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International Marketing Journal of Culture and Tourism (IMJCT)

Published by Katara Publishing House in cooperation with Al Rayyan International University College-University of Derby UK-Qatar.

FOUNDER & EDITOR-IN-CHIEF

Professor Khalid Al-Sulaiti

Al Rayyan International University College-University of Derby UK-Qatar and CEO of Katara Cultural Village Foundation

The main objective of the journal is to publish scientific research works on the subject of culture and tourism marketing that includes management trends, government policies, and the insight related to development of new technologies, methodologies and tools.

The journal seeks to provide a platform for researchers and experts in the field of culture and tourism marketing to reach a wider audience.

About Journal

IMJCT is an international scientific journal specialized in publishing research in tourism culture and marketing, including government administration and policies, and developing new technologies, methodologies, and tools. It is published by Katara Publishing House in cooperation with Al Rayyan International University College-University of Derby UK-Qatar. The Journal publishes two issues per year and aims to provide a scientific platform that allows researchers and specialists to arbitrate and publish their scientific papers from research and studies in the field of tourism, culture, and marketing, as well as to contribute to the spread of knowledge by making these researches and studies available to the beneficiaries across this vast space.

Scope

The journal has a huge scope as it fills a void. It will help not only students, teachers. experts and researchers who are working in this area, but also cultural and tourism institutions, organizations, NGOs, companies, and the general public to update themselves about the latest research, developments, and trends in culture and tourism marketing.

Vision

To be a leading global scientific publishing platform in the field of tourism culture and marketing.

Journal

- Giving the opportunity to Arab and international researchers to arbitrate and publish their research in the field of tourism culture and marketing.
- Contributing to supporting and developing the cultural field and tourism marketing through genuine and serious research studies in accordance with international standards.
- Achieving the universality of culture and tourism in accordance with the modern vision, with its professional controls and ethics.
- Creating a knowledge base for the magazine that contributes to creating a scientific reference and a solid documentary record.

Editorial Board

Publishing Rules

General Conditions:

- The Journal is interested in publishing scientific papers and events related to culture and tourism marketing in the English language, whether it is original research, reports on conferences, seminars and workshops, or presentations of scientific thesis related to the areas of publishing the magazine.
- The journal is concerned with publishing original scientific papers that have not been previously published, by any means of publication, and have not been submitted for publication in another journal. This shall be confirmed by the written approval of the researcher.
- The researcher is not entitled to publish his research in another place after approval of its publication in the journal except after obtaining written permission to do so from the editor-in-chief.
- The journal has the right to take whatever legal and disciplinary measures it deems appropriate in the event that it is proven that the researcher breaches the scientific integrity.
- The journal is not obligated to provide reasons for rejecting the research if it chooses not to publish the submitted material.
- The editorial board has the right to make any necessary formal adjustments to the research in accordance with the instructions and rules of publication in the journal.
- The journal does not charge any fees for publishing and does not provide any rewards for published research except in the case of subscriptions.

Special Conditions:

- **Commitment to objectivity and ethical values in scientific research, such as:**
  1. Taking into account the authenticity and integrity of the scientific and intellectual tendency of the research.
  2. Avoid offending people and bodies.
  3. The research should deal theoretically and practically with contemporary issues that are closest to human reality.
  4. Taking into account objectivity and keeping away from personalizing ideas.

- **Considering the scientific formulation of the research, through the following:**
  1. The integrity of the language and avoiding linguistic errors.
  2. Observing punctuation and spelling rules.
  3. Accuracy in documenting texts and evidence.

- **Number of research pages should not exceed (30) pages of regular cut (A4), including references and appendices.**
  - Font size and type: The font size is: (14), margin: (10). and font type (Times New Roman)
  - The research shall be accompanied by an abstract, provided that it does not exceed (300) words: The abstract includes the following: Research topic, objectives, methodology, more important findings end recommendations, in addition to keywords.
  - 5000-7000-word maximum length including references, tables, and figures.
  - The research to be divided and organized according to the requirements of the scientific research method, in order to maintain coordination of the research and reports published in the journal.
  - An APA approach to be followed in documenting research.
  - The researcher can view a general form of the scientific paper by clicking here: Article Template.

Procedural Steps for Publishing a Research

- The papers are sent electronically, either by uploading them via the journal's website or by sending them to the editorial board mail: editor@imjct.com.
- The editorial board of the journal conducts a preliminary examination of the research and then decides its eligibility for arbitration or its rejection.
- The research and studies submitted for publication in the journal are arbitrated by at least two arbitrators.
- The research is returned to the researchers after evaluation and arbitration for the purpose of evaluation end modification.
- If the research is accepted for publication, then all copyrights shall devolve to the journal, and it may not be published in any paper or electronic means of publication except with the written permission of the editor-in-chief.
- If the research is published, the researcher will be sent a letter of publication with an electronic copy of the journal in which his research was published.

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Editorial

Dear Academic and Industry Colleagues,

It is my pleasure to present the sixth issue of the International Marketing Journal of Culture and Tourism, a joint publication of Katara Publishing House and Al Rayan International University College in partnership with the University of Derby.

Since its launch, our journal has aimed to showcase high-quality research in culture and tourism marketing, with a focus on emerging trends, policy insights, and industry advancements. This issue features four timely research papers on key topics including digital transformation, artificial intelligence, talent management, and entrepreneurship education.

The first paper examines the challenge of balancing digital and traditional leadership strategies in the tourism and hotel industry, while the second explores the impact of integrating artificial intelligence in the restaurant sector in Serbia. The third paper investigates talent management practices in the context of digital transformation across the UK, Greece, and Hong Kong. Lastly, the fourth paper highlights the essential skills needed for managing uncertainty and risk in entrepreneurship education.

We are pleased to share these insightful studies and hope they spark meaningful discussions among researchers and practitioners in the fields of culture, tourism, and marketing. I extend my sincere gratitude to our editors, authors, and reviewers, and warmly invite future submissions from both academia and industry.

Sincerely,

Professor Khalid Al Sulaiti
Founder and Editor in Chief

A balancing act - developing a digital leadership strategy between digital and analogue worlds in the tourism and hotel industry

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Abstract

Achieving a position of Digital Leadership requires a strong strategic response and cultural posture. Although digitalisation and artificial intelligence is increasingly seen as an opportunity rather than a threat by the vast majority of players in tourism and hospitality industry, the digitalisation activities currently being observed by numerous players are more of a reactive, operational and/or isolated nature than part of a dedicated and integrated digitalisation strategy, with clearly defined goals and the aim of transforming a traditional tourism offering into a digitalisation-capable and therefore sustainable business model. This paper aims to clarify how tourism and hospitality organisations strategically respond to the challenges imposed by digitalisation and artificial intelligence and to identify some tensions and challenges in the related strategic approach.

Key Words:

Digital Leadership, Strategy, Analogization, Digitalisation, Transformation

Introduction

Digitalisation and artificial intelligence are reshaping the tourism and hospitality industry and increasingly becoming the focus of tourism theory and practice (Gretzel et al. 2022; Egger 2022; Buhalis et al. 2019). However, the majority of the tourism and hospitality industry companies have been attested a below-average level of digitalisation or digital maturity by various studies over a long period of time (Deutsche Telekom 2022; Demary and Goecke 2021; Ghandi et al. 2016, Strategy &PwC 2013). Many industry players seem to be in an early or experimental stage of the digital era where there appear to be many possibilities, but very few truths and regularities. Consequently, the fundamental questions and issues that both science and business practice deal with in the context of digital transformation are the same today as they were in the past. An example of this is the observation that, around thirty years after the commercial beginnings of the internet in 1991, basic digital hygiene factors, such as online bookability and online visibility of companies, are still identified as crucial problem areas of digitalisation in the tourism and hospitality industry (Online Birds 2023; BTE Tourismus- und Regionalberatung 2023). This and the fact that very few companies are "born digitals" has shifted the balance of power over the last twenty years, as numerous changes in the industry structure and competitive landscape in various areas of tourism and hospitality seem to underline (lower market entry barriers, increasing competitive rivalry, structural change, risk of substitution, dis/re-intermediation, consumer power, market transparency, etc.) (Pencarelli 2020, Buhalis et al. 2019). The strong dynamics of change are reflected in the emergence and development of numerous companies that were not previously active in tourism and hospitality industry and have now - based on their purely digital business approach - leapfrogged the analogue age of tourism and are challenging established providers at various levels of competition and performance, as for instance Booking, Google or Airbnb in the hotel industry. Currently, very few of the traditional providers of the tourism and hospitality industry have been able to strategically counter the disruptive and digitalised business models; in fact, most companies still lack a future-oriented and systematic leadership approach to digitalisation that can be

used to respond to the changing challenges on the market and organisational side (Bauhuber et al. 2023¸ Ristova/Maglovski 2018).

Digital Leadership – What is your Strategy?

Digital Leadership generally refers to the management of organizational systems and stakeholders based on the comprehensive application of digital technologies, aiming to achieve higher effectiveness and efficiency in the internal and external activities of the company (Wirtz 2021). In literature, the concept of 'digital maturity' has emerged as a means to assess the current status of a company's digitalisation efforts and to provide guidance for future strategies and decisions. Following Chanias and Hess, digital maturity is defined as *'...the status of a company's digital transformation' that describes '...what a company has already achieved with regard to transformation efforts'* (Chanias/Hess 2016, p. 4). Various maturity models have been developed in both academia and industry (Proff et al. 2021; Thordsen et al. 2020; Remane et al. 2017), which, with moderate variations and depending on the level of abstraction, primarily focus on four dimensions: Strategy, leadership and corporate culture, competencies and skills and organization.

In the past, tourism and hospitality companies have done a lot to become more efficient in what they do, they have become bigger, faster, more productive, better, in other words, they have become more efficient in what they do. As we all know, efficiency means doing things "right". This is the one art that companies and entrepreneurs must master. However, in his Harvard classic "What is Strategy?", Michael Porter (1996) pointed out almost 25 years ago that operational excellence is by no means a strategy and cannot replace it ("operational effectiveness is not strategy"). However, in the digital transformation process in many tourism and hospitality companies, the technology perspective currently dominates the customer perspective and thus tactics dominate strategy, rather than the other way round (Gardini 2021; Furr/Shipilov 2021), despite the well known dictum of digital transformation management that *"strategy, not technology, drives digital transformation."* (Kane et al. 2015). That this is obviously not a recipe for success and that the majority of all digital transformation initiatives do not accomplish their desired objectives has been repeatedly emphasised by various studies across a wide range of industries for many years (Davenport and Westerman 2018; Martin 2018; Piccoli 2008). In 2019, for example, US companies invested an estimated USD 1.3 trillion in digital transformation initiatives, of which an estimated USD 900 billion was wasted due to a lack of anticipation and an over-reliance on technology (Tabrizi et al. 2019).

