluable prospect of refining their research concepts and structuring their work within a critical yet supportive milieu. This refinement is facilitated through feedback channels from mentors, experts, and senior researchers embedded in the global IT and Tourism research community. Furthermore, the workshop serves as an insightful preview into the prospective trajectory of eTourism research.

Consequently, on behalf of IFITT, we take pride in presenting the Proceedings of the ENTER24 Ph.D. Workshop, as we firmly believe that these scholarly contributions epitomize the forthcoming generation of eTourism research. These submissions, encapsulating diverse research domains such as smart tourism, technology development, social media analysis, and contemporary issues in eTourism, not only capture a wide spectrum but also address the ramifications and applications of cutting-edge technologies affecting the global landscape of travel and tourism. The expectation is that these research themes will persist in development, and the emerging scholars will continue propelling the trajectory of eTourism study.

The fruition of the Proceedings and the workshop itself is indebted to the unwavering support of an exceptional community. Foremost, sincere gratitude is extended to the members of the Scientific Committee, whose dedication of time and expertise during the review process has been invaluable. Additionally, heartfelt thanks are conveyed to senior experts who volunteered their mentorship to students and contributed to the workshop program. Equally, profound appreciation is extended to Jelena Dorčić, the ENTER24 overall chair, her team, and all IFITT board members for their indispensable support.

Most importantly, we extend warm congratulations to all students who submitted their research proposals to the ENTER24 Ph.D. Workshop. Recognizing them as the prospective leaders of the IT and Tourism research community, we convey our best wishes for their continued success as they diligently navigate the culmination of their doctoral studies and embark on the next captivating phase of their careers.

Jelena Mušanović, University of Rijeka, Faculty of Tourism and Hospitality Management
Emre Ozan Aksöz, Anadolu University, Faculty of Tourism

Scientific Committee

Ana Čuić Tanković, University of Rijeka

Ante Mandić, University of Split

Ayşe Collins, Bilkent University

Çağıl Hale Özel, Anadolu University

Dandison Ukpabi, University of Jyväskylä

Dorin Paul Bac, University of Oradea

Eda Avcı, Dokuz Eylul University

Elvir Čižmić, University of Sarajevo

Emrullah Erul, İzmir Katip Celebi University

Engin Bayraktaroğlu, Anadolu University

Eva Martin Fuentes, University of Lleida

Francisco Femenia Serra, Complutense University of Madrid

Gül Erkol Bayram, Sinop University

Gürhan Aktaş, Dokuz Eylül University

Josep Ivars-Baidal, University of Alicante

Matias Thuen Jørgensen, Roskilde University

Miyoung Jeong, University of South Carolina

Pedro César Martínez Morán, Comillas Pontifical University

Rosanna Leung, National Kaohsiung University of Hospitality and Tourism

Seda Sökmen, Anadolu University

Seden Doğan, Ondokuz Mayıs University

Songphon Uthaisar, Mahasarakham University

Table of Content

Avatar-based customer journey design in the Metaverse platform

Baolin Deng[1][0000-0003-2868-3141], IpKin Anthony Wong[2][0000-0003-4597-2228] and Hongbo Liu[3]

[1] Sun Yat-sen University, Tang Jia Wang, Xiangzhou, Zhuhai, China
dengblin@mail2.sysu.edu.cn
[2] University of Macau, Avenida da Universidade, Taipa, Macau, China
anthonywong@um.edu.mo
[3] University of Surrey, Guildford, United Kingdom.
hongbo.liu@surrey.ac.uk

Abstract. Metaverse tourism is blurring the boundaries between the virtual and physical worlds. Among the core technologies in the metaverse world (e.g., Avatar, Virtual reality, Augmented reality, NFTs, etc.), the avatar has the potential power to revolutionize the customer experience. Destination management organization (DMO) can boost customers' immersion through effective avatar customer journey design (ACJD) in the metaverse world. Yet, there is a lack of understanding of how practitioners view an effective ACJD in the metaverse world. This study aims to explore the role of avatars on customer journey design in a metaverse tourism program (e.g., Dunhuang) from practitioners' perspectives through a qualitative study. This study advances the theoretical understanding of metaverse tourism in the tourism literature and provides important implications for the tourism industry on how to design tourist experiences in metaverse tourism.

Keywords: Avatar marketing, customer experiences, customer journey design, content analysis

1 Introduction

New technologies are enabling whole new genres of experiences [1]. Recently, the emergence of the metaverse has set the business world abuzz with its potential to re-shape an ecosystem for new products, services, and emerging synthetic customer experiences [2]. At the same time, there is a huge gap between what the metaverse is and what opportunities it offers to practitioners and academics. The tourism and hospitality industry is no exception, and the metaverse has huge business potential to affect the tourism and hospitality industry in various ways. Encouraged by the development of metaverse programs in the hospitality industry — a virtual environment where all kinds of smart technologies (e.g., Avatar, VR, MR, XR, NFTs, etc.) are integrated to create immersive experiences.

The application of metaverse in tourism and hospitality is still in its infancy. Little is known about the impacts of the metaverse on tourism and hospitality management and

marketing. Studies have begun to conceptualize and predict the impact of the metaverse [3]. For example, Dwivedi, Hughes [4], along with Gursoy, Malodia [5], have discussed the impact of the metaverse on the customer journey. Customer journey refers to a journey involving a stream of purchase stages (i.e., pre-purchase, during-purchase, and post-purchase) and touchpoints through the consumption process [6]. The traditional five-step customer journey ranging from awareness to purchase probably is no longer applicable to the metaverse context. Instead, the primary characteristic of the metaverse experience journey is "a stream of engagement" in which customers can interact with metaverse-scape and have immersive experiences. Most of the studies in the field of metaverse have focused on Conceptualizing its impact on the customer journey[4, 5], with lacking empirical studies on the impact of the metaverse on the customer journey.

As core technology in the metaverse, avatar design is a fundamental base in the metaverse world [7]. Moreover, the application of avatars in digital tourism has become popular. However, less research attention has been paid to the interesting phenomenon. Moreover, future research should be done from the view of consumers and practitioners about avatar design in the digital tourism world [3]. As such, this study examines the use of avatar design in the tourism and hospitality industry and aims to understand better how this technology can transform customer journey management. The research seeks to answer the following research questions:

Research Question 1: In what ways are avatars currently being used in customer journey design in the metaverse tourism world?

Research Question 2: What are the subsequent critical implications of this on destination management organization?

The aim of this study is to make a valuable contribution to the existing body of research. First, we provide a theoretically sound conceptualization and operationalization of effective avatar customer journey design (ACJD) through a metaverse platform. Accordingly, to the best of our knowledge, this is the first study to examine what constitutes an effective metaverse platform design in the context of digital tourism. Specifically, we identify ACJD as a multidimensional construct that manifests itself in five complementary capacities: (1) thematic nature of the touchpoints (destination brand- owned), (2) coherence of touchpoints (3) consistency of touchpoints, (4) personalization of touchpoints, (5) gamification of touchpoints.

2   Literature Review

Current customer experience journey research focuses on four types of touchpoints [6]. They are 1) brand-owned touchpoints, including all brand-owned media such as advertising, websites, and loyalty programs; 2) customer-owned touchpoints, referring to customer behaviours as part of the overall customer experience; 3) partner-owned touch-points, referring to customer interactions during the experience that designed by the firm and partners including marketing agencies, multichannel distribution partners 4) social/external touchpoints, referring to interactions with other customers, peer influences, independent sources of information, environment. Based on current

literature ontouchpoints management, and its relevance to the research, there are three types of customer touchpoints for the avatars in the metaverse tourism world including brand- owned, customer-owned, and socially owned touchpoints. Therefore, avatar customer journey design is defined as the extent to which consumers perceive multiple brand- owned, customer-owned touchpoints, and socially owned touchpoints in interacting with the avatar of the travel digital world, which is designed in a themed, coherent, connected, personalized, and gamified way. Therefore, the proposed dimension of avatar customer journey design includes brand-owned touchpoints (Thematic nature of the touchpoints, coherence of touchpoints, and Connectivity of touchpoints), customer-owned touchpoints (Personalization of touchpoints), and social touchpoints (Gamification of touchpoints). The definitions of these different types of touchpoints are as follows.

1) Thematic nature of the touchpoints. It refers to the core touchpoints that addressthe theme of a travel destination brand, promising customers a certain lifestyle or activity with the help of multiple avatar touchpoints.
2) Coherence of touchpoints. It is defined as a brand identity element that is consistent across multiple touchpoints to ensure a similar loyalty-enhancing experience response throughout the customer's touchpoint journey.
3) Connectivity of touchpoints. It refers to multiple touchpoints across virtual and physical environments of tourist attractions to achieve seamless connectivity to each other.
4) Personalization of touchpoints. It refers to multiple touchpoints built on the sat isfaction of individual subjective needs of the travel service journey.
5) Gamification of touchpoints. It is defined as a design that adds gamification elements across multiple touchpoints to ensure a socially enhanced emotional responseduring the customer's touchpoint journey.

3   Methodology

A qualitative research approach will be used to answer the research questions. In-depth interviews will be conducted to collect data from practitioners in the tourism and hospitality industry in China who have experience in avatar design. Purposive sampling, which refers to the selection of participants that are most likely to access appropriate and useful information [8], will be used in selecting the target participants. The target interview participants will be recruited from Tencent Culture and tourism, which is one of the departments responsible for the digital tourism industry in Tencent. Workers from Tencent Culture and tourism have designed all kinds of digital tourism projects including avatar design with destination management organizations (e.g., Palace Museum, Dunhuang Academy. This study will mainly focus on workers who have experience with any avatars or virtual characters to study the avatar experience journey design (touchpoint management) of the metaverse tourism world from practitioners' perspectives.

The interview questions will be guided by the research questions. 1) Which kindsof avatar scenes and touchpoints in the customer journey you designed? Please explain

each of them in detail. 2) What do you care about more about live streaming between content quality (brand logo and content, attractions, and knowledge), personalization and interactivity (gamification, interaction with avatars, and other customers) when you design an avatar-based customer journey? 3) For your design on the content quality of the avatar customer journey design, what are you concerned about the most, list by importance, and explain why. (Such as brand logo, brand content, and attractions); 4) For your design on personalization of the avatar customer journey design, what do you concern the most, list by importance and explain why; For your design on the interactivity of the avatar customer journey design, what do you concern the most, list by importance and explain why. (Such as gamification, interaction with avatars and other customer) 5) What do you think that avatar design on core scenes or touchpoints through the customer journey inspires potential tourists to intention to visit, positive emotion and attitude?

The interview will be conducted from February to March both online and offline. The audio will be recorded upon consent from the participants. The data will be analysed using a content analysis. The data will be coded following the systematic classification process recommended by [9]. We are interested in searching for categories of ACJD practitioners perceive through a multi-round coding process. Specifically, we will focus on open coding to develop touchpoints code during the first cycle of coding, as researchers read through each review thoroughly. Abstract codes emerge from the repeated examination of the reviews. Then, we attend to axial coding in the second-cycle scheme. This cycle cantered upon merging similar codes into categories in which the coders "fit the piece of the data puzzle together" [10]. The whole process will be accomplished by two coders. Finally, we will adhere to selective coding [10] to connect categories together to identify a core concept: avatar customer journey design. To instil credibility and trustworthiness in the research, we will rely on Homburg, Jozić [11]'s customer journey design and mapping strategy during the improvisation of the research framework to build a clear linkage among avatar touchpoints, avatar experiences, and outcomes of avatar customer journey design. Also, several approaches will be used to improve the credibility and trustworthiness of the study's findings, including triangulation and peer debriefing. Enhancement of researcher triangulation will be accomplished by two independent researchers (the first author and second coders), which hope to guarantee the reliability and consistency of the coding results [12]. Two Peer debriefers were included in the process of review of the study results. The second author will review the data analysis and the results, by providing support and constructive feedback. The coding results were also reviewed by the third author who specializes in qualitative research in digital marketing of tourism and hospitality area.

4   Expected Contributions and Implications

This study, if completed successfully, will make several contributions. It will be the first study to explore the impact of avatar design on customer journey design in the metaverse tourism context. It will contribute to the metaverse tourism literature by

advancing our understanding of virtual tourist experience design in metaverse tourism and by building a conceptual framework for the avatar-based customer journey design in metaverse tourism. It will contribute to the emerging theory of avatar marketing by uncovering which specific dimensions of the avatars' design elements exert the strongest impact on customers' experiences.

Drawing on practitioners' perspectives, this study will offer important implications for tourism and hospitality companies that would like to adopt metaverse technologies in their marketing and customer experience design on how to use avatar design to improve their customer experience, and operational efficiency, as well as maximize their digital resources. Also, for DMOs that serve a lot of tourists, avatars can make it feasible to introduce a segmented, multichannel strategy. By providing tourists chances to engage with avatars through different channels (e.g., social media, live streaming, dedicated app, and tourist destinations), the firms ensure that avatars meet each tourist's unique needs at the right time and right place by designing different avatar customer mapping.