It appears that the technological and operational agenda continues to overshadow the much more important strategic question of what long-term added value digitalisation can create for companies and customers and where, and whether the potential for digital change is so massive and fundamental that it fundamentally challenges the way companies function in their respective economic structures. In this context, Porter was fast to point out that the view of digital technology and the economic evaluation of the strategic relevance of internet-based technologies should be characterised by a clear analysis of the strategic added value that digital opportunities are able to deliver to companies and organisations: *"...see the Internet for what it is: an enabling technology - a powerful set of tools that can be used wisely or unwisely, in almost any industry and as part of almost any strategy. We need to ask fundamental questions: Who will capture the economic benefits the Internet creates? Will all the value end up going to customers, or will companies be able to reap a share of it? What will be the Internet's impact on industry structure? Will it expand or shrink the pool of profits? And what will be its impact on strategy? Will the Internet bolster or erode the ability of companies to gain sustainable advantage over competitors?"* (Porter 2001, p.64). Even though the COVID-19 pandemic has recently led to a change in awareness and a digitalisation push in the tourism and hospitality industry, the strategic and cultural dimension of digital transformation is still underestimated by large parts of the industry: *"The survival of traditional enterprises is seriously threatened by the new playbook rules established by digitalisation. Consequently, these business entities are called to innovate and re-think the business model they have been using thus far to create value for tourists and to achieve satisfactory performance levels."* (Pencarelli 2020, p.467).

And so the other art that distinguishes good from less good companies is effectiveness, i.e. the ability of companies and entrepreneurs to do the "right thing"! But what is the right thing to do for your own company naturally always depends on the context and the goals you set yourself and is therefore inevitably the most essential and fundamental question that an entrepreneur or a company must answer for itself. Consequently, a strategic answer is also needed in the digital age, but tourism and hospitality companies often find it difficult to develop a clear and stringent understanding of what they do and what they do not want to do. Accordingly, an overemphasis on, as well as a lack of integration of, operational-tactical elements of corporate management can currently be observed in numerous companies across many tourism sectors and industries, while the strategic and coordinative requirements of management are often neglected:*"...these firms appear to be too busy 'running the business' to strategically manage it."* (Rodwell/Shadur 2007, p. 53). The traditionally strong product and sales orientation of many players in the tourism and hospitality industry makes this approach even more difficult in many companies (Gardini 2017).

Successful companies have mastered both disciplines, as both the efficiency and effectiveness of a company are essential in order to achieve superior corporate and marketing performance. The conflict between operational and strategic orientation and the tension between the need to coordinate and integrate analogue and digital corporate activities affects the various areas of a company. Accordingly, a return to a clear market- and customer-centered focus is required here (mission/purpose), as well as the consistent and stringent alignment of corporate activities on the basis of company-specific and long-term developed resources. These capabilities and resources ideally cannot be imitated by competitors (non-imitability), are integrated into the company in such a way that they only realise their full value there (company specificity), cannot be replaced by a competitor's resource substitutes that have a similar performance potential (non-substitutability), have a value-creating character on the market, which is reflected by an additional benefit perceived by the customer (ability to create value on the market) (Frehse 2006; Porter 1999).

The changed competitive conditions in numerous market and customer segments in the tourism and hospitality industry as a result of digitalisation open up new strategic options for service providers in dealing with their customers on their way to becoming a smart or digital tourism and hospitality company in the field of tension between the interaction between artificial and natural intelligence (Haux et al. 2021) as well as the analogisation and digitalisation of entrepreneurial actions (Bichler et al. 2019) and the associated strategic behaviours of standardisation and/or individualisation, mechanisation and/or humanisation and externalisation and/or internalisation (Gardini 2022). For example, the dimensions of analogisation and digitalisation can be used to create a portfolio that can be used to identify four general directions that can serve as a guide through the 'tech' and 'touch' dimensions of tourism and hospitality in the digital age (Fig. 2.1):

- *Integrative strategy (high-touch and high-tech)*

The technological possibilities offered by digitalisation and AI are used to provide customers with highly individualised, intensive and unique customer experiences, with the aim of creating an "*intelligent*" environment that enables a targeted, interpersonal and relationship-oriented customer experience between the customer and the company by making maximum use of the given technological potential.

- *Human-centered strategy (high-touch)*

As a result of increasing digitalisation and mechanisation, a counter-trend of analogisation is emerging ("...need/desire to escape from technology" (Gretzel et al. 2015, p. 185)). Accordingly, the high-touch approach places people and not technology at the centre. The aim is to create a "*social*" environment that enables an intensive, interpersonal and high-quality relationship between customer and company by providing authentic real life experiences, social contacts, collaboration, time sovereignty, deceleration, a change from everyday digital life and much more.

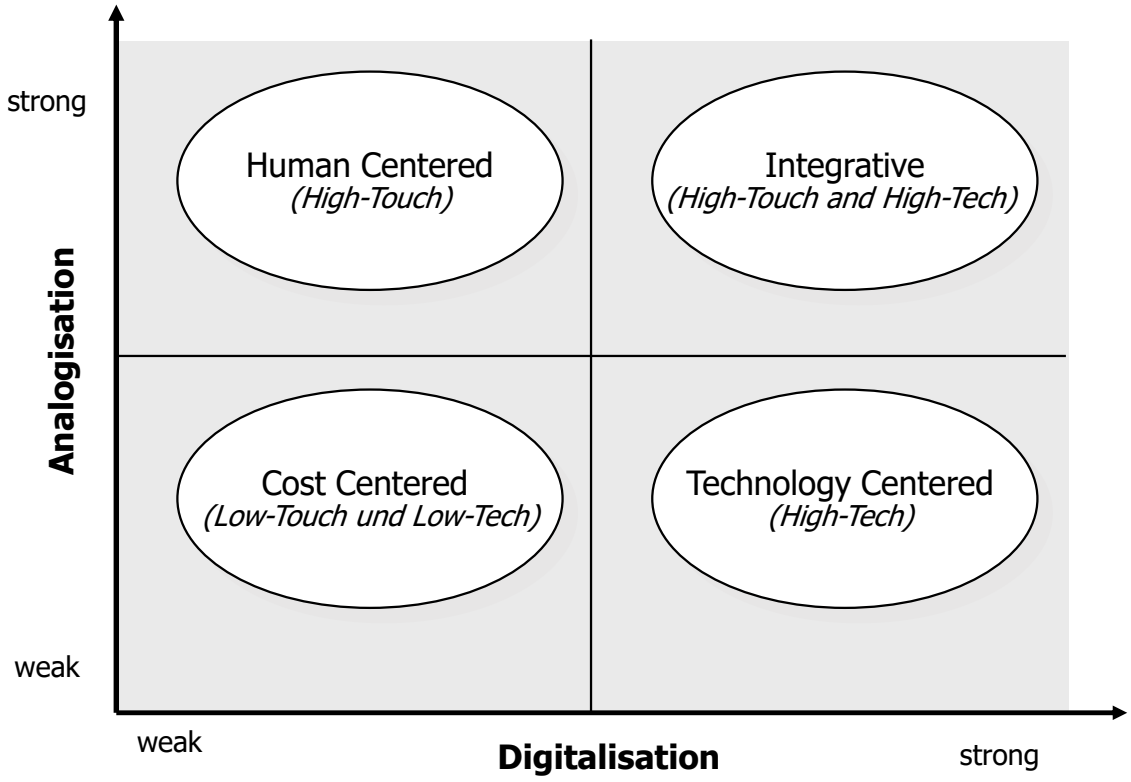
- *Technology-centered strategy (high-tech)*

Digitalisation, mechanisation and automation are the drivers of the business model here. Accordingly, the high-tech approach places technology, rather than people, at the centre. The aim is to create a "*technical*" environment by maximising technological potential and the unique functionality of digital applications, which enables individual, technologically charged customer experiences.

- *Cost-centered strategy (low-tech and low-touch)*

The focus of this approach is not on maximising technological potential, but on optimising it. The aim is to create a "*rational*" environment and, through standardisation, rationalisation, automation, externalisation and more, to drive the substitution of the production factor "human" forward and thus generate costs, price advantages and efficiency gains from both a company and customer perspective.

FIGURE 1 Analogisation and digitalisation als competitive dimensions in the tourism industry (Gardini, 2022, p.453)



The balancing act between old and new as a strategic challenge

At this point, each tourism and hospitality company needs to initiate and develop its own specific digital transformation process based on the company's history, identity and prevailing strategic ideas. The key question that tourism and hospitality companies and organisations need to address at this point is whether this process should be evolutionary or disruptive and revolutionary. This question is not fundamentally new or solely due to digitalisation, as the balancing act between old and new business areas, between existing and innovative business, between efficiency and effectiveness is a well-known challenge in strategic management. In this context, the concept of organisational ambidexterity (Raisch et al. 2009; O'Reilly 2004) is often used in the literature to illustrate the challenges of digital transformation processes in companies. Organisational ambidexterity refers to the specific strategic ability of a company to manage its business model efficiently and in a future-oriented manner at the same time. Hence, from a strategic perspective, companies and organisations must be able to expand their core business with maximum efficiency (exploitation) and at the same time have the ability to

actively develop innovations and new business models (exploration) in order to remain competitive in a disruptive, digital world (Kollmann 2020, Raisch et al. 2009). In the strategic development process, however, it is important to note that the digitalisation and digital transformation of a tourism and hospitality company does not necessarily have to be disruptive and radical. It is important to bear in mind that sustainable business models and concepts can often be realised through intelligent adaptation rather than radical reinvention. Digitalisation in tourism and hospitality is not always about reflexively replacing material or physical elements of service design with digital ones, but rather about striking the right balance. Furthermore, the digital transformation of companies is not always necessarily about a radical change in strategy, but rather about the question of whether and how new digital technologies can be used to transform familiar rather than new customer needs and wishes into satisfying or inspiring customer experiences and customer experiences. (Furr/Shipilov 2021)

The starting point for such strategic development processes is challenging, if not problematic, for many tourism and hospitality companies. Large segments of the tourism sector, such as hospitality, gastronomy, and leisure/cultural businesses, are traditionally considered industries with a weak technological (digital) affinity. This is attributed to the low digital maturity and productivity levels of many stakeholders in these sectors, stemming from a critical and destructive attitude toward new information and communication technologies (O´Connor 2021; Sigala 2014). This mindset derives from a mental model that views digitalisation and hospitality as opposing constructs. In this perspective, digitalisation is not only seen as contradicting the self-image of hoteliers or restaurateurs as hosts but also as a threat to the identity of an industry that primarily defines itself as a "people business". The traditionally lived industry or company identity, coupled with other identity-forming structural components in tourism and hospitality, such as small and medium-sized structures and the dominance of owner- or family-run businesses, is being questioned by digitalisation. This has led to an identity crisis among many industry players, fearing a corresponding loss of identity internally and externally in their businesses (Gardini 2022).