References

1. Pine, B. J., Gilmore, J.H.: The experience economy: Harvard Business Pres (2011).
2. Golf-Papez, M., Heller, J., Hilken, T., Chylinski, M., de Ruyter, K., Keeling, D. I., Mahr, D.: Embracing falsity through the metaverse: The case of synthetic customer experiences. Business Horizons, 65(6), 739-749 (2022).
3. Buhalis, D., Lin, M. S., Leung, D.: Metaverse as a driver for customer experience and value co-creation: implications for hospitality and tourism management and marketing. International Journal of Contemporary Hospitality Management 35(2), 701-716 (2022).
4. Dwivedi, Y. K., Hughes, L., Baabdullah, A. M., Ribeiro-Navarrete, S., Giannakis, M., Al-Debei, M. M., et al.: Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. International Journal of Information Management 66, 102542 (2022).
5. Gursoy, D., Malodia, S., Dhir, A.: The metaverse in the hospitality and tourism industry: An overview of current trends and future research directions. Journal of Hospitality Marketing & Management 31(5), 527-534 (2022).
6. Lemon, K.N., Verhoef, P.C.: Understanding Customer Experience Throughout the Customer Journey. Journal of marketing 80(6), 69-96 (2016).
7. Miao, F., Kozlenkova, I.V., Wang, H., Xie, T., Palmatier, R.W.: An emerging theory of avatar marketing. Journal of Marketing 86(1), 67-90 (2022).
8. Kelly, S. E., Bourgeault, I., Dingwall, R.: Qualitative interviewing techniques and styles.: The SAGE handbook of qualitative methods in health research 19, 307-326 (2010).
9. Hsieh, H. F., Shannon, S. E.: Three Approaches to Qualitative Content Analysis. Qualitative health research 15(9), 1277 – 1288 (2005).
10. Strauss, A., Corbin, J. Basics of qualitative research techniques (1998).
11. Homburg, C., Jozić, D., Kuehnl, C.: Customer experience management: toward implementing an evolving marketing concept. Journal of the Academy of Marketing Science 45, 377-401 (2017).
12. Campbell, J. L., Quincy, C., Osserman, J., Pedersen, O.K..: Coding in-depth semistructured interviews: Problems of unitization and intercoder reliability and agreement. Sociological methods & research 42(3), 294-320 (2013).

Relationship between Digital Transformation and Talent Management

Aksu Akpınar [1][0000-0002-1371-0146]

Dokuz Eylul University, Business Administration
Graduate School of Social Sciences Tınaztepe Campus,
35390 Buca / IZMIR TURKEY
aksu.ak@gmail.com

Abstract. Talent management is of critical value in hotel businesses. In recent years, the importance of the total experience (customer experience + employee experience) approach in customer satisfaction, major fluctuations in the labour markets (remote working, silent resignation, etc.) and the revolutionary digital transformation movement in the global tourism sector have caused the success of talent management to become much more valuable.

All the current evolutions mentioned are actually based on digital transformation and are related to the transition of the global tourism ecosystem to the digital phase within the scope of the new economy. When looking at the relationship between these variables, it is known that there is a relationship between the success of talent management and digital transformation. The importance of the study is that by defining the relationship and dimensions between digital transformation and talent management practices, it is possible to create a structuring that takes into account the needs of talent management practices in structuring digital transformation strategies. The study will serve as a guide to increase the success level of talent management practices.

Studies in the literature generally consider digital transformation as the transition to digital applications in hotel businesses and the subsequent integration of business functions into this change. This study aims to close the gap in the literature by creating a relationship model that focuses on the basic needs of talent management practices and provides design-oriented thinking in structuring the digital transformation strategy.

The purpose of this study is to determine the relationship between digital transformation strategies in hotel businesses and talent management practices within the scope of human resources management.

Keywords: Digital Transformation, Talent Management, Tourism, Hospitality.

1   Problem Statement

In line with the studies carried out, the draft content of the research was developed. In line with the information obtained in the literature review, it is planned to explain the concept of Digital Transformation, its theoretical development, current applications, subheadings, and examples in the hospitality sector in the first part. In the second part

of the research, it is planned to explain the concept of Talent Management, its theoretical development, and applications in hotel businesses.

Main Question

What is the relationship between digital transformation strategy and talent management in hotel businesses?

Sub-Question 1

What should be the approach to the integration of talent management applications when designing a digital transformation strategy in hotel businesses?

Sub-Question 2

How can the success of talent management practices be increased in accordance with the digital transformation strategy determined in hotel businesses?

Sub-Question 3

As talent management practices in hotel businesses change with the influence of internal and external environmental factors, how can the digital transformation strategy adapt to this change?

Determining the role of digital transformation strategies in creating an effective talent management framework through two-way analysis and definition of the relationship expressed and structuring the relationship model will serve as a guide for managers in hotel businesses. With the help of the guide, they will be able to create a mutually beneficial and cyclical relationship by placing the priorities of talent management approaches at the centre of their digital transformation strategies.

2   Literature Review

The literature review has been deepened in the last six months. In this context, basic scientific publications, theses, and reports were examined. WOS, Google Scholar, Dokuz Eylul University and YÖK thesis database were scanned for research purposes. In addition, research was conducted on trends by examining the pages of associations, unions, global organizations, and businesses on the subject. In addition, a review of existing global and local applications was conducted for the application study.

In the systematic literature review article [16], it is seen that the general result of qualitative research conducted in Europe and North America between 2000 and 2020 focuses on the concept of talent management, application results, and training of talents. Talent management in this field is in the early stages of its growth phase, indicating an exponential growth in interest in the field. In the research on the impact of digital transformation on talent management [10], the sample was conducted with 314 Spanish companies that were going through the digital transformation process. The data was obtained through a questionnaire answered by managers. The model was tested with a statistical technical structural equation model, and the result allowed accepting the hypotheses. The organizational changes brought about by digital transformation appear to affect attracting and retaining talent. According to research on digital transformation and hospitality management competencies [5], an integrative framework research has found that digital transformation requires hospitality and tourism organizations to build and maintain digital business capabilities such as digital customer engagement, digital

customer experience management, digital innovation, digital leadership and others.

Talent Management in Turkey has shown that in the context of academic articles published between 2008 and 2018 [6], the articles related to talent management in Turkey have increased significantly since 2014. Within the scope of the articles, it was observed that the most studies were gathered under the sub -theme of the "Talent Management" sub -theme and the number of studies that affecting the talent management was found to be very insufficient.

3   Conceptual Framework

In line with the information obtained as a result of the studies, it is planned to explain the concept of Digital Transformation and its theoretical development under the attached subheadings in the first part of the research. In line with the information obtained in the literature review, in the second part of the research, it is planned to explain the concept of Talent Management, its theoretical development and applications in accommodation businesses with the attached subheadings.

In addition, in the application section, a scale scan was conducted for a quantitative study as a basis for the research. Scales used in similar studies on the subject were selected and examined. The purpose, main question, and findings of the studies in which the scales were used were also evaluated and presented as an annex to the report. By studying the mentioned scales, a suitable scale for the thesis research will be determined.

4   Proposed Methodology

The thesis work is still in the literature screening stage, and it is planned to continue qualitative or quantitative research design studies. In the following six -month period, the research question and method will be clarified and clarified. The research method is planned for the next six months.

With this in-depth scanning study, the scientific knowledge that will structure the content for the basic concepts and theory part of the thesis has been obtained. With scale research, it will be possible to determine the scale on which the research will be conducted in the application part.

The study is planned to be carried out with quantitative methods and survey technique. The population, sample, design, and application details are being studied. In addition, the Swissotel group talent management digital transformation applications to be implemented and the data, programs and reports used will be examined and the final decision will be made under the guidance of the consultant.

It is aimed to complete the writing of the first and second parts. The final decision on the scale will be made and it will be ready for implementation. Additionally, the pilot application for the research part is planned to be carried out in the hotel.

5   Expected Results

It is known that there is a strong positive relationship between digital transformation and talent management. In this study, the Swissotel brand and employees of Accor Turkey Group, one of the international luxury chain hotel enterprises, will be examined. While the development of the current employees on the one hand with the talent management activities, on the other hand, the important work of the employees and more efficient work of the employees will be supported by the results of the research.

References

1. Ababneh, O. M. A., Alnawas, I.: A Novel Prelude to the Talent–Total Quality Management Association Amongst Generation Z: The Case of the Jordanian Hospitality Industry. Journal of Quality Assurance in Hospitality & Tourism, 1-31. (2022).
2. Arthuro, S.: Talent management under conditions of digital transformation in education. Психология человека в образовании, 1(2), 169-175 (2019).
3. Bagheri, M., Baum, T., Ebrahimi, A., Abbasi, A.: Talent management in the tourism and hospitality industry: evidence from Iran. Anatolia, 31(1), 88-98 (2020).
4. Buhalis, D., Leung, D., & Lin, M.: Metaverse as a disruptive technology revolutionising tourism management and marketing. Tourism Management 97, 104724 (2023).
5. Busulwa, R., Pickering, M., Mao, I.: Digital transformation and hospitality management competencies: Toward an integrative framework. International Journal of Hospitality Management, 102, 103132 (2022).
6. Boz, Hüseyin.: İşletmelerde Yetenek Yönetimi, Akademisyen Yayınevi, Ankara. (2018).
7. Cheong, F.,Law, R.: Human employees versus robotic employees: Customers and hotel managers' perceived experience at unmanned smart hotels. Cogent Social Sciences 9(1), 2202937 (2023).
8. Cismaru, L., Iunius, R.: Bridging the generational gap in the hospitality industry: reverse mentoring—an innovative talent management practice for present and future generations of employees. Sustainability 12(1), 263 (2019).
9. Gilch, P. M., Sieweke, J.: Recruiting digital talent: The strategic role of recruitment in organisations' digital transformation. German Journal of Human Resource Management 35(1), 53-82. (2021).
10. Guerra, J. M. M., Danvila-del-Valle, I., Méndez-Suárez, M.: The impact of digital transformation on talent management. Technological Forecasting and Social Change, 188, 122291 (2023).
11. Hajal, G., Rowson, B.: The future of hospitality jobs: The rise of the gig worker. RHM Research in Hospitality Management. 11-3, 185 – 190 (2021).
12. Haynes, N., Egan, D.: Transient price setting in the era of automated systems: the 'hands-on'hotel general manager lives on!. Journal of Revenue and Pricing Management, 1-11, (2023).
13. Hazarhun, E.: Dijital Dönüşüm Sürecinin Turizm Sektörüne Yansımaları: Akıllı Turizm Teknolojileri Kullanımına Yönelik Bir Araştırma. Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Doktora Tezi, İzmir (2022).
14. İmamoğlu, C. Yetenek yönetiminin sürdürülebilir rekabet üstünlüğüne etkileri: Otel işletmelerine yönelik bir araştırma (Master's thesis, Düzce Üniversitesi Sosyal Bilimler Enstitüsü).

15. Karaboğa, T.: The Impact of Industry 4.0 on Talent Management Practices: A Systematic Review. Leadership Perspectives on Effective Intergenerational Communication and Management, 53-71 (2023).

16. Kravariti, F., Voutsina, K., Tasoulis, K., Dibia, C., Johnston, K: Talent management in hospitality and tourism: a systematic literature review and research agenda. International Journal of Contemporary Hospitality Management 34(1), 321-360 (2022).

17. Martínez-Morán, P. C., Urgoiti, J. M. F. R., Díez, F., Solabarrieta, J.: The digital transformation of the talent management process: A Spanish business case. Sustainability, 13(4), 2264 (2021.)

18. Maxwell, G. A., MacLean, S.: Talent management in hospitality and tourism in Scotland: Operational implications and strategic actions. International Journal of Contemporary Hospitality Management (2008).

19. Marques J.: Digital Transformation of the Hotel Industry. Springer E-book (2023).

20. Morosan, C., Bowen, J. T.: Labor shortage solution: redefining hospitality through digitization. International Journal of Contemporary Hospitality Management, ISSN: 0959-6119 (2022).

21. Pagan-Castaño, E., Ballester-Miquel, J. C., Sánchez-García, J., Guijarro-García, M.: What's next in talent management? Journal of Business Research, 141, 528-535 (2022).

22. Pekdemir, I.: İşletmeleri Kaçınılmaz Yolculuğu Dijital Dönüşüm. Beta Yayınevi, Ankara (2019).

23. Pshenichnykh, Y., Novi, I.: Digital Skills Research for Tourism and Hospitality Staff. International Journal of Media & Information Literacy, 8(1) (2023).

24. Ruel, H., Njoku, E.: AI redefining the hospitality industry. Journal of Tourism Futures 7(1), 53-66 (2021).

25. Sabuncu, K. U., Karacay, G.: Exploring professional competencies for talent management in hospitality and food sector in Turkey. Procedia-Social and Behavioral Sciences 235, 443-452. (2016.)

26. Sindhura, K.: Talent Management Strategies in Human Resource Management: Critical for Business-A Systematic Review. Journal of Positive School Psychology 6(3), 3396-3409 (2022).

27. Song, M., Tao, W., Shen, Z.: The impact of digitalization on labor productivity evolution: evidence from China. Journal of Hospitality and Tourism Technology (2022).

28. Şahin, Ö.: Yetenek Yönetimi Konaklama İşletmelerinin Yenilik Performansına Yönelik Bir Araştırma. Detay Yayıncılık, Ankara (2017).

29. Şirin,B.: Çalışanların Dijital Teknolojiye İlişkin Tutumlarının Uzaktan Çalışma ve Diğer Esnek Çalışma Biçimlerine Yönelik Algılarına Etkisinde Yetenek Yönetiminin Düzenleyici Rolü. İstanbul Arel Üniversitesi, Doktora Tezi. İstanbul (2022).

30. Thomas, C.: Dijital Dönüşümün Temel Bileşenleri. HBR Türkiye Blog (2018).

31. Tüzünkan, D.: Çalışma yaşamının geleceği kapsamında yetenek geliştirme: turizm endüstrisi. In Journal of Social Policy Conferences 78, 205-227 (2020).

32. Zapata, A. M., & Gómez, I. R. C.: Diagnosing the Impact of Digital Transformation on the Human Talent of SMEs in Bogotá, Colombia. Cuadernos de Administración 39(75), (2023).

33. Enterprises Project: https://enterprisersproject.com/what-is-digital-transformation

34. McKinsey Global Institute: https://www.mckinsey.com/~/media/mckinsey/business%20functions/mckinsey%20digital/our%20insights/twenty-

35. Harward Business Review: https://hbrturkiye.com/blog/dijital-donusum-dort-alanda-yetenek-gerektiriyor

36. TUBITAK: https://dijitalakademi.bilgem.tubitak.gov.tr/dijitaldonusum-nedir
37. LinkedIn: https://www.linkedin.com/pulse/how-handle-talent-gap-travel-hospitality-2023-andrew-mazur
38. Hospitality Tech: https://hospitalitytech.com/4-hospitality-tech-trends-2023-and-beyond
39. Hospitality Insights: https://hospitalityinsights.ehl.edu/hospitality-industry-trends
40. UNWTO Tourism Academy: https://www.unwto-tourismacademy.ie.edu/2023/04/creating-new-tourism-digital-talent-a-combined-effort
41. Harvard Business Review: https://hbr.org/2023/09/reskilling-in-the-age-of-ai
42. Torrens: https://www.torrens.edu.au/blog/the-future-job-opportunities-in-hospitality-in-2023
43. LinkedIn: https://www.linkedin.com/pulse/digital-transformation-journey-small-medium-sized-hotels
44. McKinsey: https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/future-of-tourism-bridging-the-labor-gap-enhancing-customer-experience

The Effects of Smart Tourism Technologies on Tourists' Intentions to Re-Choose Smart Destinations

Maksut Özkeşkek

Anadolu University
maksutozkeskek@anadolu.edu.tr

Abstract: Smart destinations are derived from smart cities and use all the possibilities of technology to meet the expectations of tourists. This research will be carried out in Izmir, one of the smart destinations in Turkey. This research aims to investigate whether smart destinations contribute to the holiday purchasing decision processes of domestic and foreign tourists and to determine the effect of smart tourism technologies on service quality, memorable experience, satisfaction and intention to come back to the destination during holiday processes. Survey technique can be used to collect data, and the analysis structure will be created with structural equation model.

Keywords: Smart tourism technologies, Smart destination, Izmir

1 Introduction

Smart cities are urban areas that use assets and resources efficiently and integrate today's technological developments into the city's infrastructure. It aims to increase the service quality of the region, which is built on state-of-the-art infrastructure with an approach similar to smart cities in smart destinations, helping to enrich the experience of tourists, ensuring sustainability and efficiency. Nowadays, it is thought that people's dependence on technology increases day by day, and it also affects the decision process of purchasing a holiday. For this reason, ICT, IoT, high- performance computing have an important role in the destination selection of tourists. Destinations evolve into smart destinations to attract tourists and compete with other destinations. This makes a significant contribution to the enrichment of the experience of the tourists coming to the smart destination, the increase in the living standards of the local people, the convenience of accessibility, the carrying capacity of the destination at the desired levels and the sustainability of the destination. In this research, it is aimed to determine the effect of smart tourism technologies on service quality, memorable experience, satisfaction and intention to come back to the destination in holiday processes, while investigating whether smart destinations contribute to the decision processes of domestic and foreign tourists. The research will take place in Izmir, one of the cities that attract the most domestic and foreign tourists in Turkey.

Conceptual Framework

The concept of smart city has emerged as an application area of IoT. The smart city

acts as a combination of other forms of urban environmental management strategies [11]. The basic logic of building smart cities is that modern technology, which enables communication at spatial and temporal scales, offers service opportunities on a single platform [9, p.30]. A smart tourism destination is defined as a structure that guarantees the sustainability of the region, is built on the latest technological infrastructure, is easily accessible to everyone, facilitates both the environmental interaction and integration of tourists, increases the quality of the experience in the destination and improves the quality of life of the residents [6, p.180]. The aim of a smart tourism destination is to increase the effectiveness of resource management and ensure sustainability in order to improve the tourism experience, increase competitiveness and maximize consumer satisfaction [3, p. 556].

2   Literature Review

When the literature is examined, it has been determined that studies on smart destinations and cities generally focus on ICT infrastructure. It is stated in the sources that smart destinations are derived from smart cities. A situation analysis about the concepts commonly used in studies on smart cities and smart destinations is an overview of the concepts. In the studies conducted on smart destinations, Turkey's European it has been determined that they are left behind from their countries [7; 4; 3; 2; 13; 1].

3   Proposed Methodology

Quantitative research method is used in the research. Data will be collected using the survey technique from the participants. Concepts included in the research on the survey questions; Smart tourism, smart city, smart destination, concepts included in the research model will be briefly explained. Data will be collected via survey technique from local and foreign tourists who agree to participate in the study and will be analyzed later. A structural equation model (SEM) will be used to analyze quantitative data. Data will be collected from local and foreign tourists who have been or are on holiday in Izmir (maximum 1 year). The participant must vacation in the same destination at least more than once. Because it aims to reveal whether there are smart tourism technologies in the tourists' revisit to the smart destination. Participants must have spent their holiday in Izmir within a maximum of 1 year. Participants consist of individuals over the age of 18. Participants must be aware of smart technologies.

4   Model of Research
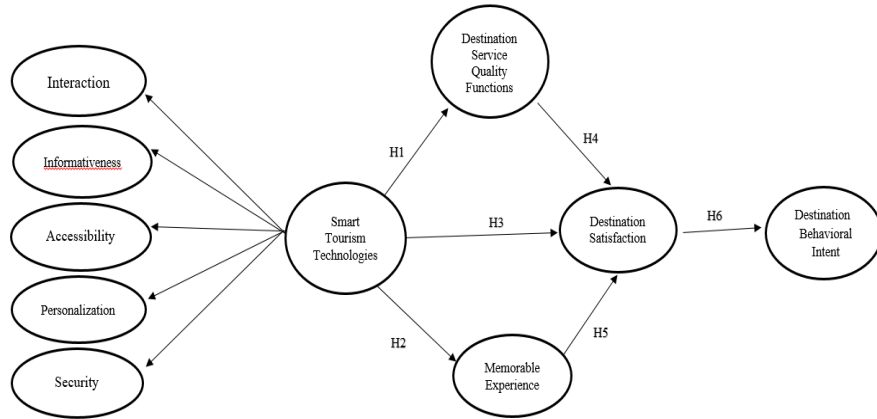
H1: Smart tourism technologies positively affect destination service quality functions.
H2: Smart tourism technologies positively affect memorable tourism experiences.
H3: Smart tourism technologies positively affect destination satisfaction.
H4: Destination service quality functions positively affect destination satisfaction.
H5: Memorable tourism experience positively affects destination satisfaction.
H6: Destination satisfaction positively affects destination behavioral intent.

5   Concept in Model of Research

Smart tourism technologies; computing technology, IoT, cloud computing, big data, near field communication (NFC), sensors, smartphones, mobile connected devices, beacons, virtual reality (VR), augmented reality (AR) etc. [8]. Destination services quality defined as an activity and a benefit service provided by one party to another that is essentially intangible and does not result in the ownership of anything [10]. Memorable experiences that can be remembered by tourists through unique experiences in their touristic activities, that contain emotions, are refreshing, contribute to development and thinking, and are generally unique to individuals (Jefferies and Lepp, 2012 cited in [6, p.16]). Satisfaction is defined the positive feeling you feel when you achieve something or want something to happen [14]. Destination behavioral intention refers to the individual's willingness to visit the same destination again [12].

6   Purpose of the Research

It aims to investigate whether smart destinations contribute to the holiday purchasing decisionprocesses of domestic and foreign tourists and to determine the effect of smart tourism technologies on service quality, memorable experience, satisfaction and

intention to return to the destination during the holiday process. The sub-purpose of the research is to determine whether smart applications have an effect on tourists' destination preferences and to reveal the effect of smart destinations on domestic and foreign tourists' intentions to return to the destination. In addition, it aims to reveal the intention of foreign tourists coming to Izmir to choose smart destinations again and to reveal the extent of Izmir city in terms of smart destination studies.

7 Expected Results

Since the field work of this research has not been done yet, the conclusion part has not been written. The expected possible results of the research indicate that, in general, smart tourism technologies will contribute positively to touristic activities. In addition, it is thought that smart technologies will make a positive contribution to tourists coming to Izmir.

References

1. Bhattacharya, S., Somayaji, S. R. K., Gadekallu, T. R., Alazab, M., Maddikunta, P. K. R.: A review on deep learning for future smart cities. Internet Technology Letters, 5(1), 1-6 (2022).
2. Bifulco, F., Tregua, M., Amitrano, C. C., D'Auria, A.: ICT and sustainability in smart cities management. International Journal of Public Sector Management, 29 (2), 132-147 (2016).
3. Buhalis, D., Amaranggana, A.: Smart tourism destinations. Information and communication technologies. In: Editor, Z. Xiang, L. Tussyadiah (eds.). In Information and Communication Technologies in Tourism, pp.553-564. Springer, Cham (2013).
4. Caragliu, A., Del Bo, C., Nijkamp, P.: Smart cities in Europe. Journal of Urban Technology, 18 (2), 65-82 (2011).
5. Göçmen, Ö.: The effect of unforgettable tourism experience on destination loyalty: A research on Bursa. Journal of Tourism Research Institute, 3(1), 1-27 (2022).
6. Gretzel, U., Sigala, M., Xiang, Z., Koo, C.: Smart tourism: foundations and developments. Electronic markets, 25(3), 179-188 (2015).
7. Hollands, R. G.: Will the real smart city please stand up? Intelligent, progressive or entrepreneurial?. *City*, 12(3), 303-320 (2008).
8. Jeong, M., Shin, H. H.: Tourists' experiences with smart tourism technology at smart destinations and their behavior intentions. Journal of Travel Research, 59(8), 1464-1477 (2020).
9. Kaur, M. J.; Maheshwari, P.: Smart tourist for Dubai city. In 2016 2nd international conference on next generation computing technologies (NGCT) (pp. 30-34). IEEE (2016).
10. Kotler, P., Armstrong, G.: Principles of Marketing, Upper Saddle River, New Jersey (2004)
11. Silva, B. N., Khan, M, Han, K. Towards sustainable smart cities: A review of trends, architectures, components, and open challenges in smart cities. Sustainable Cities and Society, 38, 697-713 (2018).
12. Stylos, N., Vassiliadis, C. A., Bellou, V., & Andronikidis, A.: Destination images, holistic images and personal normative beliefs: Predictors of intention to revisit a destination.

Tourism Management, 53, 40-60 (2016).

13.   Winkowska, J., Szpilko, D. ve Pejić, S.: Smart city concept in the light of the literature
      review. Engineering Management in Production and Services, 11(2), 70-86 (2019).
14.   Oxford Learner's Dictionaries, 2022
      https://www.oxfordlearnersdictionaries.com/definition/american_english/satisfaction#:~:t
      ext=1%5Buncountable%2C%20countable%5D%20the,her%20career%20with%20great%
      20satisfaction, last accessed 2022/01/17.