Another issue to be considered is, that despite a growing openness and willingness to change towards new digital technologies and methods in tourism and hospitality, particularly in the development of digital-based business models and digital distribution, many businesses currently feel inadequately prepared for the digital future (Thomas 2024; Carlisle et al. 2021; Laesser 2021) or fall behind their own expectations (Gardini/Sommer 2023; Borkmann 2020). Furthermore, the digital research and innovation landscape, technology diffusion, and the knowledge level of employees in the tourism and hospitality sector still show very low values compared to other industries (Demary/Goecke 2021; Hotelhero 2020). Digitalisation hits the tourism and hospitality industry at two of its weakest points, highlighting a longstanding need for systematic innovation management and professional human resource management. Employees in recent years not only face a continuous image crisis in the industry but also find that leadership culture and principles in much of the tourism and hospitality sector strongly contradict the requirements of digital transformation processes and the characteristics of a digital mindset. Leadership styles are often perceived as conservative, patriarchal, authoritarian, hierarchy-focused, and less employee-oriented (Francis/Baum 2018; Gardini 2016; Kusluvan et al. 2010). Holding onto outdated corporate cultures, a lack of risk readiness, and rigid forms of organizational structure are particularly critical given the expectations of Generations Y and Z, who anticipate not just a digital mindset from their future employers but also seek different lifestyles and work approaches compared to their predecessors.

If one assumes that digitalisation is a central element of corporate strategy and transforms a company at all levels, both academia and practice are in agreement (Kollmann 2020; Gnamm et al. 2018): "Digitalisation is a top management issue" when it comes to the digitalisation and the relevance of the digital for the success or failure of a company. Successful leaders in tourism and hospitality, whether individuals, companies, or institutions, generally have a quite precise idea of what they want or do not want, and what they are willing to do for it. From a leadership perspective, a normative approach is necessary for every tourism and hospitality company, emphasizing the philosophical and cultural dimension of digital transformation processes and initiating a development process with a focus on the specific identity of a destination, hotel or restaurant (Goran et al. 2017). The ultimate goal is an

unequivocal market-oriented and customer-centric understanding of the organization, transcending digital or analog identity struggles (Gardini 2021).

Conclusion

It can still be asserted for the tourism and hospitality industry as a whole that the strategic and cultural dimension of digital transformation is still underestimated by many stakeholders. Leadership in times of digital transformation however, demands, in addition to a strategic approach, nothing less than a strong intellectual and cultural adaptation, especially requiring openness, flexibility, and engagement from all stakeholders involved. The use of technology should always be a means to an end, with a clear focus on creating substantial customer value and ensuring the competitiveness and future viability of the company. While traditional players show a certain openness and willingness to embrace new digital technologies and work methods, it must be acknowledged that the economic and digital reality is still moving significantly faster than the psychology and mindset of those involved in this process. A significant future challenge for many tourism and hospitality companies is, therefore, to develop a comprehensive understanding of digital and analog management throughout the entire organization, going beyond individual activities, instruments, and analysis methods. This is crucial to transition from being driven by technological developments to being the driver of company-specific digitalisation activities and thus creating the conditions to continue thriving in competition.

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AI in Restaurant Business: a Challenge for Science and Practice in Serbia

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Abstract

The present research analyzes the current state of AI (artificial intelligence) in the restaurant sector in Serbia. Google survey based on relevant key words (artificial intelligence, restaurant, gastronomy, and restaurant business) estimate high level of presence technological companies offering solutions for restaurants. But, process of AI implementation is relatively slow in Serbia, and the main aspect of AI use is substitution of human tasks by AI. Survey of Serbian scientific database "Scindeks" shown scientific research of AI in the field of restaurant business is far behind the developed countries. Screening the use of AI in Serbian restaurants based on polling of 48 managers indicate that AI application in Serbian restaurants is limited. In general, staff has low level of knowledge and development of skills about AI, but they are ready to learn. Also, as consequence of that situation, level of representation of AI in restaurant is low.

Key Words:

Artificial intelligence, Restaurant business, Technology, Smart Business

Introduction

Innovations in the restaurant industry imply any changes, whether it is a complete novelty, a novelty taken over from the competition or an improvement of already existing products and services (Su, 2011). Lee, Hallak, and Sardeshmukh (2016) distinguish five possible areas of innovation (product, service, process, management and marketing innovation). Unlike manufacturing activities, there are some specifics in the restaurant business. Restaurant products are made of tangible (product in the classical sense) and intangible (service) components (Shcherbak, 2016). Also, restaurant products are difficult to protect with patents and copyrights, but their continuous introduction into restaurants provides a competitive advantage. Another characteristic of restaurant services compared to industrial services (where machines are increasingly used) is the more significant involvement of staff in the service process (Shcherbak, 2016). Also, for employees in restaurants, there is no scheduled part of working time to deal with the development of innovations, so innovations are mostly the result of teamwork realized during working hours as part of regular work activities (Albors-Garrigos, Barreto, García-Segovia, Martínez-Monzó, & Hervás-Oliver, 2013).

Innovations in the restaurant industry can be achieved by introducing: 1) culinary innovations (Lee et al., 2016), 2) innovative equipment (Albors-Garrigos et al., 2013), 3) innovative services (Lee et al., 2016), 4) innovative food preparation and serving techniques (Albors-Garrigos et al., 2013), 5) marketing innovations (Lee et al., 2016), 6) innovative design and atmosphere (Ivkov, Blešić, Simat, Demirović, Božić, & Stefanović, 2016), 7) innovative technologies (Shcherbak, 2016), 8) innovation in management (Lee et al., 2016; Shcherbak, 2016), 9) eco- innovation (Sharma, Chen, & Liu, 2020), etc.

Artificial intelligence (AI) is a relatively new technology based on the simulation of human intelligence operations by computer (Wang, Di Renzo, Stanczak, Wang, & Larsson, 2020). The application of this technology helps people to achieve better business results, but its use requires new knowledge and skills (Ruel, & Njoku, 2021). It use require a detailed understanding of how to take advantage new opportunities and technologies in order to perform required tasks in particular business (Davenport, & Ronanki, 2018). Many studies are focused on investigation possible applications of AI in restaurant business considering the applicability and effects of AI in business processes (Berezina, Ciftci, & Cobanoglu, 2019, Ivanov, Gretzel, Berezina, Sigala, & Webster, 2019, Maier, & Edwards, 2020), while detailed empirical data are limited due to low adoption AI in practice (Ivanov et al. 2019; Cain, Thomas, & Alonso, 2019). But, it can expect that increasing academic interest in AI in the restaurant business (Berezina et al. 2019; Blöcher, & Alt, 2021) will contribute to transfer of AI to practical activities.

AI can be applied in different industries and services like smart farming, food processing industry, healthcare industry etc., including restaurant business (Blöcher, & Alt, 2021, Indrajeet, Jyoti, Noor, & Shahnawaz, 2021, Lee, & Yoon, 2021, Li, Yin, Qiu, & Bai, 2021). For example, machine learning (ML) application is useable for different aspects of restaurant business: ML in food delivery, AI-based customer feedback system, food vending terminals and applications, AI-based online restaurant search engine, voice assistants, self-ordering kiosk system, robotics for food industry and revenue predicting using ML (Indrajeet et al. 2021). Although AI technology is not completely new, its application in restaurant business is recent phenomenon. But, the adoption of AI in restaurant industry can lead to improvements in customer service processes and productivity growth (Berezina et al. 2019; Blöcher, & Alt, 2021, Daradkeh, Hassan, Palei, Helal, Mabrouk, Saleh, Salem, & Elshawarbi, 2023). Also, the development of robots for restaurant business is attractive. That includes either virtual service robots (i.e. chatbots, digital assistants) or physical robots (Murphy, Gretzel,, & Pesonen, 2019, Santiago, Borges-Tiago, & Tiago, 2024, Spence, 2023).

In general, AI application in restaurant business was much more discussed by researchers from the US or Asia than by researchers from the Europe (Blöcher, & Alt, 2021). According to our knowledge, this topic almost was not the subject of researchers from Serbia. Therefore, through this research we wish to obtain basic information about AI application in restaurant business in Serbia and answer to research questions: What is current situation with the use of AI in the restaurant industry in Serbia?

Methodology

This study consist of three parts: 1) general analysis of data about AI in restaurant sector based on search relevant documents on Google; 2) analysis scientific papers subjected to AI in restaurant business; 3) screening use of AI in Serbian restaurants.

General analysis of data about AI in restaurant sector was conducted using adapted methodology described by Blöcher & Alt (2021), who studied AI and robotics in the European restaurant sector. Therefore, first step was data collection by search relevant documents on Google. For this aim several key words on Serbian were used: artificial intelligence, restaurant, gastronomy, and restaurant business. Initial search using keywords artificial intelligence and restaurant resulted in 308.000 documents. When word gastronomy was added number of documents was reduced to 8.700. After that restaurant business as additional key word was added and number of documents was reduced on 7.510. These documents can be mainly classified as newspaper articles, announcements on informative internet portals, announcements on the websites of educational and scientific institutions, announcements on the websites of companies. By reviewing the offered documents, those whose content is relevant to the research objective were singled out. The final number of documents was 68. Based on content of those documents we analyzed: 1) application fields of AI in Serbian restaurants; 2) which type of AI are included in that applications; 3) response of costumers and service provider to the use of AI in restaurants.

Analysis scientific papers subjected to AI in restaurant business were realized based on review scientific papers in scientific database Scindeks (information system that covers all scientific fields and

contains all scientific papers published in Serbia). Based on the keywords, artificial intelligence and restaurant not a single scientific paper was found in the database. Search repeated only with keyword artificial intelligence and list a list of 98 scientific papers was selected. Selected papers were studied to determine if any of their segments touch on the application of AI in the restaurant industry.

Screening the use of AI in Serbian restaurants was realized based on analysis of 48 restaurants from 5 cities (Belgrade, Novi Sad, Kragujevac, Niš, Zrenjanin). On the portal www.tripadvisor.com 20 best ranked restaurant from mentioned 5 cities were selected. E-mail given on this portal used to ask restaurant managers to answer a short questionnaire, and link to a Google questionnaire was added. The survey conducted in January 2024. The instrument used in this study was designed on the basis of eight elements (items) describing use AI in restaurants: 1) level of knowledge about AI between staff of restaurant; 2) level of representation of AI in restaurant; 3) development of staff skills for using AI; 4) willingness of staff to learn the new skills needed to use AI. The questionnaire consisted of eight closed-ended Likert-type questions rating the items. All questions were measured using a Likert scale of 1 (strongly disagree) to 5 (strongly agree). Total 48 managers from contacted restaurants answered. Data analysis was done using the One-way ANOVA and t-test (using statistical package STATISTIKA 5.0).

Results interpretation

General analysis of data about AI in restaurant sector

Data obtained from documents selected for analysis indicate many opportunities for AI application in restaurant business in Serbia. AI can be used in restaurants for ordering food using mobile applications or websites, for the process of creating personalized offers, analyzing data about consumers in order to align business with their requirements and needs. Several documents were shown that there are many solutions for application of AI in high quality restaurants. Also, several technological companies offer solutions which support one or several different activities in restaurant process of work. From 26 companies which offer AI solutions for restaurants 20 is focused on applications for reservations, food ordering and assisting waiters in tracking orders and billing. Data obtained by Blöcher, and Alt (2021) point to the wider application of AI in restaurant business in Europe including application in front-of-house processes (reputation management, marketing, reservation, customer operations) and in back-of-house processes (management of business and finance, supply chain management, food and beverage preparation, human resources). Kreutzer, and Sirrenberg (2020) categorized AI applications to four application fields: natural language processing (NLP), computer vision, (3) robotics, and (4) expert systems. According to data from 68 documents found in a Google search, the current application in the Serbian restaurant industry can mostly be characterized as natural language processing. The main aspect of AI use is substitution of human tasks by AI. Namely, AI can substitute humans in different activities including food preparation and distribution, ordering process dishes, online reservation, choice of menu, payment choices, ads etc. (Hanks, Line, & Mattila, 2016). In Serbia, some restaurants use chatbots to inform users about the menu and ingredients of the dishes. Also, some restaurants use virtual assistants who answer users' questions, make reservations, and recommend dishes that match the user's requests. Although AI offers numerous benefits for restaurants, research shows that service users do not have a favorable reaction to its implementation (Nozawa, Togawa, Velasco, & Motoki, 2022). Similar to that, despite the various possibilities that AI offers for the improvement of restaurant business, process of AI implementation is relatively slow in Serbia. The reason is the fact that the mentality of the population is such that it is difficult to accept novelties. However, the implementation of new technologies is inevitable and can be expected to grow in the future.

Scientific research of AI regarding restaurant business

Despite research of AI in all sectors including restaurant business is very actual and focus on many different aspects in many parts of word (Berezina et al., 2019, Blöcher, & Alt, 2021, Daradkeh et al., 2023, Li et al., 2021), situation in Serbia is opposite. Based on survey of Serbian scientific database "Scindeks" it is evident scientific research of AI in the field of restaurant business is far behind the developed parts of the world. Although Serbian scientists in other fields of science are very active in AI

research, only one paper was published in the field of hospitality. This paper investigates digital skills in tourism and hospitality as precondition for AI implementation in that sector (Lazić, Bradić Martinović, & Banović, 2023).

Despite the fact, AI is increasingly used in the food and hospitality industry, its application in Serbian restaurants is limited. Managers of Belgrade restaurants evaluated use of AI in restaurants. Based on their responses, items were ranked according to importance (Table 1). According to the analysis of descriptive parameters, items whose scalar averages (Mean) range from 1.86 to 3.64. On the list of four items, "Willingness of staff to learn the new skills needed to use AI" occupies the first position with an average score of 3.64. Namely, managers of restaurants consider that willingness of staff to learn the new skills needed to use AI is medium. Slightly lower values of scalar averages were determined for the following items: "level of knowledge about AI between staff of restaurant" – 2.48; "Development of staff skills for using AI" – 2.22. Item "Level of representation of AI in restaurant" had value 1.86, indicating very low level of representation of AI in restaurants.

Table 1: Elements of AI use in Serbian restaurants

Position	Item	Mean	SD	SE
1.	Willingness of staff to learn the new skills needed to use AI	3.64	0.977	0.095
2.	Level of knowledge about AI between staff of restaurant	2.48	1.122	0.062
3.	Development of staff skills for using AI	2.22	1.131	0.074
4.	Level of representation of AI in restaurant	1.86	0.956	0.066

Notes: 1= strongly disagree; 5= strongly agree; SD – standard deviation; SE – standard error
Source: Author's research

Obtained results are in accordance with finding of Dani, Rawal, Bagchi, and Khan (2022) who estimate that still many people are unaware of the potentials that AI posses. Although Ivanov, Kuyumdzhiev, and Webster (2020) concluded that the stimulation effect of AI may motivate workers to improve skills so as to avoid being replaced by the new technology, our results are less optimistic. But, taking into account that staff in sample restaurant has relatively low level of knowledge and development of skills, which coincide with low level of representation of AI in Serbian restaurants, it is necessary to stimulate staff education in field.

Implications for the advancement of hospitality research and practice

In accordance with need for more research on application AI technology in restaurant business this paper analyzed the current situation in Serbia. Taking into account the fact this topic was not be subject of scientific research, we expect that results of this paper will contribute to activation of scientists to direct investigation to this area. The paper provided empirical evidence about availability offers of technological companies, but also are summarized options of AI is available on Serbian market. Also, collected data should offer practical guidance for decision makers in the restaurant sector.

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Talent management strategies and practices in the age of digital transformation: Building bridges to successful hospitality organisations in the UK, Greece, and Hong Kong

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Abstract

The paper examines Talent Management strategies and practices in the age of digital transformation in 3, 4, and 5-star hotels in the UK, Greece, and Hong Kong. Using a mixed-methods research approach, the study first conducted an online survey with 63 participants from hotels in the countries mentioned above. Secondly, 20 semi-structured interviews were conducted with UK hotel professionals. The results show that hotels that are more mature in digitalisation and digitisation have created a culture of confidence and trust in technology which is conducive to integrating emerging technologies and AI in Talent Management strategies and practices. This is a pilot study that aims to understand the stage in which hotel companies are currently in the digital transformation of TM.

Key Words:

Talent Management (TM), artificial intelligence (AI), hospitality industry, TAM, UTAUT

Introduction

We live in the age of changing mindsets and the rapid development of artificial intelligence (AI) and emerging technologies in all industries around the world. The penetration of advanced technologies in the form of digitisation and automation of processes in the management of human resources in the hospitality industry, as in all sectors of the economy, is identified as one of the new and necessary challenges in the sector (Promsri, 2019; Verhoef et al., 2021). The application of AI and emerging technologies has become evident for HRM strategies such as talent acquisition (Johnson et al., 2020; Pillai & Sivathanu, 2020), talent training and development (Aguinis et al., 2024), talent retention (Kim et al., 2024; Stone et al., 2024). However, it is not certain that employees are aware of the benefits and have accepted advanced technology with equal enthusiasm to what the current narrative claims. The Technology Acceptance Theory (TAM) (Davis, 1989) highlights challenges to be overcome, so that resourcing and managing talents can benefit from digital transformation. This paper addresses the gap by providing an analysis of how emerging technologies and AI impact Talent Management (TM) strategies of recruitment, development, and retention in UK, Greek, and Hong Kong hotel organisations. The study answers the following research questions using mixed methods approach:

1. How much are hotels aware of emerging technologies and AI in talent management and what are their perspectives in using them?
2. What types of emerging technologies and AI do hotels use and to what extent are they used in talent management?
3. What strategies and with what consistency do hotels use emerging technologies and AI in the recruitment, development, and retention of talents?

Literature Review

Digital, Digitalisation, Digital Transformation, and AI

Digitisation is a socio-technical process of converting analogue formats into digital ones (Sandberg et al., 2020) and applying digitalisation techniques to broader social and institutional contexts that make digital technologies infrastructural (Nylen & Holmström, 2015). Digital transformation is a profound change in organisational activities, boundaries, and goals to exploit the possibilities of digital technologies (Matt et al., 2015; Vial, 2019). AI is a decision-support tool that can be used for a wide range of business processes (Wirtz et al., 2018). The AI developed in recent years concerns such complex processes as classification, optimisation, estimation, and image recognition (Agrawal et al., 2019). Therefore, digital transformation is considered a broader concept than information technology-enabled (IT-enabled) organisational change (Vial, 2019), as it is deeply intertwined with multiple levels of organisational reality.

AI for Talent Acquisition

Digitalisation of TM mainly covers three core functions of HRM: hiring, training and development, and retention (Guerra, Danvilla-del-Valle & Mendez-Suarez, 2023). Beginning with recruitment and selection, AI is seen as a new building block that makes it possible to recruit talented employees more effectively. Khandelwal & Upadhyay (2021) claim that recruiting talent and managing diversity can be a major challenge and AI can successfully overcome these challenges. The benefits of using AI for this purpose are manifold. First, AI-based tools such as Applicant Tracking Systems (ATS) enable HR managers to screen resumes, evaluate candidates, and predict the match with a job with remarkable accuracy (Agnihotri et al., 2023). Second, AI can be used to provide analysis based on interviews and organisational needs and suggest appropriate salaries and benefits based on candidates' qualifications (Chowdhury et al., 2022). Third, Van Esch et al. (2019) claim that candidates are more likely to apply online via social media, company websites, mobile applications, and chatbot talent assistants than through traditional recruitment methods.

AI for Talent Training and Development

AI is essential for the training and development of hospitality employees to improve their skills and provide them with an engaging environment (Faqihi & Miah, 2023). The integration of AI can create personalised learning paths that can develop skills, career goals, and performance data to recommend relevant courses and resources (Bashynska et al., 2023). Gamification helps employees to better understand their current skills and the different career paths within the organisation (Simpson & Jenkins, 2015). Chatbots can assess employees' skills, recommend training courses, and connect them with their mentors in the workplace (Nawaz & Gomes, 2019). The application of AR/VR can facilitate the design and delivery of training programmes at different stages of professional development. The use of various AI technologies can help organisations create a learning culture that can be inclusive and provide the ability to close training and development gaps (Kaushal et al., 2023).