Constructing A Holistic Content Analytical Framework: A case study of Finland Destination

Peng Yang[1], Heli Hallikainen[2], Juho Pesonen[3]

[1,2,3]University of Eastern Finland, Tulliportinkatu 1, 80130 Joensuu, Finland
[1]peng.yang@uef.fi
[2]juho.pesonen@uef.fi
[3]heli.hallikainen@uef.fi

Abstract. As we transition into the era of Web 3.0, emerging communication technologies have broadened the scope of online travel content, shifting it from primarily text-based to a richer visual format. Furthermore, social media platforms furnish us with an abundance of additional metadata, including posting dates and travel destinations. In order to effectively harness the potential of this vast reservoir of data, we present a holistic analytical framework for Online Travel Content (OTC), exemplified through a case study cantered on Finland.

Keywords. Online Travel Content, Holistic Content Analytical Framework, Tourist Online behaviour, Travel Experience, Destination Image

1   Literature Review

The exploration of online travel content (OTC) has been a significant focus in both industry and academic circles since the early 21st century. OTC encompasses a diverse range of formats,including diaries, weblogs, reviews, comments, threads, blogs, tweets, photos, videos, and more. Within the realm of OTC research, two prominent concepts are electronic word of mouth(eWOM) and user-generated content (UGC).

Electronic Word of Mouth (eWOM) and User-Generated Content (UGC) can be likened to thedistinction between the action of "informing" (eWOM) and the actual "information" itself (UGC). The former emphasizes the transmission of information, while the latter focuses on the various formats in which information is presented. However, it's important to note that UGC and eWOM frequently overlap significantly, particularly in the context of online reviews. As aresult, these two concepts are often intertwined or used interchangeably in studies related to Online Travel Content (OTC) [2; 9; 10].

Online Travel Contents (OTCs) were gathered in various formats, including text, images, geographical data, and videos, from a diverse range of online platforms. These platforms encompass TripAdvisor, Booking.com, Airbnb, virtualtourist, Flickr, Yelp, Youtube, Ctrip, Mafengwo, Facebook. It's worth noting that TripAdvisor is extensively studied as a platform, while online reviews are a highly researched form of content in the field of tourism

Similarly, a diverse range of methods [1; 2; 4] has been employed, spanning from inferential techniques such as ANOVA and linear regression to advanced approaches like deep learning involving Support Vector Machines (SVM), Natural Language

Processing (NLP), and Convolutional Neural Networks (CNN). However, Structural Equation Modeling (SEM) and content analysis have played a prominent role.

Present-day research on Online Travel Content (OTC) primarily concentrates on tourist behavior [3] particularly preferences, the tourism industry with a specific focus on the hotel sector, and the personality of destination images. Surprisingly,the origin or source of these contents is infrequently addressed. While several cross-cultural studies do examine the national culture of the source place, there is a noticeable absence of comprehensive data analysis considering both spatial and temporal dimensions [6; 8]. It is worth noting that online reviews represent the mostextensively studied form of OTC; however, these reviews are predominantly available in a single language, notably English.

The objective of this research is to fill a gap in the existing literature by examining Finland from the OTC created by multilingual tourists using open data extracted from TripAdvisor andInstagram. Our goal is to develop a holistic framework for analyzing Online Travel Content (OTC) that encompasses multilingual text, images, videos, and spatiotemporal data.

2   Research Questions

In this research, our primary focus is on Finland as a tourist destination, examining Online Travel Content (OTC) generated by multilingual tourists. The central research question we aim to address is: How can OTC be comprehensively utilized to gain insights into tourism-related issues?

Additionally, based on the different types of OTC, we seek to explore several key sub-questions related to our main inquiry:

- Textual Content: What is the perception of the destination image, both in general and specific to different languages and tourist groups?
- Visual Content: What are the prominent objects, such as attractions, activities, food, drinks, and nature, and how popular are they among tourists?
- Spatiotemporal Content: Which cities within Finland are the most frequently visited, and what are the patterns of visitor retention?

Ultimately, our objective is to integrate the findings from all aspects of content analysis to construct a comprehensive understanding of tourist behaviour and the destination image of Finland.

3   Proposed methodology

By coding a python scrapping algorithm we collect data from TripAdvisor and Instagram. On the platform of TripAdvisor, we narrow down the data collection on mostly visited cities (based on Finnish Statistics agency data) such as Helsinki.
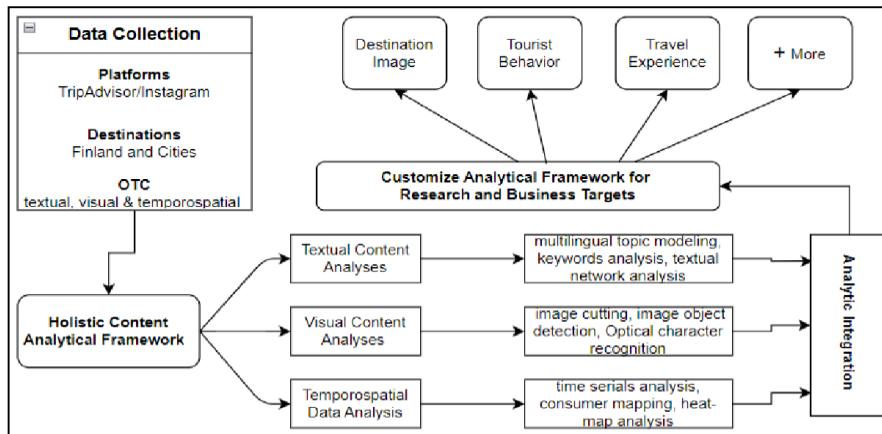
Fig. 1 Holistic Content Analytic Framework

Turku and Rovaniemi. On Instagram, we collect data by searching the #Finland and list of hashtags of mostly visited cities, attraction, activities and so on. All meta data will be collected including text, image, video, user information, date, and location.
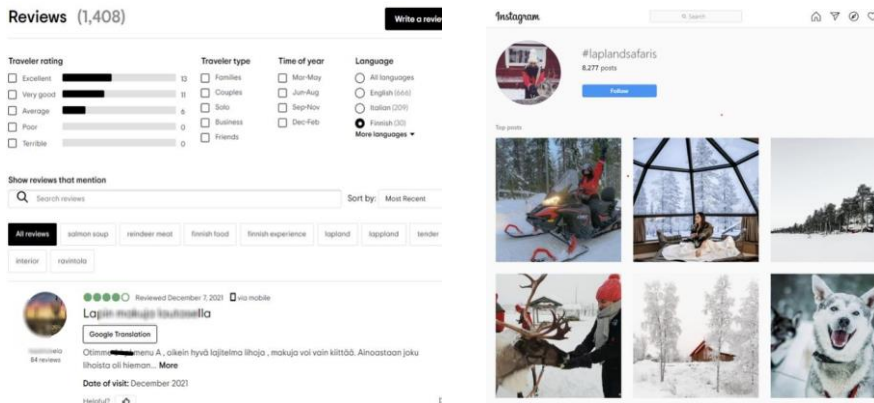

Fig. 2 Data Source: TripAdvisor/Instagram

All types of OTCS should be coded and analyzed separately and integrated for customized research or business target. In terms of textual content, we use Bertopic model [6] which can capture the topic of text in different languages.

Regarding visual content, we employ image detection techniques, specifically YOLO, to categorize the elements within an image. When it comes to video, our approach involves a series of steps: initially, we extract images (using OpenCV), then scan subtitles (utilizing easyOCR), and separate the audio from the video (employing moviepy). This process allows us to apply Optical Character Recognition (OCR) techniques for extracting text-based content from both images and videos. The illustration demonstrates our capability to obtain a caption like 'Everything is prepared for Christmas' from a video frame or an image.
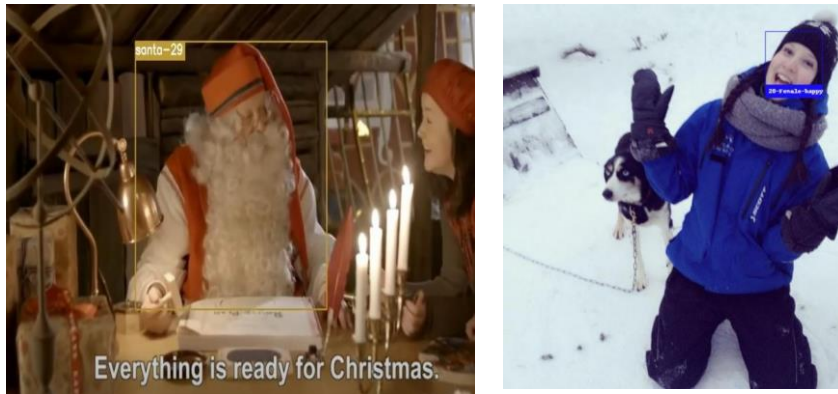
Fig. 3 Example of Image and Video Processing

We could also detect human attributes such as age, gender, and emotion. The image shows a happy 20-year-old happy lady. In terms of tempo-spatial data, we could capture where are the tourist from and which cities are mostly visited in a time serials.

4   Expected Results

The anticipated results, which are yet to be fully realized but are the focus of our hopes and efforts, encompass the following:

Multifaceted Destination Image Exploration: Our aspiration is to go beyond the confines of examining the destination image solely through textual content in a single language. We aim to broaden the horizons of our research by exploring how the destination image is perceived across multiple languages and by incorporating various forms of visual content into our analysis. By doing so, we aim to offer a more comprehensive and nuanced understanding of how a destination is portrayed and perceived.

Comprehensive Insight into Tourist Behaviour: While we have made significant strides in understanding tourist online behaviour, our goal is to extend our understanding beyond this point. We aspire to delve deeper into the concept of a tourist's "footprint," which encompasses not only their digital interactions but also the broader impact they have on the destination. Additionally, we aim to gain more insights into tourists' intentions to revisit a destination. By achieving this, we hope to provide a holistic view of the entire tourist journey, from initial online engagement to the potential for future return visits.

Empowering Academic and Industrial Sectors: Our ultimate objective is to provide a holistic research approach that benefits not only academia but also empowers industries, particularly those in the tourism sector. We seek to equip both researchers and industry stakeholders with a profound understanding of tourists and the destination image. By bridging the gap between research and practical application, we hope to

facilitate better decision-making processes in the tourism industry. This knowledge can empower businesses to enhance the tourist experience, refine destination branding strategies, and make data-driven choices thatlead to more successful outcomes for both tourists and the destinations they visit.

Reference

1. Ayeh, J. K., Au, N., Law, R.: Do We Believe in TripAdvisor? Examining Credibility Perceptions and Online Travelers' Attitude toward Using User-Generated Content'. Journal of Travel Research 52(4), 437–452. (2013).
2. Baka, V.: The Becoming of User-Generated Reviews: Looking at the Past to Understand the Future of Managing Reputation in the Travel Sector'. Tourism Management 53, pp. 148–162 (2016).
3. Cheung, C. M. K., Chan, G. W. W., Limayem, M.: A Critical Review of Online Consumer Behavior: Empirical Research. Journal of Electronic Commerce in Organizations 3(4), 1–19. (2005).
4. Cheung, M. L., Leung, W. K. S., Cheah, J.-H., Ting, H.: Exploring the Effectiveness of Emotional and Rational User-Generated Contents in Digital Tourism Platforms. Journal of Vacation Marketing (2021).
5. Cox, C., Burgess, S., Sellitto, C., Buultjens, J.: The Role of User-Generated Content in Tourists' Travel Planning Behavior'. Journal of Hospitality Marketing & Management 18(8), 743–64. (2009).
6. González-Rodríguez, M. R., Díaz-Fernández, M. C., Bilgihan, A., Shi, F., Okumus, F.: UGC Involvement, Motivation and Personality: Comparison between China and Spain. Journal of Destination Marketing & Management 19, 100543 (2021).
7. Grootendorst, M.: BERTopic: Neural Topic Modeling with a Class-Based TF-IDF Procedure (2022).
8. Messner, W.: Cultural and Individual Differences in Online Reviews'. Journal of International Consumer Marketing 32(5), 356–82 (2020).
9. Phillips, P., Barnes, S., Zigan, K., Schegg. R.: Understanding the Impact of Online Reviews on Hotel Performance: An Empirical Analysis. Journal of Travel Research 56(2), 235–49 (2017).
10. Wang, P.: Exploring the Influence of Electronic Word-of-Mouth on Tourists' Visit Intention: A Dual Process Approach. Journal of Systems and Information Technology 17(4), 381–95 (2015.)