AI for Talent Retention

Schiemann et al. (2018) have highlighted that the key to HR for organisations is employee retention, which leads to quality and higher profitability. The key to using AI effectively for employee retention lies in combining big data and machine learning with the human touch (Dorasami, 2021). In addition, AI predictive analytics algorithms identify individuals even before employees consciously intend to leave the company (Das et al. 2022). Through their day-to-day work and behaviour, employees give many signals about their intentions that allow companies to create predictive statistical models that

understand and predict turnover. This information can be used by managers to retain talented employees and offer tailored incentives, rewards, and recognition strategies (Grillo, 2015).

Accepting the use of advanced technology and AI

The adoption of technology in organisations does not occur automatically after operation systems adapt accordingly. Human actors first need to embrace it and endorse its applicability to their work. Technology Acceptance Theory (TAM) states that this is influenced by people's understanding that technology applications in question are useful for their work and easy to use (Davis, 1989). This is fundamentally based on the reasoned action theory (Ajzen & Fishbein, 1980) in which cognitive understandings of initiatives drive people's attitudes and behaviours. Digital transformation in hotel organisations, which belong to a labour-intensive industry, require more than establishing a technical capability in the workplace. The conditions in which it takes place also need to accommodate the needs of employees according to their positions, encouraging and motivating them to make best of use of them consistently (Ye & Chen, 2024). Therefore, according to the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) acceptance of technology is a matter of what people expect of the outcomes from its use (performance expectancy), of the effort they put in it (effort expectancy), the support they receive from their community (social influence), and conditions in which use of technology takes place in their workplace (facilitating conditions).

Methodology

A mixed-method research approach was used in the study which ensured the validity of the data collected and the triangulation of results (Cresswell & Poth, 2016). The research was ethically approved by Birmingham City University.

First, the quantitative research stage used online survey approaching employees in 3- to 5-star hotels in the

UK, Greece, and Hong Kong. The survey took place in the first quarter of 2024. It was designed to measure the perceptions and usage of emerging technologies and AI in talent management, with reference to the technology use scale of the TAM (Davis, 1989) and UTAUT models (Venkatesh et al., 2003).

We adapted 8 questions from UTAUT to identity the performance and effort expectancy of using the emerging technologies (1 being 'Strongly Disagree' and 5 being 'Strongly Agree'). Respondents were also asked to rate the frequency on a Likert-type 7-point scale (1 being 'Never' and 7 being 'Always') with which their company uses 10 emerging technologies in TM. Adopting the statement that TM covers three core HRM functions: talent acquisition, development, and retention, several questions aimed to explore the frequency of use of AI specifically in the abovementioned functions. In addition, 7 questions centred around creating a work culture that encourages and facilitates employees to use technologies at work.

A total of 63 valid responses were received. Most respondents work in the UK (71.43%), with less coming from Greece (23.81%) and a few from Hong Kong (4.76%). The selection of those countries was based on two main arguments: (i) they reside in three very different cultural locations, so the findings could potentially show variations which can lead to useful discussions – UK being a very representative western country; Greece being a very traditional touristic destination of the Southeast Mediterranean; and Hong Kong being a progressed East-Asian destination with strong ties with the west. (ii) The researchers were very familiar with the hospitality management market of each one of those countries, so access to participants was easier. Most of the participants worked in companies with 50-299 employees (63.49%). For further characteristics of survey respondents, please refer to Table 1.

Table 1. Characteristics of Survey Respondents

Demographic	Number	Percent
Gender:		
Male	41	65.08%
Female	22	34.92%
Age:		
18-24 years old	1	1.59%
25-34 years old	19	30.16%
35-44 years old	30	47.62%
45-54 years old	9	14.29%
Over 55 years old	4	6.35%
Education:		
Technical/vocational training or equivalent	18	28.57%
High school/college graduate	5	7.94%
Associate degree/diploma or equivalent	9	14.29%
Bachelor's degree	14	22.22%
Master's degree or above	17	26.98%
Job Rank:		
General staff	6	9.52%
Specialist	16	25.40%
Manager	23	36.51%
Senior Manager	12	19.05%
C-Level Executive (CEO, CMO, etc)	4	6.35%
Company Owner	2	3.17%
Work Location:		
UK	45	71.43%
Greece	15	23.81%
Hong Kong	3	4.76%
Company Size:		
1 – 49	1	1.59%
50 – 299	40	63.49%
300 – 999	17	26.98%
1,000 - 4,999	4	6.35%
5,000 or more	1	1.59%

Following some key findings from the survey which referred to a different attitude of organisations who were more familiar with digitalisation we took a qualitative step in the study focusing only on the UK. Thus, to gain a more in-depth understanding of the actual practices and examples of how hotels currently use emerging technologies and AI in TM 20 semi-structured interviews were conducted from January to February 2024 via MS Teams. The participants were employed in 3- and 4-star hotels. Non-probability purposive sampling was adopted which involved the deliberate selection of the individuals suitable for the research purposes (Polkinghorne, 1988). The selection of participants for the interviews and the survey was based on relative criteria: hotel star rating, position held, hotel department, years of experience and nationality (Jones et al. 2013). The interviews lasted 60-90 minutes. Table 2 provides an overview of the categories of interviewees. A total of 11 managers, 7 from the HR department and 4 from other functions, as well as 9 non-managerial employees, were interviewed. To maintain anonymity, all interviewees were recorded as participants 1, 2, etc.

Table 2. Characteristics of Interview Respondents

Participant Number	Hotel Star Rating	Position Held	Hotel Department	Years of Experience	Nationality
Participant 1	3*	HR Manager	Human Resources	5	Polish
Participant 2	4*	Hotel Manager	Management	8	English
Participant 3	4*	F&B Assistant	Front of House	6	English
Participant 4	3*	Reception Manager	Front of House	7	Latvian
Participant 5	4*	HR Manager	Human Resources	4	English
Participant 6	4*	Pastry Chef	Kitchen	3	Portuguese
Participant 7	3*	HR Manager	Human Resources	12	Latvian
Participant 8	3*	HR Officer	Human Resources	7	English
Participant 9	4*	Night Manager	Nights	8	Italian
Participant 10	4*	Guest services staff	Conference & Banqueting	7	Bulgarian
Participant 11	4*	C&B staff	Conference & Banqueting	5	Romanian
Participant 12	3*	Duty Manager	Management	10	Bulgarian
Participant 13	4*	Guest services Assistant	Conference & Banqueting	7	Polish
Participant 14	3*	Sommelier	Conference & Banqueting	8	English
Participant 15	3*	HR Manager	Human Resources	10	English
Participant 16	4*	Receptionist	Front of House	4	Italian
Participant 17	3*	HR Manager	Human Resources	7	Bulgarian
Participant 18	4*	Bar staff	F&B	5	English
Participant 19	4*	Cluster HR Manager	Human Resources	11	English
Participant 20	4*	Chef de partie	Kitchen	5	Lithuanian

Findings and Discussion of Quantitative Data

Performance and Effort Expectancy

As illustrated in Table 3, the respondents generally agreed on the usefulness of emerging technologies in their jobs (M = 3.96, SD = 0.68). They also perceived emerging technologies as easy to use (M = 3.87, SD = 0.81)). The data aligns with a SHRM feature article by Zielinski (2023), which indicates that organisations recognise the benefits of using emerging technologies.

Table 3. Performance and Effort Expectancy

Items	Mean	Standard Deviation
Performance Expectancy:		
I find emerging technologies useful in my daily life.	3.83	0.64
Using emerging technologies increases my chances of achieving things that are important to me.	3.94	0.62
Using emerging technologies helps me to accomplish things more quickly.	3.94	0.76
Using emerging technologies increases my productivity.	4.14	0.67
Overall	3.96	0.68
Effort Expectancy:		
Learning how to use emerging technologies is easy for me.	3.98	0.81
My interaction with emerging technologies is clear and understandable.	3.90	0.87
I find emerging technologies easy to use.	3.83	0.79
It is easy for me to become skilful at using emerging technologies.	3.78	0.75
Overall	3.87	0.81

Usage of Emerging Technologies (and AI) in TM

The quantitative data from this study (see Table 4) suggests that these technologies are not yet widely used in the hospitality industry. Despite the increasing popularity of emerging technologies in the business world and their use in TM is a notable trend (Wiblen & Marler, 2021), respondents occasionally used data analytics (M = 4.38, SD = 1.17), cloud technologies (M = 4.29, SD = 1.20), mobile applications (M = 4.27, SD = 1.39) and automation (M = 4.13, SD = 1.22) in TM, while they rarely use the other 6 types of technologies in TM.

Regarding the use of AI in TM, the mean values for talent acquisition (M = 3.84, SD = 1.56), talent development (M = 3.75, SD = 1.49), and talent retention (M = 3.70, SD = 1.47) indicate a tendency towards infrequent to occasional use.

Table 4. Usage of Emerging Technologies (and AI) in Talent Management

Items	Mean	Standard Deviation
Usage of Emerging Technologies in Talent Management:		
My organisation uses artificial intelligence in talent management.	3.95	1.52
My organisation uses automation in talent management.	4.13	1.22
My organisation uses blockchain in talent management.	3.62	1.51
My organisation uses cloud technologies in talent management.	4.29	1.20
My organisation uses data analytics in talent management.	4.38	1.17
My organisation uses gamification in talent management.	3.75	1.56
My organisation uses machine learning in talent management.	3.81	1.46
My organisation uses mobile applications in talent management.	4.27	1.39
My organisation uses virtual reality (VR) / augmented reality (AR) in talent management.	3.84	1.57
My organisation uses wearable technologies in talent management.	3.95	1.60
Overall	4.00	1.44
Usage of AI in Talent Acquisition:		
My organisation uses AI to review resumes, CVs, and cover letters.	3.90	1.51
My organisation uses AI to produce an automated employee recruitment.	3.62	1.59
My organisation uses AI to customise job specifications and find appropriate candidates.	3.83	1.41
My organisation uses AI to shortlist candidates for interviews.	3.98	1.73
My organisation uses AI to produce job descriptions.	3.86	1.56
My organisation uses AI to generate specific interview questions prior to interviews.	3.83	1.57
Overall	3.84	1.56
Usage of AI in Talent Development:		
My organisation uses AI to identify learning & development needs.	3.56	1.38
My organisation uses AI to develop learning activities and materials.	3.86	1.40
My organisation uses AI to customise personalised development opportunities.	3.65	1.47
My organisation uses AI to analyse learning & development data.	3.83	1.56
My organisation uses AI to evaluate the effectiveness of talent development strategies.	3.87	1.63
Overall	3.75	1.49
Usage of AI in Talent Retention:		
My organisation uses AI to identify factors contributing to employee attrition.	3.76	1.42
My organisation uses AI to generate talent engagement & retention strategies.	3.70	1.43
My organisation uses AI to analyse talent sentiment data.	3.65	1.58
Overall	3.70	1.47

However, the dispersion within the data set is significant, as the standard deviation was above 1 for all items. This discrepancy suggests that certain organisations are at the forefront of driving this trend in the industry, while others hardly ever use them. Therefore, further analysis was done. Table 5 shows that hotels in the UK have consistently higher average scores for all aspects of TM compared to those in Greece and Hong Kong. In Greece, emerging technologies and AI were used less frequently in TM,

but responses were more varied, indicating less uniform implementation. This additional analysis provides only a preliminary insight due to the unevenly distributed sample sizes across the three countries.

Table 5. Comparison of Usage of Emerging Technologies and AI in Talent Management among Three Countries

Usage	UK (n = 45)		Greece (n = 15)		Hong Kong (n = 3)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Usage of Emerging Technologies in Talent Management	4.41	0.92	3.53	1.98	3.80	1.10
Usage of AI in Talent Acquisition	4.49	1.00	2.00	1.60	2.00	0.84
Usage of AI in Talent Development	4.41	0.91	2.00	1.48	2.33	0.49
Usage of AI in Talent Retention	4.45	0.79	1.80	1.27	2.33	1.08

Digital Savvy Culture Strategies

In addition, the quantitative data shows that hotels are making efforts to create a digitally savvy working environment through various means (see Table 6). In line with the findings that hotels are beginning to use advanced technologies in TM, they are currently relying on external technical experts (M = 4.51, SD = 0.88) and encouraging their staff to use emerging technologies (M = 4.41, SD = 1.17). However, providing devices (M = 4.17, SD = 1.19) and prioritising these as performance goals (M = 4.14, SD = 1.40) may not be effective at this stage to promote a digital culture in the workplace (Dittes et al., 2019).

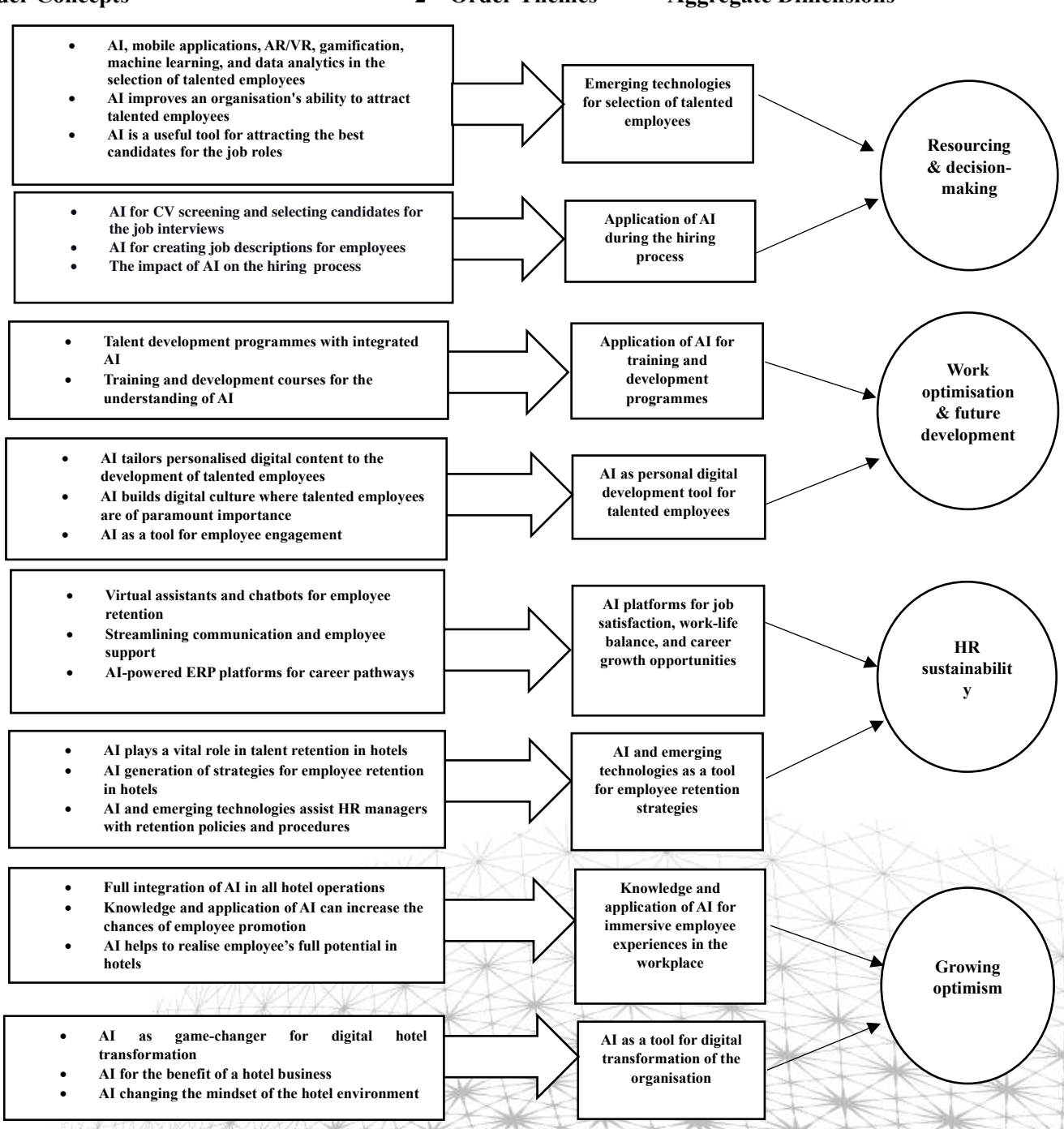
Table 6. Digitally Savvy Culture Strategies

Items	Mean	Standard Deviation
My organisation encourages employees to use emerging technologies.	4.41	1.17
My organisation offers opportunities for employees to learn emerging technologies.	4.24	1.16
My organisation provides software/equipment for employees to use emerging technologies.	4.17	1.19
My organisation outsources projects to vendors with good emerging technology skills.	4.51	0.88
My organisation hires IT staff with good emerging technology skills.	4.35	1.32
My organisation includes usage of emerging technologies in performance goals.	4.14	1.40
Leaders in my organisation show commitment to use more emerging technologies in business.	4.29	1.22
Overall	4.30	1.20

Findings and Discussion of Qualitative Data

The qualitative part of the research worked towards triangulating the data that emerged in the previous research method. The qualitative analysis of the interviews followed established techniques and procedures for naturalistic inquiry and grounded theory building (Glaser & Strauss, 1967) and consisted of the following series of steps: 1) Interview scripts were entered into NVivo12 to organise the initial responses; 2) Following Gioia et al. (2013) approach to thematic analysis, a series of codes were generated to create first-order categories; 3) Looked for connections between the first-order categories that could lead to second-order themes; and 4) Second-order themes were organised into overarching themes to create aggregate dimensions. To strengthen the trustworthiness of the data, a second member of the research team independently coded the interviews and both analysts checked the consistency of the final aggregated dimensions, as described in Figure 1. Finally, we conducted "member checks" (Nag et al., 2007) with the research participants to ensure that our interpretive analysis made sense to the interviewees.

Figure 1. Data Structure



Resourcing & Decision Making (see Table 7)

Emerging Technologies for Selection and Hiring of Talented Employees

The research found that AI is being used in UK 3- and 4-star hotels to select and recruit talented staff. Although it has been a learning curve for recruiters, they claimed that they use it successfully to improve the quality of candidate selection, assess job skills faster, and strategically match jobs with advertised hotel positions. This finding is in line with Stone et al. (2024) findings who emphasise that the use of AI in talent acquisition helps to fill vacancies faster, improve the quality of applicants and minimise undesirable hires. The results show that 4-star hotels have particularly introduced gamification with real-life scenarios aimed at evaluating the characteristics of hired candidates. The gamification approach can be an effective way of recruitment, especially for the millennial generation, where points or badges are awarded for employee performance (Joy & Assistant, 2017).

Work Optimisation & Future Development (see Table 8)

Application of AI for Training and Development Programmes

The results show that some 4-star hotels use VR simulations to train employees in different departments: reception, C&B, kitchen, and management. The training aimed to provide employees with a more immersive hospitality experience. Ferreira et al. (2021) claimed that the use of VR aims to change the paradigm of virtual human resource development (VHRD). VHRD focuses on the integration of human imagination with technology to create boundless formal and informal learning opportunities. Also, VR gaming programmes are used for preparing special meals, conducting orientation programmes, and career development courses (Khandelwal & Upadhyay, 2021).

AI as Personal Digital Development Tool for Talented Employees

The research found that some 3 and 4-star hotels in the UK are using AI for various C&B purposes to improve customer service and revenue management. AI was found to have a greater impact on digital natives, millennials, and generation Z, who prefer to use AI-based HR tools that send messages and offer chats on their social media with company updates, goals, initiatives, and promotions. Waleed et al. (2023) claim that millennials and generation Z spend most of their time on social media to connect with other people. Therefore, AI-based HR tools that provide updates linked to social media could effectively speed up communication with this group of employees. This finding was in line with UTAUT theory (Venkatesh et al., 2003) that the influence of important others boosts the usage among younger generation of employees in the workplace.

HR Sustainability (see Table 9)

AI Platforms for Job Satisfaction, Work-life Balance, and Career Growth Opportunities

Interview responses revealed that 3- and 4-star hotels in the UK that have reached a high level of maturity in emerging technologies and AI are using Enterprise Resource Planning (ERP) to monitor work-life balance and develop career opportunities for hotel employees. Yathiraju (2022) asserted that ERP with integrated AI deploys software and programmes to manage all essential supplies, development, facilities, finance, and other operations of a business. The research found that ERP platforms with AI-powered data talent intelligence aim to create connected learning and growth experiences, enable personalised development, and build employee capabilities. Appelbaum et al. (2017) asserted that ERP platforms that create AI-powered talent experiences help unleash the boundless potential of the workforce and streamline the way this is achieved successfully.

AI and Emerging Technologies as a Tool for Employee Retention Strategies

The research participants from various hotel functions revealed that hotel management reports aided by AI predictive analytics effectively facilitated incentives, rewards, and recognition to employees, which ultimately have led to the reduction of turnover rates. This finding is in line with Schweyer (2018), who argues that predictive analytics for employee retention is one of the most mature and

straightforward solutions in the field of predictive workforce analytics. Furthermore, predictive analytics identifies which employees are at risk of leaving the organisation even before employees consciously intend to leave (Das et al., 2022).