Incorporating carbon footprint in the strategic management and planning of smart destinations

Aitziber Pousa-Unanue[1]

[1] Nebrija University, Madrid 28015, Spain
apousa@nebrija.es

Abstract. The growing pressure of tourism on destinations and the adverse effects that contribute to climate change are accelerating the need for a paradigm shift from recent tourism development models. Decarbonization of the tourism sector will be essential in this process, involving the tourism industry, tourism authorities, the tourist and local community. To contribute to this transformation, this doctoral thesis aims to develop a carbon footprint estimation model applicable to tourism destinations as well as to delve into the possibilities of predicting the carbon footprint in tourism, and study the right way to integrate this information into the decision-making processes and tourism governance of smart destinations. To this end, a four-phase project is presented to develop the research problem and shape the compendium of articles comprising the thesis. It includes the analysis of carbon footprint models in tourism, the development of a CO_2 calculation tool, the potential of predictive models in carbon footprint calculation, and the study of the incorporation of CO_2 information in the decision-making processes of tourism authorities.

Keywords: tourism, carbon footprint, GHG emissions, climate change, destination management.

1 Problem Statement

Although tourism has long been regarded as a low-carbon activity, it is now regarded as a carbon-intensive industry due to its rapid growth and the carbon-dependent nature of the activities that comprise the sector [1]. The relationship between tourism and climate change can be considered bi-directional. Just as tourism is a driver of climate change, the tourism activity itself gets altered by the effects of climate change [2].

The most noticeable impacts of climate change include an increase in the frequency and severity of heat waves, wildfires, and droughts [3], and certainly, tourism is not immune to the force of these events. These impacts, coupled with the increasing strain of tourism at the destination level, disclose the need to ensure sustainable tourism development [4].

According to the World Meteorological Organization [5], there are four key measurement indicators to study the effects of climate change and its resulting environmental impacts: sea level rise, ocean heat content, ocean acidification and

greenhouse gas (GHG) emissions. In this thesis, the last indicator is the most relevant in tourism destinations, since all territories, regardless of their physical characteristics – coastal, urban or rural – will be affected by the effects of GHG emissions.

The measurement of carbon emissions from tourism activity is a crucial indicator for adopting sustainable strategies, mainly because tourist behavior is directly related to carbon emissions. A tourism destination is a space where visitors make several decisions regarding their stay (e.g., transportation choice), and engage in different activities over time and space [6, 7]. Studying these on-site patterns and mobilities will facilitate and improve estimates of the emissions visitors produce Thus, the ecological transition in tourism requires moving towards more sustainable mobility and consumption pat- terns [8] – i.e., actions that aim to reduce GHG emissions – not only on the origin- destination route, but also in the activities during the stay in the tourism destination.

Governments and international organizations' primary strategies center on a green transition. First, both the European Green Deal and the EU Directive on Green Claims contain goals for shifting economic activity towards climate-resilient models. Through its adherence to the Glasgow Declaration for Climate Action in Tourism, the World Tourism Organization [9] acknowledges the necessity for the tourism sector to support the UN's efforts at COP26 in favor of climate action. The European Commission's Transition Pathway for Tourism report cites this adaptation as a must for the sector's sustainability in the years to come [10].

Within the framework of the aforementioned programs, the calculation and management of the carbon footprint is explicitly presented as an essential pillar in the path to be followed by tourism agents, to increase their resilience and capacity to act in the face of future crises. Tourism stakeholders must be able to acknowledge the carbon footprint related to tourism generated in their territories, as well as to incorporate this information into their intelligence systems and indicators, to improve territorial policies and the management, planning and marketing of the tourism destination.

Therefore, this doctoral thesis aims to develop and automate a model for calculating the carbon footprint of tourists in tourism destinations, based on a study of the mobility chains and consumption patterns of visitors in different types of destinations during their trip. This general objective is, in turn, operationalized in different work phases, to each of which a specific objective is assigned.

Firstly, methodological advances in calculating the carbon footprint in tourism will be studied, to identify possibilities for improving these methods with a view to the future design of a new tool. The second objective is to examine visitors' behavior patterns and the energy uses linked to these to design a carbon footprint calculator for tourism destinations, based on four Spanish destinations serving as case studies. Thirdly, it is intended to analyze the possibilities of predictive models in modelling tourism carbon footprint. Finally, integrating of the knowledge generated by carbon footprint calculation tools into the destination's tourism strategy will be studied to ensure data and in- formation-based decision-making and, thus, tourism intelligence.

2   Literature Review

The existing literature on calculating of the carbon footprint from a tourism perspective is as broad as the industry itself. Three main ways of approaching these calculations can be distinguished in the academic literature. Firstly, the study of emissions (CO_2 or CO_2eq.) from tourism infrastructures or events, generally in case studies. For instance, Wang et al. [11] study the energy uses of a sample of amusement parks in Taiwan, concluding that the impact per visitor in these facilities is 7.4kg-CO_2eq. Promjittiphong et al. [12] assess the impacts of the Benja Burapha Cycling Rally as a tourist attraction, resulting in total GHG emissions from fuel consumption of 6.333kg-CO_2eq.

A second group of contributions analyze the carbon impact of certain tourism sub-sectors, such as transport or tourist accommodation. Gunter & Wöber [13] are a good example of this. These authors calculate the emissions related to air tourist transport in 48 European urban tourist destinations based on data from the TourMIS tool. Dorta-Antequera et al. [14] also study emissions from air traffic, but in their case, considering the particularity of island destinations (i.e., Canary Islands) and conclude that more than 6.4 Mt of CO_2 are emitted annually due to tourism transport.

Finally, there is research that collect, from different points of view, the emissions attributed to tourism activity in a destination. For instance, Sun [15] conducts an empirical study in Taiwan where they study the emissions of tourism activity at different scales using macroeconomic data (i.e., Extended Input-Output model). Rico et al. [16] monitor de carbon footprint of tourism in Barcelona. Their results claim that the tourism industry contributes annually with 9.6MtCO_2 to the city environment.

This last group is the closest to the calculation methodology suggested in this thesis. Yet, it is essential to consider the literature from a broader perspective in order to be able to transfer the comprehensiveness of each of the branches to one's own calculation.

3   Conceptual framework

The theoretical framework of this thesis is mainly sequential and linear, and includes the fundamental theoretical axes for the development of each of the four objectives presented above.

PHASE I | **PHASE II** | **PHASE III** | **PHASE IV**

Carbon footprint models in tourism | CO2 calculation tool | Carbon footprint predictions | Incorporating knowledge into tourism strategy

- CO2 in destinations.
- CO2 in sub-sectors.
- CO2 in tourism events or infrastructures.

- On-site tourist behaviour, consumption patterns.
- Energy uses, intensities, coefficients.

- Descriptive vs. predictive data analysis.
- Application of BD in tourism sustainability.

- Smart destinations framework.
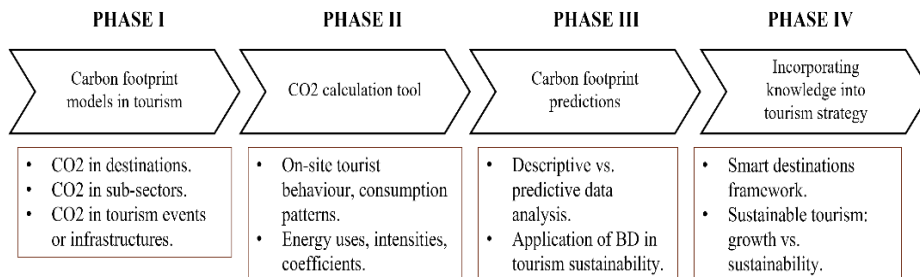- Sustainable tourism: growth vs. sustainability.

Fig. 1. Thesis conceptual framework

4 Proposed methodology

A quantitative approach is here proposed to calculate the carbon footprint of the main tourist corridors of four Spanish destinations: Madrid, San Sebastian, Benidorm and the Monfragüe National Park [17]. After identifying and clustering the main accommodation areas, tourist attractions and transport possibilities available for the execution of these itineraries [18], the corresponding emissions for these routes will be quantified according to the fuel and energy consumption methodology [19].

The sequences between the different nodes will be carried out with probabilistic models based on the results of the study of tourist behaviour. For this purpose, choice experiments [20] and/or contingent valuation method analysis [21] will be developed to reveal travellers' motivations in the decision-making process.

5 Expected results

The research results of this doctoral thesis will be materialized in academic articles – aligned with the different presented phases – published in high-impact scientific journals, which will give rise to the compendium composed of them. This compendium would consist of a systematic review of the literature, an article including the suggested modelling for tourism carbon footprint calculation, and two exploratory papers on the potential of predictive methods and the incorporation of such information in the framework of smart destinations. In addition to the academic contribution, other scientific, technical and social impacts are expected during and after conducting this thesis.

On the one hand, the result of this thesis will provide destination managers with tools to ensure smarter strategies and policies to become more resilient and sustainable. Destination management organizations, given the coordination and management responsibility they have over the destination and the actors involved in tourism activity, will transfer the need to use these tools to the rest of the components of the tourism ecosystem; promoting the use of intelligence systems also among private actors and other stakeholders. Likewise, it is aimed that the decisions and governance resulting from the use of this tool can be a lever to encourage the conversion of visitor attitudes in onsite decision making [22; 23; 4].

References

1. Scott, D., Gössling, S., Hall, C. M.: International tourism and climate change. Wiley Interdisciplinary Reviews: Climate Change 3(3), 213-232 (2012).
2. Perch-Nielsen, S., Sesartic, A., Stucki, M.: The greenhouse gas intensity of the tourism sector: The case of Switzerland. Environmental Science & Policy 13(2), 131-140 (2010).
3. California Institute of Technology: The Effects of Climate Change. https://climate.nasa.gov/ef- fects/, last accessed 2023/09/26.
4. Tourism Panel on Climate Change [TPCC]: Code Red for Climate Resilient Tourism. https://tpcc.info/code-red/, last accessed 2023/09/26.

5. World Meteorological Organization [WMO]: Four key climate change indicators break records in 2021. https://public.wmo.int/en/media/press-release/four-key-climate-change-indicators-break-records-2021, last accessed 2022/09/26.

6. McKercher, B.: The impact of distance on tourism: A tourism geography law. Tourism Geographies 1–5 (2018).

7. Gössling, S., Scott, D.,Hall, C. M.: Inter-market variability in CO2 emission intensities in tourism: Implications for destination marketing and carbon management. Tourism Management 46, 203-212 (2015).

8. Higgins-Desbiolles, F.: Socialising tourism for social and ecological justice after COVID-19. Tourism Geographies 0(0), 1–14 (2020).

9. World Tourism Organization [WTO]: Tourism unites behind the Glasgow Declaration in climate action at COP26. https://www.unwto.org/news/tourism-unites-behind-the-glasgow-declaration- on-climate-action-at-cop26, last accessed 2023/09/26.

10. European Commission: Transition Pathway for Tourism. https://ec.europa.eu/docsroom/documents/49498, last accessed 2023/09/26.

11. Wang, J. C., Wang, Y., Ko, L., Wang, J. H.: Greenhouse gas emissions of amusement parks in Taiwan. Renewable & Sustainable Energy Reviews 74, 581-589 (2017).

12. Promjittiphong, C., Junead, J., Hanpattanakit, P.: Greenhouse Gas Emission and Mitigation from Sports Tourism in Benja Burapha Cycling Rally, Sa Kaeo, Thailand. Chemical Engineering Transactions 63, 397-402 (2018).

13. Gunter, U., Wöber, K.: Estimating transportation-related CO2 emissions of European city tourism. Journal of Sustainable Tourism 30(1), 145-168 (2022).

14. Dorta Antequera, P., Díaz Pacheco, J., López Díez, A., Bethencourt Herrera, C.: Tourism, Transport and Climate Change: The Carbon Footprint of International Air Traffic on Islands. Sustainability 13(4), 1795 (2021).

15. Sun, Y.: A framework to account for the tourism carbon footprint at island destinations. Tourism Management 45, 16-27 (2014).

16. Rico, A., Martínez-Blanco, J., Montlleó, M., Rodríguez, G., Tavares, N., Arias, A., Oliver-Solà, J.: Carbon footprint of tourism in Barcelona. Tourism Management 70, 491-504 (2019).

17. Beritelli, P., Reinhold, S., Laesser, C.: Visitor flows, trajectories and corridors: Planning and designing places from the traveler's point of view. Annals of Tourism Research 82, 102936 (2020).

18. Paulino, I., Lozano, S., Prats, L.: Identifying tourism destinations from tourists' travel patterns. Journal of Destination Marketing & Management 19, 100508 (2021).

19. Zubelzu, S., Fernández, R. Á.: Carbon Footprint and Urban Planning: Incorporating Methodologies to Assess the Influence of the Urban Master Plan on the Carbon Footprint of the City. Springer (2016).

20. Kemperman, A.: A review of research into discrete choice experiments in tourism: Launching the Annals of Tourism Research Curated Collection on Discrete Choice Experiments in Tourism. Annals of Tourism Research 87, 103137 (2021).

21. Kotchen, M. J., Turk, Z. M., Leiserowitz, A. A.: Public willingness to pay for a US carbon tax and preferences for spending the revenue. Environmental Research Letters 12(9), 094012 (2017).