Growing Optimism (see Table 10)

Knowledge and Application of AI for Immersive Employees' Experiences in the Workplace

It has been noted that some 3 and 4-star hotels are training their staff in AI and emerging technologies by providing immersive training. Examples given in the interviews included on-demand AI training, immersive training simulations, and gamification where employees received badges for completed tasks. However, not all hotels were able to offer these applications as they lacked experts who could deliver such training. In these cases, managers demanded additional investment in this technology and resisted the introduction of applications before the right conditions were in place. Davenport and Ronanki (2018) claim that the adoption of AI is still too expensive and too risky, as the technology is new, and managers lack the expertise and understanding of how to use it successfully in their organisation. This is in line with UTAUT theory that highlighted availability of technical infrastructure and facilitating conditions determine the usage of the AI in the hospitality organisations (Venkatesh et al., 2003).

AI as a Tool for Digital Transformation of the Organisation

Finally, the study found that AI is perceived as a decisive factor for the hospitality industry. Digitally mature hotels are using AI and emerging technologies to optimise hotel rates, for training and development purposes, to communicate with internal and external customers, and for employee engagement and retention. This fact is changing the mindset of hotel managers who are embracing the digitalisation of the business and the wider use of AI for the benefit of employees and customers. This realisation is especially true for digitally mature organisations that adopt the ongoing digital transformation systematically and efficiently through management practises, upskilling employees and developing a deeper understanding of the process of adopting digital technologies (Nikopoulou et al., 2023). The perceptions of hotel professionals about the usefulness and easiness of advanced technology and AI is a promising finding that allows some positivity for its enthusiastic support by managers and a fast adoption into TM strategies for recruitment, training and retention of their existing and the rising star performers.

Conclusion

This research was a pilot study, which showed the stage in which hotel companies are currently in the digital transformation of TM. The main research question was to explore the perspectives of those on the frontline of decision-making on where and how advanced technology and AI are currently being used in their hotels and for what purpose. The quantitative study revealed that while the academic literature attempts to give the impression that AI is already being used extensively in the industry (Wynn & Lam, 2023) the use of AI applications varies significantly among different parts of the world. Organisations more mature in digitisation and digitalisation (Nylen & Holmström, 2015) have created a culture of trust in technology in hotel operations that is more accepting of the use and inclusion of AI applications for HR purposes, including TM. The UK appears more mature than establishments in Greece and Hong Kong. The qualitative study looked more carefully into the UK market and found that hotel companies have used multiple methods of advanced technology to facilitate recruitment and selection processes, training and development, and talent retention. However, TM seems to benefit primarily from the digitisation of information, a step that has long been achieved through automated and detailed analysis of hard data (Sandberg et al., 2020), which makes decisions easier and faster. Participants indicated that they are familiar with AI due to the widespread technological automated techniques used to respond to customers' needs and improve their experience. The study has therefore shown that TM's digital transformation is taking place in an orderly fashion from the outside in. First, the benefits for guests are agreed upon and defined, and then it is transferred internally to HR to improve the management of their talented employees.

Implications

Practical implications

The practical implications of this research are manifold. First, the study helps HR managers gain a better understanding of the application of AI and emerging technologies to develop TM strategies and practices in the age of digital transformation. Second, the findings suggest that hotel managers from companies that are more mature in digitalisation and digitisation are the frontrunners in using AI applications that help create an operational culture focused on more fully integrating technology into the decision-making process, hence facilitating its use in the delivery of key tasks. Third, talented employees can benefit from the application of AI in ERPs to develop career opportunities, as well as chatbots, AR/VR, and gamification for immersive hotel experiences. Finally, the findings suggest that hotel managers who have successfully integrated AI into hotel operations and have more confidence in AI and emerging technologies can outperform their competitors and gain a competitive advantage as employees are prompt to accept technology and may develop behaviours that foster the use of advanced technologies in their initiative.

Theoretical implications

The theoretical implications of this research are positioned at the intersection between TAM and UTAUT theories. First, quantitative and qualitative data support the high-performance expectancy of AI and emerging technologies. Second, the quantitative data finds that effort expectancy is high meaning that AI and emerging technologies are easy to use. Third, the quantitative data establish that hospitality organisations occasionally use data analytics, cloud technologies, mobile applications, and automation in TM, while they rarely use the other 6 types of technologies in TM. Fourth, the quantitative data reveal that the use of AI in talent acquisition, talent development, and talent retention tends to be infrequent to occasional. Fifth, qualitative data establish that the social influence of peers increases the usage of new technologies in the UK 3- and 4-star hotels. Finally, qualitative data supports that facilitating conditions are pivotal in using emerging technologies.

Research Limitations and Future Research Avenues

The main limitation of this pilot study is the sample size, which collected 63 responses from the research participants from the UK, Greece, and Hong Kong. Furthermore, 20 semi-structured interviews were conducted to get the triangulation of the data. It is acknowledged further research needs to increase the number of research participants. The study lays the foundation for a more comprehensive exploration of this continuum to examine its cultural adaptations in different parts of the five continents where there are recognisable distinctive national cultural traits. Also, a better understanding of the reasons why organisations are willing to integrate digital transformation techniques into TM would help to draw a cognitive map of their decision-making process that contributes to the successful application of TM digital transformation strategies in the hospitality industry.

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Appendix

Table 7. Dimensions, Themes, Categories, and Data

Second-Order Themes and First-Order Categories	Representative Data
Overarching dimension: Attraction practices	
A. Emerging technologies in the selection of talented employees	*A1: "In our hotels, we started to use AI to select talented employees. That was a learning curve, of course, but it paid off successfully. I as HR manager can name a few benefits of it. From my perspective, AI enables hotels to identify more qualified candidates and if we require source additional candidates as well. Also, it minimises the time for search of the top talents, as matching candidates with specific roles can be a very difficult task… That takes lots of time. AI can do this task effectively and fast to select the best candidate for the job role."* *A2: "AI is the way forward to a successful hire, as AI can improve the quality of selected candidates. I clearly understand that it gets all the details right to find the best candidate for a specific job role. It searches through a large amount of data and identifies that one in the talent pool that matches the job skills, that will contribute the most to the success of the company. That is an invaluable task!"* *A3: "I am glad that asked that question, recently, we started to apply AI-powered video games that can assess the traits of the candidates we are going to hire. By playing this game we give them various real-life scenarios that happened in our hotel, where they act, and AI can generate further content on that. That is how we can assess our future hires and potentially can see how the candidate will fit into our organisation."*
B. Application of AI during hiring process	*B1: "AI plays an important role nowadays in the selection of the best candidate. The time of manually going through the CVs has gone and I am glad of it! What I noticed, AI can put certain criteria to screen all CVs and choose the best match for the job. AI matches relevant skills, industry experience, previous roles, and companies worked and provides the best candidate for hire, in some way short-listing them. I strongly believe that the application of AI allows the automation of tedious jobs. Later, it provides suggestions for the interviews for short-listed candidates."* *B2: "I believe that AI is the best tool for CV screening as it removes human biases towards candidates and assesses them on their skills and experience. For me, as an HR manager, it adds value as I can get effective talent attraction to the specified role. I also think that AI gives better employee experience as it can provide feedback to candidates and areas for improvement if this job application was not successful."* *B3: "Recently, we applied AI to hire a Head Receptionist in our hotel. That was a useful experience. Our staff are required to have numerous skills and experience to have to work productively at reception. AI sets multiple real-life scenarios for*

	our potential hires and that provided the best candidates for job interviews."

Table 8. Dimensions, Themes, Categories, and Data

Second-Order Themes and First-Order Categories	Representative Data
Overarching dimension: Development strategies	
A. Application of AI for training and development programmes	*A1: "AI gains its momentum. Our hotel applies VR simulations to train our employees in different departments: reception, C&B, and management. I think it is the way forward as VR provides an immersive experience to all our hotel staff. I also think it teaches how to apply different scenarios, where employee's performance is monitored and regular feedback for improvement provided where knowledge gaps are identified."* *A2: "As a Chef, I can say that sometimes I use AI in recipe creation, optimisation of menu creation, and adding various options including sustainability as well. After that with the help of AI it is added to social media, where customers can rate it and get their feedback. By doing this I can create the most successful menu, that is trendy and has sustainable options that attract lots of clients to our hotel."*
B. AI as personal digital development tool for talented employees	B1: *"As a company, we focused on training our staff. Without AI learning and training nowadays, the business cannot be competitive and offer the best employee value proposition to our staff. In our hotel AI can tailor learning needs to a specific employee and specific tasks they need to complete and make it individualised and meaningful for them. Recently, we launched it to measure the success of our talented employees, for example, in the C&B we created engaging and motivational stimulations that adjust the content based on task completion and provide a report. That helps in customer service and revenue management and demands forecasting."* B2*: "I believe that AI we utilise in our hotel helps to create a more inclusive workforce. What I mean by that AI creates tailored training to each specific individual…Also, AI creates automated content, personalised learning paths, and reports. For our multicultural teams AI translation is available to speak the same language as the learner. That bridges the gap and brings employees a better understanding of the topic."* *B3: "In our hotel, we have lots of generations, such as Z and Millennial cohort of employees for whom emails or regular meetings don't get much value. They are on social media most of the time. What we have done in our hotel, is implement an AI-based HR tool that sends messages and provides chats on their social media with the company updates, goals, initiatives, and promotions. In these ways, all our employees and managers are more connected and better engaged in real charts and burning priority conversations."*