22. Dwyer, L., Kim, C.: Destination competitiveness: determinants and indicators. Current issues in tourism 6(5), 369-414 (2003).

23. Femenia-Serra, F., Ivars-Baidal, J. A.: Do smart tourism destinations really work? The case of Benidorm. Asia Pacific Journal of Tourism Research 26(4), 365-384 (2021).

24. Ivars-Baidal, J. A., Celdrán-Bernabeu, M. A., Femenia-Serra, F., Perles-Ribes, J. F., Giner-Sánchez, D.: Measuring the progress of smart destinations: The use of indicators as a management tool. Journal of Destination Marketing & Management 19, 100531 (2021).

Exploring Human-AI Collaboration in Digital Tourism Marketing Content Co-creation

Haoyue Yu

University of Surrey, Guildford, GU2 7XH, UK
`hy00521@surrey.ac.uk`

Abstract: Providing high-quality marketing content to tourists is the key for tourism organizations to promote their brands and products. However, without professional content production teams, tourism organizations often struggle to create novel and valuable digital marketing content. This study aims to design a human-AI collaboration (HAIC) mode for tourism organizations to create digital tourism marketing content (DTMC). A sequential exploratory mixed-methods design, including semi-structured interviews, workshops, and online surveys, will be usedto investigate general HAIC principles and patterns in content creation processes and thereafter to design a specific HAIC mode for DTMC co-creation. Finally, aresearch framework will be developed to measure the quality of DTMC created by HAIC and test its impact on customer's travel motivation and visit intention.

Keywords: Tourism Marketing, Content Creation, Human-AI Collaboration.

1   Problem Definition

Digital tourism marketing content (DTMC), such as photos, videos, blogs, forums, microsites, and landing pages, has been regarded as the "king" approach for tourism enterprises to promote their brands and connect with target customers [5]. High-quality DTMC can reduce tourists' perceived uncertainty and risks causedby the intangibility of tourism products [9]. However, creating valuable DTMC is not an easy task since the DTMC generated by combining similar scenery and activity materials in traditional form, style and pattern lacks creativity and attractiveness, while the content creation process is complex and requires extensive human resources and time [5]. While there is a research gap in studying DTMC from a productive view, it is necessary to explore how tourism organizations can create high-quality DTMC in the digital era to stay competitive [9].

In recent years, Artificial Intelligence (AI) has dramatically transformed a variety of sectors. Existing research showed that AI highly improved the efficiency of marketing and suggested that human can collaborate with AI to drive marketing strategies, personalize customer experiences, and improve campaign management [11]. In the creative industry, generative AI (AI) can automatically create multimodal

content and human can collaborate with AI to co-create superior creative content in a more efficient and accurate approach than human or AI does [3]. However, little is known about how human can collaborate with AI to create marketing content in the tourism industry. For instance, what roles human and AI should play, what exact capabilities are required by each, and how they achieve strength complement in the DTMC creation process. In addition, customers' reactions towards the DTMC created by AI or human-AI collaboration (HAIC) are also unexplored. Therefore, this study aims to design a HAIC mode for tourism organizations to create DTMC. Specifically, this research attempts to achieve the following objectives: (1) to explore the principles and the current state of HAIC in content creation; (2) to design a specific HAIC mode for human employees and AI systems to co-create DTMC; and (3) to examine the performance of the HAIC mode by investigating customer's reaction towards the DTCM created under the specific HAIC mode.

2   Literature Review

2.1   Human-AI Collaboration

The general principle for HAIC is to combine the complementary strengths of human and AI systems to perform better than human or AI works separately [11]. In specific work scenarios, the roles of human and AI and the capabilities they need to perform will change according to the work content [3]. In the creative industry, Grabe et al. [4] identify four primary HAIC patterns for human and AI to proactively engage in creation flows: Curating (AI creates content and human selects), Exploring (AI creates content and human adapts), Evolving (human selects AI-created content for AI to adapt and combine), and Conditioning (human constraints desired features of content and AI creates it). However, extant research on the principles and patterns of HAIC is generalized, and there is a lack of exploration of HAIC modes under specific creative tasks such as DTMC creation. In addition, the human-AI co-creation model (see Fig.1) proposed by Wu et al. [15] generalises and explains the whole creative process of HAIC in content creation, providing a theoretical framework for designing specific HAIC modes from the process view.
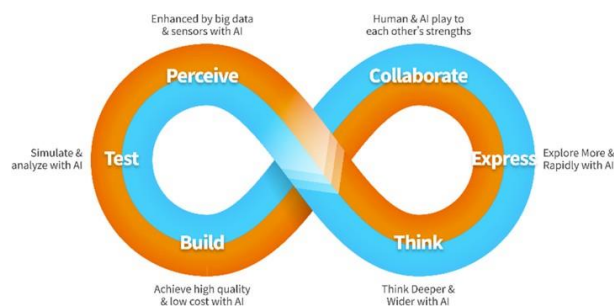

Fig. 1. The human-AI co-creation model (Wu et al., 2021)

2.2 Digital Tourism Marketing Content

DTMC is the information created and published by tourism organizations online to introduce products and deliver emotional value [9]. Compared to con-tent created for art, games, and fashion design, the creative space for creating tourism marketing content is limited since the DTMC creation is constrained by the content andstyle of the tourism products themselves [4]. As a result, creating DTMC requires strong divergent and convergent thinking capabilities of the creators [1]. Moreover, prior literature explores the impact of DTMC createdby human or AI separately on users' motivation, loyalty, commitment, and visit intention to tourism destinations, but less is known about customers' reactions towards the DTMC created by HAIC.

3 Conceptual Framework

As mentioned above, this study aims to design a HAIC mode for tourism organizations to create DTMC. Exploring HAIC modes in DTMC creation will be the main part of this study while testing the performance of the HACI mode will be also indispensable. Due to the difficulty of quantifying the creation process and the fact that the performance of creation is outcome-oriented, this study will examine the performance of HAIC from the customer's view, that is, exploring the customer's reaction towards theDTCM created under the designed HAIC mode.

According to the Elaboration Likelihood Model theory, when people are faced with information for persuasion, they will be affected by central path (cognitive critical thinking) and peripheral path (mental shortcut with little cognitive effort) [12; 13]. In the tourism marketing subject, high-quality DTMC stimulates customers' visit intention by evoking their cognitive (central) and emotional (peripheral) motivation [7; 6]. As for what characteristics of DTMC contribute to customers' travel motivation, this study proposes that informativeness andpersonalization will be the central cues to influence customers' cognitive motivation, while entertainment, novelty, and vividness will drive their emotional motivation as theperipheral cues [8; 14; 16]. Along with the research findings of Studies 1 and 2 (see the Proposed Methodology section), it is expected that more characteristic factors of DTMC created by HAIC will emerge and be added to the conceptual framework (Fig.2) which will be tested in Study 3 (see the Proposed Methodology section).

In addition, the social response theory highlights that individuals will treat computers anthropomorphically and will provide a social response to them mindlessly when they perceive social cues [10]. Chen et al. [2] find that individuals' perception of AI will moderate the impact of DTMC on customers' reactions in both the central and peripheral paths. Since HAIC is a new type of creator and they lack ofresearch on exploring customers' perception towards HAIC, based on the social response theory, this study proposes that customer's perception towards creator type (hu- man creator/AI/HAIC) will moderate the relationship between the characteristic of DTMC and customers' motivation.
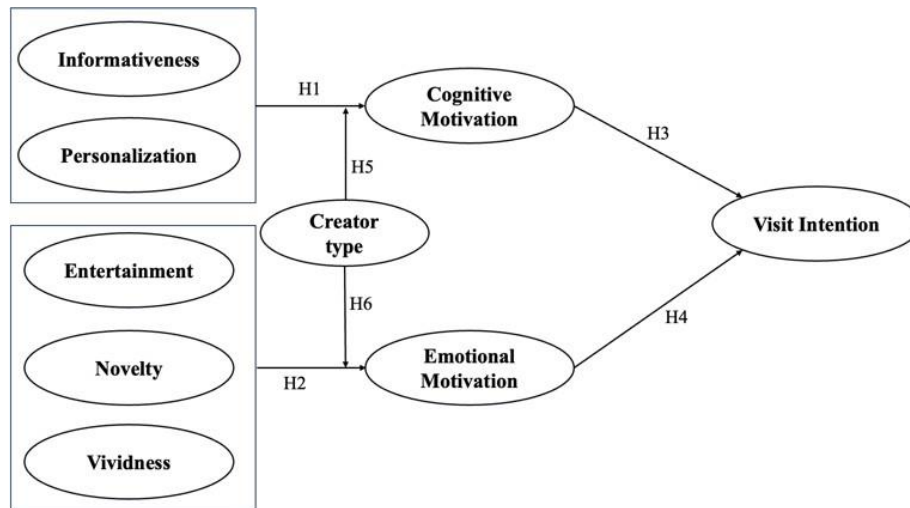
Fig.2 Proposed conceptual framework for Study 3

H1: The (a) informativeness, and (b) personalization of DTMC will positively affect
    customers' cognitive motivation.
H2: The (a) entertainment, (b) novelty, and (c) vividness of DTMC will positively
    affect customers' emotional motivation.
H3: Cognitive motivation will positively affect customers' visit intention.
H4: Emotional motivation will positively affect customers' visit intention.
H5: Customers' perception towards creator type will moderate the relationship between
    (a) informativeness, (b) personalization and cognitive motivation.
H6: Customers' perception towards creator type will moderate the relationship among
    (a) entertainment, (b) novelty, (c) vividness and emotional motivation.

4 Proposed Methodology

Based on the pragmatism philosophy, this study will apply the abductive approach with
a mixed-methods exploratory sequential design.

Study 1. In the first stage, semi-structured interviews will be used to explore the
principles and the current state of HAIC in content creation processes. Through
purposive sampling and snowball sampling, this study will recruit practitioners who
have HAIC content co-creation experience in the last 6 months, and then ask them to
recall their collaborative processes with AI. Specific questions related to the roles, tasks,
capabilities, and specific collaborative principles required in the creation process will be
asked.The purpose of Study 1 is to provide a general theoretical basis for designing a
specificHAIC mode in Study 2.

Study 2. Drawing on findings from Study 1, the second study will adopt a workshop
approach to design the specific HAIC mode for creating DTMC. Through purposive

sampling and snowball sampling, human employees who have DTMC creation experience will be recruited. During workshops, each participant will be asked to create tour-ism advertisements as high-quality as possible for London City by collaborating with AI systems. Then, all participants will be invited to share how they collaborated with AI during the creation process and HAIC patterns will be designed through the final collective discussion. Integrating the results of workshops, a specific HAIC mode for human and AI to co-create DTMC will be proposed.

Study 3. To examine the performance of the HAIC mode designed in Study 2, in the third stage, this study will do online surveys to investigate customers' reactions towards the DTCM created under the HAIC mode. Conducting convenience sampling, target tourists who have never visited London will be invited to view the London-related DTMC created by human, AI and HAIC, and use online questionnaires to rate the characteristics of DTMC, their travel motivation and visit intention evoked by the DTMC (see Fig.2). All DTMC used in this study will be selected by the researchers and experts in the tourism marketing subject. Through structural equation modelling analysis, the findings of this study will present the performance of DTMC created by HAIC in Study2 and indicate the impact of DTMC on customers' reactions.

5   Expected Results

Theoretically, this study will fill the research gap in the computer-supported cooperative work and tourism marketing fields by exploring the human-AI collaborative principles and patterns for co-creation content and designing a specific HAIC mode for theDTMC creation process. It will also provide a new perspective for scholars to explore the impact of HAIC-created DTMC on customers' reactions. Practically, by designinga HAIC process, this study will help tourism organizations create novel and useful digital marketing content. Furthermore, it will offer general guidance for human to work alongside AI systems in this AI-driven era.

References

1. Bavik, A., Kuo, C. F.: A systematic review of creativity in tourism and hospitality. The Service Industries Journal 42(5-6), 321-359 (2022).
2. Chen, Q., Yin, C., Gong, Y.: Would an AI chatbot persuade you: an empirical answer from the elaboration likelihood model. Information Technology & People. Vol. ahead-of-print No. ahead-of- print. https://doi.org/10.1108/ITP-10-2021-0764 (2023).
3. Dellermann, D., Ebel, P., Söllner, M., Leimeister, J. M.: Hybrid Intelligence. Business & Information Systems Engineering 61(5), 637–643 (2019).
4. Grabe, I., Duque, M. G., Zhu, J.: Towards a framework for human-AI interaction pat-terns in co-creative GAN applications. In Proceeding of the 3rd Workshop on Human-AI Co-Creation with Generative Models (HAI-GEN '22) at ACM IUI Workshops (2022).
5. Hollebeek, L. D., Macky, K.: Digital Content Marketing's Role in Fostering Consumer Engagement, Trust, and Value: Framework, Fundamental Propositions, and Implications. Journal of Interactive Marketing 45(2019), 27–41 (2019).

6. Khan, M. J., Chelliah, S., Haron, M. S., Ahmed, S.: Role of travel motivations, perceived risks and travel constraints on destination image and visit intention in medical tour- ism: Theoretical model. Sultan Qaboos University Medical Journal 17(1), e11-e17 (2017).

7. Kim, S. E., Lee, K. Y., Shin, S. I., Yang, S. B.: Effects of tourism information quality in social media on destination image formation: The case of Sina Weibo. Information & Management 54(6), 687-702 (2017).

8. Kumar, V., Rajan, B., Venkatesan, R., Lecinski, J.: Understanding the role of artificial intelligence in personalized engagement marketing. California Management Review 61(4), 135-155 (2019).

9. Mathew, V., Soliman, M.: Does digital content marketing affect tourism consumer behaviour? An extension of technology acceptance model. Journal of Consumer Behaviour 20(1), 61-75 (2021).

10. Nass, C., Moon, Y.: Machines and mindlessness: Social responses to computers. Jour-nal of Social Issues 56(1), 81-103 (2000).

11. Petrescu, M., Krishen, A. S.: Hybrid intelligence: human–AI collaboration in marketing analytics. Journal of Marketing Analytics 1-12 (2023).

12. Petty, R. E., Brinol, P., Priester, J. R.: Mass media attitude change: Implications of the elaboration likelihood model of persuasion. In Media effects (pp. 141-180) Routledge (2009).

13. Petty, R. E., Cacioppo, J. T., Petty, R. E., Cacioppo, J. T.: The elaboration likelihood model of persuasion (pp. 1-24) Springer New York (1986).

14. Wei, M., Liu, M., Xu, J., Li, S., Cao, J.: Understanding the influence of sensory advertising of tourism destinations on visit intention with a modified AIDA model. Asia Pacific Journal of Tourism Research 27(3), 259-273 (2022).

15. Wu, Z., Ji, D., Yu, K., Zeng, X., Wu, D., Shidujaman, M.: AI creativity and the human- AI co-creation model. In Human-Computer Interaction. Theory, Methods and Tools: Thematic Area, HCI 2021, Held as Part of the 23rd HCI International Conference, HCII 2021, Virtual Event, July 24–29, 2021, Proceedings, Part I 23 (pp. 171-190). Springer International Publishing (2021).

16. Youn, S., Jin, S. V.: "In AI we trust?" The effects of parasocial interaction and technician versus luddite ideological views on chatbot-based customer relationship managementin the emerging "feeling economy". Computers in Human Behavior 119, 106721 (2021).

Developing a Human-Centered assessment framework for use in e-tourism research

Anne-Sofie Engelschiøn[Orcid 0009-0008-3596-0200]

University of Stavanger, Norway
Anne-sofie.engelschion@uis.no

Abstract: This paper delves into the integration of human needs and values in evaluating tourism technology, a topic that has gained increasing scholarly attention. Researchers have suggested potential benefits such as enhanced user experiences and improved service delivery, but there is a lack of systematic and empirical studies to substantiate these claims. The study critiques the conventional approach of viewing tourism technology as a uniform entity, advocating instead for recognizing the distinct attributes of different technologies. It emphasizes the need to differentiate between these technologies to effectively evaluate their impact and relevance. Adopting a human-centered perspective, the paper proposes a Human-Centered Assessment Framework, developed through a mixed-method approach, including expert interviews and survey. The research identifies key challenges and opportunities linked to specific technological attributes. This foundational work provides a structured framework for future research, aimed at systematically assessing technology in the tourism industry from a Human-Centered perspective.

Keywords: Human-centered, technology, Human-Centered assessment framework, Tourism, ICTs, agency

1   Problem statement

E-tourism refers to the application of information and communication technology (ICT) for enhancing the efficiency and experiences in the tourism industry [8]. It encompasses a wide range of activities, including online travel booking, virtual tours, digital marketing of tourist destinations, and the use of social media for traveler engagement and feedback. E-tourism leverages technology to improve both the operational aspects of tourism businesses and the travel experience of tourists. The past decades, information technologies (ICTs) have displayed their transformative potential, prompting researchers to investigate the potential impacts. In the recent years as there is an increase in research that critically examines information technologies role within tourism, stating the need for a humanist approach to practices with a particular emphasis on promoting well-being [3; 5; 6; 11]. Fuchs and Sigala [5] highlight the need to critically examine the fundamental beliefs and values that underlie theories used to understand and promote the strategic use of ICTs in tourism, as they argue the focus on

profit overlooks the humanist alternatives and leaves it underexplored. The discourse suggests that it can lead to significant advancements in user experience, service quality, and overall satisfaction in tourism experiences [2; 12]. Despite this promising perspective, the field suffers from a lack of systematic and empirical investigation into these claims as the available concepts, methodologies and theories that incorporate humanist perspectives are limited and at this point inhibits our abilities as researchers to be effective in the search for empirical evidence [4]. This article specifically stresses two tendencies within research on technology in tourism; 1. There is a necessity of distinguishing between technologies and their respective attributes in order to effectively assess their potential impact and applicability as technology is often treated as a singular, homogenous entity. 2. Technology is often investigated without the relations to the system that it is part of such as the business model, strategy, value perspective etc. When investigating components within a larger system, focusing solely on individual components without considering how they affect the system can lead to incomplete or misleading conclusions. The interactions and dependencies within a system influence the behavior of its components in significant ways [1].

In this article, the Human-Centered perspective is introduced as a philosophical framework to guide the understanding of what attributes technologies that incorporates a humanist approach should entail to promote the creation of social systems. This represents a pioneering effort in reshaping the discourse around technology in tourism. By adopting a human-centric lens and providing empirical insights, it aims to guide future technological developments towards more meaningful and impactful applications in the tourism sector.

Research question:

- What characteristics should technology embody to enhance human-centric practices in tourism?
- How can these attributes be integrated into a practical technological framework to inform industry stakeholders and researchers?

2   Theory

There has been an implicit assumption that the technological advancements in tourism primarily benefit tourists and this has led to an acceptance of new technologies without critical examination of their consequences [9]. Stickdorn et al. points to that there exist a disconnect between technology solutions and user needs [10]. Technological development has been dominated by a mechanical systems approach and is organized and managed so as to severely restrict the behavior of its parts [1]. The focus on features and products places businesses at the core of system development, limiting customer influence on production and internal processes to ensure cost efficiency, thus favoring profit maximization within an equilibrium system [13]. In response to the demands of empowered customers, customer-involved design processes and mass

customization of products have been introduced. However, these efforts largely operate within the confines of the existing mechanical logic and fail to recognize the need for a fundamental shift to fully unlock the potential (Catarci et al. 2020; Hienerth et al. 2011). A switch to a social systems logic represents a shift that could yield big differences. A social system serves the purposes of its parts and the system of which it again is part of. It enables its parts to do things that they could not otherwise do (synergy), such as increase the variety in both the means and ends available to them [1].

3   Human-centeredness

Human-centered approaches specifically focus on the ethical and sociopolitical implications of implementing technologies, giving priority to individual well-being and placing the perspective of the human experience at the forefront of their investigations [4]. Human-Centeredness posits a postphenomenologic worldview that emphasizes the role of technology as one that it is to be analyzed as a mediator of the relationship humans have with their environment. Technological mediation posits that technology plays a crucial role in shaping human experiences and interactions with their environment. This perspective argues against viewing technology merely as a neutral tool. Instead, it is seen as an active mediator of human perceptions and actions [7]. Engelschiøn summarized the four main human-centered attributes with related concepts as displayed in bold in the two first columns in table 1. [4]. The table also contains the preliminary assessment questions that has emerged from the theory.

Table 1 Main human-centered attributes with related concepts and questions

Emancipatory nature	**Agency**	Does the technology provided offer agency in decisions about how to run the business? Are the user able to or feel the freedom to change technology?
	Power relationships	Is the relationship coerced? Is not entering the relationship an option?
	Ownership	Who owns the value created? Are the user able to bring the value created out of the system? Are there other value extractions than what the providers are paying for/aware of happening?

	Conviviality	Are the user of the tool able to influence the outcome with their creativity?
Enabling human potential	**Identity**	Does the technology allow for unique identity expressions?
	Well-being	
Value	**Experienced value**	How is value measured?
Network integrators	**Social relations**	Does the technology enhance relationships?
	Collaboration	Does the technology enable collaboration?

4   Methodology

A mixed-methods approach, combining expert interviews and a survey, is adopted to provide comprehensive insights. The interviews provide qualitative insights, while the survey offers quantitative data, together informing the development of the human-centered assessment framework. Stakeholders will be identified as key interviewees for their expert insights. Recruitment is conducted through professional networks and industry forums. A personalized invitation email, detailing the study's aim and interview structure, will be sent to potential participants. Semi-structured interviews will be conducted online via Microsoft Teams. This format allows for flexibility in exploring topics while ensuring coverage of essential research areas. Interviews are recorded with consent, and transcriptions are made for analysis.

The survey, influenced by the expert interviews, consists of Likert-scale questions. These questions gauge attitudes and perceptions regarding the desired technological attributes. The survey will be distributed through different mailing lists, and the respondents will be offered an incentive, enhancing the relevance and engagement of the respondents. An important task will be to ensure response rates are sufficient.

Thematic analysis will be employed to analyze interview data. This involves coding transcribed data and categorizing these codes using the software NVivo into themes relevant to the research question. Survey data will be analyzed using the statistical software R. Descriptive statistics summarize the data, while inferential statistics, such as regression analysis, explore the relationships between variables. The study will adhere to ethical standards of research. Informed consent will be obtained from all participants, ensuring they are fully aware of the study's purpose, their role, and data usage. Confidentiality and anonymity are strictly maintained throughout the study.

5   Expected results

The author has come across different examples of frustrations from the industry when it comes to technologies, such as business owners not being able to download data like customer lists that they have spent years adding into systems, in such a case they had no prerequisites to understand the challenges they would face when adopting the system. The resulting index will offer a valuable analytic framework for assessing if the technology in question is enhancing human-centered practices or not. Furthermore, the research aims to contribute to a deeper understanding of the potential significance and impacts of different attributes of technologies, informing research, enabling empirical investigations, and creating awareness among practitioners ultimately fostering more meaningful and valuable experiences.

References

1. Ackoff, R. L.: Systems thinking and thinking systems. System Dynamics Review 10(2-3), 175-188 (1994).
2. Buhalis, D., Law, R.: 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), 609-623 (2008).
3. Cai, W., McKenna, B.: Knowledge creation in information technology and tourism research. Journal of Travel Research 60(4), 912-915 (2021).
4. Engelschiøn, A.-S.: Exploring Human-Centered Approaches: A Review in the Context of Tourism. In. [Manuscript in preparation] (2023).
5. Fuchs, M., Sigala, M.: Strategic use of information technologies in tourism: A review and critique. Handbook of e-Tourism, 1-37 (2021).
6. Gretzel, U., Fuchs, M., Baggio, R., Hoepken, W., Law, R., Neidhardt, J., Pesonen, J., Zanker, M., Xiang, Z.: e-Tourism beyond COVID-19: a call for transformative research. Information Technology & Tourism, 22, 187-203 (2020).
7. Ihde, D.: Technology and the lifeworld: From garden to earth (1990).
8. Singh, S., Bashar, A.: A bibliometric review on the development in e-tourism research. International Hospitality Review 37(1), 71-93 (2021).
9. Stankov, U., Gretzel, U.: Tourism 4.0 technologies and tourist experiences: a human-centered design perspective. Information Technology & Tourism 22(3), 477-488 (2020).
10. Stickdorn, M., Frischhut, B., Schmid, J. S.: Mobile ethnography: A pioneering research approach for customer-centered destination management. Tourism Analysis 19(4), 491-503 (2014).
11. Werthner, H.: A digital humanism view on e-tourism. Information Technology & Tourism 24(3), 347-360 (2022).
12. Xiang, Z.: From digitization to the age of acceleration: On information technology and tourism. Tourism management perspectives 25, 147-150 (2018).
13. Zuboff, S.: Big other: surveillance capitalism and the prospects of an information civilization. Journal of information technology 30(1), 75-89 (2015).

The role of event satisfaction and habit in the reuse effect of technological innovativeness: evaluating participation in virtual events with extended reality

Sarp Tahsin Kumlu[1] [0000-0002-8350-3329] and Emrah Özkul[2] [0000-0002-7938-6916]

[1] Kocaeli University, Kocaeli, Turkey
[2] Kocaeli University, Kocaeli, Turkey

Abstract

Events are activities occurring within a particular process with a specific location. Event tourism is an organization organized to increase the attractiveness of a destination. This thesis aims to evaluate the moderating role of event satisfaction and habit in the reuse effect of technological innovation by using extended reality in the context of a virtual event. In this context, a survey technique was used to collect data from a purposive sample. In the application phase, firstly, a virtual concert will be created, and the participants will experience it with extended reality supported glasses. After the experience, data will be collected from the participants, and the analysis process will begin. The findings obtained in this study, in which a structural equation will be made to test the model, will be interpreted. Suggestions for the sector, the public and future studies will be presented for the results obtained.

Keywords: Extended reality, Event satisfaction, Technology, Technological innovation, Habit, Reuse

1   Problem Statement

Throughout their lives, people experience individual and social transformation under the influence of internal and external variables. One of the most important of these variables is technology. Therefore, it is a global factor in human life. In the context of the 21st century, high resistance to technology is not an expected situation. Regarding its technical structure and complexity, middle-aged and older people are expected to remain in the background at the point of use. However, with the influence of social media, it is seen that all generations use technological devices such as phones, tablets and computers in some way. In particular, Generation Alpha and Generation Z were born in the technological age. The participation of this community in education, entertainment, social activities, etc., is technology-based chiefly. This generation, which uses technology as a necessity and entertainment, spends a long time in games, videos and social media applications [1] The fact that they

are very excited about reusing the applications that they have reached a certain satisfaction usually creates a habit for them. Even though the points mentioned above can be evaluated primarily for Generation Z and Alpha, the fact that Generation X and Generation Y also reach a certain level of satisfaction with technological applications can lead to an increase in habit and, accordingly, an increase in the intention to use them again. From this perspective, people of almost all ages use technology at different intensity levels. Although this situation has positive aspects, such as keeping up with age, accessing information, events and sociality quickly, and using free time, it is also inevitable because it changes other balances in life and causes problems. Especially the cultural values, relationships and communication of people are negatively affected by this situation. Children born in the 2000s today have a high level of individualization and put technological devices at the centre of their lives more than friendship or family relationships. This situation is a sociological and psychological problem. It is a fact that prioritizing technology in decisions and events to be organized is inevitable and very important. However, it is seen as a necessity to do this within the framework of a balance in terms of the variables mentioned above.

Considering the abovementioned circumstances, this study was designed based on the fact that the recreational sector came to a standstill at the onset of COVID-19. The complete cessation of recreational events during this period deeply affected the tourism and music industries and caused a significant loss in related industries. This situation is shown as the research's primary problem and starting point. In this context, the impact of extended reality, shown as the closest technological environment to reality, as an alternative in events has become a matter of curiosity. Based on this, several research questions were formulated;

- Do the technological innovativeness characteristics of people participating in virtual events with extended reality affect the reuse intention? Do event satisfaction and habit have a moderating role in this effect?

2   Research's Original Value, Purpose and Importance

In the period when the entertainment sector came to a standstill, concerts, theatre, etc., were presented to the audience through specific platforms on the internet. However, the only difference between these concerts on platforms such as YouTube, Instagram and Twitter from the videos on the platforms is that they are presented live at that moment. There is nothing extra for the audience to experience. Also, concerts were organized in virtual environments such as the Metaverse. In this case, the interaction is high, but the reality is low compared to the videos in which people's experiences are within the framework

of the simulated world.

The difference of this study from the methods mentioned above because the audience is immersed in a world where they will not be disconnected from the event environment as if they were watching a video. The difference from the Metaverse environment is that they feel it in the environment where the actual event is taking place. Technological innovativeness is used as an independent variable in the study, and intention to reuse, which is used as a dependent variable, has been used in many fields, especially education and recreation. However, no study was found in which event satisfaction and habit regulate this effect. In addition, there is no virtual event study designed with the whole dimension of extended reality based on tourism technologies, nor has there been any measurement of these variables in events related to other technologies. This situation reveals the unique value of the thesis.

The application planned for this thesis is to use extended reality technology to create the feeling that people are there without attending any event and to make different measurements accordingly. With this technology to be used, it is aimed to offer people an organization where they can be satisfied as an alternative to reality. In line with this goal, the ultimate goal is to measure whether consumers who adopt technological innovations will want to use them again after participating in this event. In addition, another objective of the study is to measure the potential of event satisfaction and habit to reduce or increase this effect. If the results from this study show that people have reached satisfaction, it is planned to propose several application areas. Extended reality technology may come to the fore to ensure that organizations do not stop and provide a realistic experience despite any disaster that will prevent people from leaving their homes. Another situation that may arise as a result of this study is to ensure the participation of individuals who cannot participate in these events out of their own choice. In addition to being a social responsibility, this situation includes the ability of individuals with any physical or financial disability to socialize comfortably in society.

There is no similar thesis study in terms of application and measurement. Especially in the first stage, the application is thought to constitute an essential field of use. This study has a feature that can be developed as an alternative to the changes in society's expectations in the coming years (in the long term). From another perspective, it is considered an alternative that will come to the forefront in face-to-face organizations. Although it comes to the forefront with its complementary feature in the short term, it is predicted to turn from an alternative to the primary purpose of use in the long term. However, as stated before, making it a purpose without creating certain balances may create sociological and psychological problems. From this point of view, this change in the field of application will be reflected in future studies, and people will develop this issue in a balanced and directly proportional manner with the development of technology. This situation reveals the importance of the study.

3 Conceptual Framework

People participate in many events in their daily lives in order to socialize and motivate themselves. These events, which mostly take place face-to-face, not only provide consumers with instant entertainment but also provide them with positive energy in the process. However, in the short term, some crises can cause these events to stop. The most recent example of this is COVID-19. With the spread of this virus, events have almost entirely come to a standstill due to the obligation of people to stay at home. Although some events are offered in virtual environments, it is difficult to say they satisfy people sufficiently. Because consumers expect an experience close to reality, for this reason, it is aimed to test the applicability of participation in virtual events with extended technology, which is one of the last points of reality technologies, as it is closer to reality than other environments in terms of experience and interaction.

In order to explain extended reality technology, it is first necessary to know augmented, virtual and mixed reality. First of all, augmented reality (AR) technology offers people a broader perception by combining virtual and natural environments. With this technology, people experience an enriched presentation in the real world [2]. On the other hand, virtual reality (VR) is a technology that allows users to be immersed in 3D environments created by computers. This technology includes various screen interfaces and rich graphics systems [3]. Mixed reality (MR) can be considered a combination of augmented and virtual reality. In this technology, virtual objects are superimposed on the real world. Using MR, users can see each other and the natural world in a virtual environment. Extended reality, the last point of reality technologies, is shown as a roof combining AR, VR and MR technologies. In this technology, the real world and the virtual world are combined, and the user can move objects in both worlds [4].

In the model of the study, technological innovativeness is the independent variable, and intention to reuse is the dependent variable. The variables that regulate the relationship between these variables will be event satisfaction and habit variables. Technological innovativeness is a type of innovativeness related to a particular field. People with this characteristic are shown as consumers interested in and following technological products. In the literature, people who have the characteristic of being the first to adopt technological products and services are generally defined as technological innovators [5]. These people behave according to their satisfaction with the products or services they use. Satisfaction is people's emotional reactions to the experience after any consumption or event. These reactions are usually based on subjective evaluations. People's quality perceptions, expectations, etc., can be shown as one of the most essential factors in the satisfaction received [6].

Regarding the scope of the study, event satisfaction is similar to the fulfilment of people's expectations from the events they participate in. These

expectations may vary according to the person, place, type of event, etc. The satisfaction obtained from these experiences is expected to be reflected not only in immediate satisfaction but also in people's satisfaction and motivation [7]. Peopleshow repetitive behaviour for a particular routine they are satisfied with or a reward they like to obtain. This habit provides different satisfaction in each trial [8]. It is expected that people who achieve certain satisfaction and experience different satisfactions in each trial will intend to use these services, products or applications again. Intention to reuse refers to the desire of consumers to reuse an application or system due to developing a positive attitude towards it. The intention to reuse a system is technically similar to repurchase. In both cases, the consumer has shown a positive approach by being influenced by the first use [9].

4   Methodology

Regarding its structure, the research covers all consumers who use technology. However, it was deemed appropriate to include the Z and Alpha generations to see the variables and interactions between them best and to design a future-oriented technology. Since the Alpha generation born after 2010 [10], has yet to show high participation in the events to be implemented within the scope of the research, it was decided that Generation Z (1997-2012) living in Kocaeli province would constitute the universe of the study. Since it was not possible to reach the entire population due to certain constraints, sampling was used. It is aimed to collect data through purposive sampling.

Quantitative research methods were utilized to test the relationships between variables based on causal results. In this context, a questionnaire form was created by taking the previously validated items of each variable. Before the survey technique is applied, it is planned to provide an experience of participating in a virtual event with Wide Reality technology, one of the study's most powerful aspects. In this context, 3D photography will be taken at the venue, followed by live performance concert shooting. Then, with the support of software engineers through the Unity program, the natural world and virtual objects will be overlapped. In this application, the participants will feel themselves at the door of a closed concert venue the moment they put on the glasses and can interact with the virtual objects placed. Due to symptoms such as dizziness and nausea over a certain period in current glasses technologies, it is planned to present the event in 2 parts of 15 minutes each. Taking a 10-minute break between the parts will allow people to pay attention without problems. Following the end of the application, the participants will be given the questionnaire forms that were previously created and asked to fill them in. These questionnaires include items related to "Technological Innovativeness", "Reuse Intention", "Event Satisfaction" and "Habit". After obtaining the data,

the analysis process will be started. Factor analysis will be applied to measure the appropriateness of the Technological Innovativeness, Event Satisfaction, Habit and Reuse Intention scales. Then, structural equation modelling will be used to test the research model.

5   Expected Results

This thesis will create an application area to measure the relationship between the variables in the research model. People who experience a virtual concert with extended reality technology in this application area are expected to be sufficiently satisfied with the concert and reach a certain level of satisfaction. With this satisfaction, it is thought that they will want to use it again. In addition, it is expected that they will want to make it a habit (in the long term) thanks to its different structure and easy transportation compared to real concerts.

When all these situations are evaluated, it is thought that the reuse intention, which is the primary measurement objective, will be positive due to the participation of the z and alpha generations, which are thought to have a technologically innovative identity, in this event. In addition, it is expected that event satisfaction and habit will play a moderating role in increasing or decreasing this effect. The variables in this moderating role are likely to increase this effect.

References

1. Buhalis, D., Karatay, N.: Mixed Reality (MR) for generation Z in cultural heritage tourism towards metaverse. In Information and Communication Technologies in Tourism 2022: Proceedings of the ENTER 2022 eTourism Conference, January 11–14, (pp. 16-27). Springer International Publishing (2022).
2. Siriwardhana, Y., Porambage P., Liyanage M. Ylinattila M. A.: Survey on Mobile Augmented Reality With 5G Mobile Edge Computing: Architectures, Applications And Technical Aspects, IEEE Communications Surveys & Tutorials 23(2), 1160-1192 (2021).
3. Hu, M., Luo, X., Chen, J., Lee, Y. C., Zhou, Y., Wu, D.: Virtual reality: A Survey of Enabling Technologies and Its Applications in IoT. Journal of Network and Computer Applications 1(1), 43-57 (2021).
4. Andrews, C., Southworth, M. K., Silva, J. N., Silva, J. R.: Extended reality in medical practice. Current treatment options in cardiovascular medicine 21(4), 1-12 (2019).
5. Thakur, R., Angriawan, A. Summey, J. H.: Technological Opinion Leadership: the Role of Personal Innovativeness, Gadget Love and

Technological Innovativeness. Journal of Business Research 69(8), 2764-2773 (2016).

6. Brown, G., Smith, A., Assaker, G.: Revisiting the host city: An empirical examination of sport involvement, place attachment, event satisfaction and spectator intentions at the London Olympics. Tourism management 55, 160-172 (2016).

7. Sato, M., Yoshida, M., Wakayoshi, K., Shonk, D. J.: Event satisfaction, leisure involvement and life satisfaction at a walking event: The mediating role of life domain satisfaction. Leisure Studies 36(5), 605-617 (2017).

8. MacInnes, S., Grün, B., Dolnicar, S.: Habit drives sustainable tourist behaviour. Annals of Tourism Research 92, 103329 (2022).

9. Anand, K., Arya, V., Suresh, S., Sharma, A.: Quality Dimensions of Augmented Reality-based Mobile Apps for Smart-Tourism and its Impact on Customer Satisfaction & Reuse Intention. Tourism Planning & Development, 1-24 (2022).

10. Demirel, Z. H.: Çalışma hayatında geleceğin insan kaynağı: Alfa kuşağı. OPUS International Journal of Society Researches, 18 (Yönetim ve Organizasyon Özel Sayısı), 1796-1827 (2021).