Table 9. Dimensions, Themes, Categories, and Data

Second-Order Themes and First-Order Categories	Representative Data
Overarching dimension: Retention strategies	
A. AI platforms for job satisfaction, work-life balance, and career growth opportunities	*A1: "Our company uses an ERP platform to develop career opportunities for our employees. This system allows us to go beyond the data and understand what people need from a career in hospitality. It provides performance metrics and identifies skills gaps. For example, if someone is underperforming the Cornerstone will help to identify why and how they can succeed. It is harnessing the power of AI that successfully aligned with the company and individual career goals of our employees to create meaningful work experiences."* *A2: "Unfortunately, I am not aware of any AI platforms that our hotel uses for job satisfaction, work-life balance, and career growth. What I know we have old-school appraisal meetings with the line manager, where we discuss all our career milestones and what needs to be achieved in terms of our career progression. If we have all milestones achieved, we have job satisfaction and can achieve work-life balance within the company."* *A3: "In my experience, our hotel successfully uses chatbots and virtual assistants to enhance employee retention. They became a real game-changer, in which our hotel virtual assistants collect employees' feedback, and provide personalised recommendations on the next steps in career development. Finally, they send all information to HR, who can build individual career development courses necessary for our job roles."*
B. AI and emerging technologies as a tool for employee retention strategies	*B1: "In my hotel, I use AI for multiple purposes. First, I use AI for predictive analytics to analyse employee turnover. It operates with multiple data on employee satisfaction, wage structure, motivation, engagement, and work-life balance. It provides a report for the management teams, where we can see clearly what needs to be improved… Currently, we identified that most of our employees are leaving due to poor training and development provided and lack of benefit structure in our hotel. As a management team have considered that and introduced multi-level career development courses and benefit structure for all hotel departments."* *B2: "AI is used for sentiment analysis in our hotel. I will explain what it means, AI analyses our employees' surveys which we complete every two months, and provides links to social media Instagram, Facebook, and LinkedIn, where we post our comments. Sentiment analysis can get the patterns where we show agreement, satisfaction, dissatisfaction, and our feelings and emotions. Based on that it provides reports for the*

	management of the hotel where improvements are needed. That can boost retention of staff if proper actions are taken".
	B3: "In the HR department, we utilise AI for monitoring employee performance and career growth. By analysing satisfaction surveys AI can provide a bigger picture, of who from employees are planning to leave the company or identify personalised career planning. Also, from my personal experience, AI helps to analyse employee engagement, and motivation and sets reminders for the managers when employees are ready for a new challenge in their career."

Table 10. Dimensions, Themes, Categories, and Data

Second-Order Themes and First-Order Categories	Representative Data
Overarching dimension: Future perspectives on AI and emerging technologies	
A. Knowledge and application of AI for immersive employees' experiences in the workplace	*A1: "I work as a Pastry Chef and as such we do not use AI in our hotel. I am aware of it that it can be used successfully for creating new recipes and adding new flavours to the dishes. That is something that we need to develop in our hotel… that would be great!"*
	A2*: "In our hotel, we had AI training recently and I took part in it. I think that knowledge of AI can help me to get a career promotion. As a night manager, I am active at night and most activities can be done during that time. Our management dedicated 1 hour per week to AI training, so I can do it while on duty. The training was very interesting, as it provided virtual training scenarios, where I had to provide solutions to hospitality situations. That was an engaging and immersive experience for me. I enjoyed it!"*
	A3: *"I believe that our hotel is a champion in AI technology and training. We have a lot of AI training on demand, and immersive training simulation, especially with busy hospitality rotas to fit around. Moreover, AI provides instant feedback to the employees' surveys, we use gamification where employees can get badges for task completion. I think it modern tech-savvy approach, where training costs can be cut, as it is provided online at any time employees are not busy during the service."*
B. AI as a tool for digital transformation of the organisation	*B1: "We are facing another technological revolution nowadays. AI is developing rapidly and impacting hospitality. In our hotel, we have an AI concierge that provides information to our guests about all services, provides personalised assistance, and can easily translate information to any language for our guests from different countries. Also, we have AI for price optimisation through AI algorithms, analysing revenue, room pricing, and development of target segments. Ultimately, AI ensures that our guests have seamless experiences".*
	B2: "I think that AI plays a vital role in transferring our hotel. We have chatbots and virtual agents that enhance our customer experience and provide a personal touch. At the bar we started

to use AI for creating cocktails for different occasions, we input data on sales for example of the most popular cocktails and AI provides solutions to what other festive cocktails will be popular this year by using predictive analytics. Could you even think about it before?"

B3: "In my role as a cluster HR Manager, I implement the application of AI in our hotels. I should say that it is a learning curve for us, and it takes some time to understand the technology. Recently, we started to use multiple faces of AI chatbots that deal with guests' inquiries, smart room controls, and AI predictive analytics that analyses guests' preferences and provides individualised approach. Interestingly, we started to use mobile apps for, AI license plate registration that matches data on vehicles with guests staying in the hotel. Finally, we use digital wallets like Apple Pay, and Google Pay to speed up the transactions at reception or online".

Coping with uncertainty, ambiguity and risk – a crucial future competence in entrepreneurship education

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Abstract

Coping with uncertainty, ambiguity and risk is a crucial future competence that needs to be addressed in entrepreneurship education, as the business landscape is increasingly unpredictable. The Erasmus+ project EICAA (Entrepreneurial and Intrapreneurial Competences Assessment Alliance) has undertaken the development of a digital platform explicitly designed for the evaluation and enhancement of entrepreneurial competences. This encompasses a comprehensive spectrum of competences, including those germane to the adept handling of uncertainty, ambiguity, and risk. The evaluative methodology is predicated on a questionnaire-based approach, allowing for a systematic and quantifiable assessment. This paper, situated within the context of a higher education institution in Austria, draws upon empirical data gathered during the year 2023 among cohorts of students specializing in tourism and management. The ensuing analysis endeavors to shed light on significant correlations between Dealing with Uncertainty and specific competences within the EICAA framework, underscoring the need for further attention to these competences.

Key Words:

Entrepreneurship Education, Entrepreneurial Competences, Digital Platform, Students

Introduction

Drawing from Social Cognitive Theory (Bandura, 2001), initially known as Social Learning Theory, entrepreneurial learning is inherently experiential (Cope, 2005; Politis, 2008). In the context of entrepreneurial learning, Social Cognitive Theory suggests that individuals learn entrepreneurial skills and behaviors primarily through observation, imitation, and modeling of others. Within the European Union, entrepreneurship competence development holds a pivotal role in lifelong learning. However, the conventional definition of entrepreneurship often confines it to the establishment of businesses and startup intentions. In contrast, the EU adopts a more comprehensive perspective, defining entrepreneurship as a collection of competences that enable individuals to think and act entrepreneurially. This broader conceptualization sees entrepreneurship as a means of personal development, active goal pursuit, fostering creativity, and instigating change; It underscores the role of

entrepreneurship in empowering individuals, driving innovation, and shaping a future characterized by resilience, ingenuity, and meaningful progress and celebrates entrepreneurship as a vehicle for personal fulfillment, societal impact, and the pursuit of purpose-driven endeavors (Bacigalupo, et al. 2016). The EICAA initiative seeks to pioneer a platform for assessing this spectrum of entrepreneurial competences and proposing interventions to enhance specific entrepreneurial skills. The ultimate goal is to transcend the limited understanding of entrepreneurship, emphasizing its broader relevance and contribution to personal and professional development.

Coping with uncertainty, ambiguity, and risk is an ongoing process that involves a combination of strategic thinking, adaptability, and emotional resilience. Developing these skills will not only help navigate challenges effectively but also contribute to personal and professional growth. University graduates are required to engage in judicious decision-making within the business milieu. This necessitates a nuanced comprehension of fundamental business functions, the application of enterprising knowledge, and the adept utilization of economic and financial principles. Such competencies are indispensable for effectively addressing contemporary transformative phenomena, including the green transition, the aging workforce, and the pervasive influence of digitalization (Bernardó & Teodoro, 2022; Teodoro et al., 2022a, 2022b).

Notwithstanding the imperative nature of these competences, a discernible disjunction emerges between the educational offerings at the management level proffered by academic institutions and the requisites articulated by industry stakeholders (Zehrer & Mössenlechner, 2009). This disjuncture underscores a prevailing incongruity in the alignment of educational curricula with the dynamic demands and expectations of the contemporary business landscape. The chasm between pedagogical endeavors and industry exigencies accentuates the imperative for a recalibration of educational paradigms to better cater to the exigencies of a rapidly evolving business ecosystem.

In the present context, learners are introduced to a competency monitor as a didactic instrument, leveraging it to discern the intricacies of students' proficiencies, both in terms of deficiencies and strengths. Furthermore, its utility extends to a comprehensive review of the knowledge assimilated during prior academic pursuits, with an emphasis on forging meaningful connections between theoretical constructs and practical application. This pedagogical approach entails a conscientious utilization of the competency monitor as a reflective tool, prompting students to engage in an introspective examination of competencies previously acquired and facilitating the transference of such cognitive frameworks into the pragmatic exigencies of the business milieu. This pedagogical strategy is conceived to instill a cognizant and adaptive mindset, wherein students learn to extrapolate and apply their acquired competencies in a purposive manner within the dynamic landscape of business practice.

Literature Review

Risk is a concept characterized by multiple definitions, reflecting its subjective nature and variability in perception across individuals and contexts (Brustbauer & Peters, 2013; Claver et al., 2008). For instance, Palmer and Wiseman (1999, p. 1039) conceptualize risk within organizations as "income stream uncertainty," highlighting its dependence on firm-specific attributes and external factors. Within decision-making frameworks, risk is often articulated as "the probabilistic uncertainty of outcomes resulting from a choice, encompassing variation in the distribution of potential outcomes, their associated probabilities, and subjective values" (Brustbauer, 2016, p. 71).

Nevertheless, a broader and more inclusive definition that serves as common ground across different perspectives is the notion of risk as "the distinction between reality and possibility" (Renn, 1998, p. 50). This definition underscores risk as the delineation between what is known and what could potentially occur, encapsulating the fundamental essence of uncertainty and the inherent challenge of navigating between existing circumstances and future contingencies.

Risk encompasses various categories that span financial, reputational, operational, personal, strategic, and legal dimensions within organizational contexts (Memili et al., 2010). Financial risks pertain to liquidity management, treasury operations, and asset allocation. Image risks are associated with a company's reputation and adherence to regulatory compliance. Operational risks encompass human errors, process inefficiencies, and technological challenges. Strategic risks involve factors such

as market intelligence, employee retention, competitive pressures, and knowledge transfer. Legal risks arise from evolving workplace, environmental, and fiscal regulations (Tavares et al., 2021). Personal risks extend to health issues, mortality, or other individual circumstances (Zahra, 2005). Industry-specific risks emanate from competitors and market dynamics.

Alternatively, risks are categorized into internal and external dimensions by Brustbauer & Peters (2013). Internal risks encompass factors such as quality standards, operational processes, partner relationships, IT infrastructure, and product development. External risks are linked to emerging market trends, technological advancements, customer behavior, political shifts, and supply chain disruptions.

Despite the often negative connotations associated with risk, it can also yield positive outcomes such as increased profitability and enhanced performance (Brustbauer, 2016). This dual nature of risk underscores its role as a critical factor in organizational decision-making and strategic management, where effective risk assessment and mitigation strategies can lead to both resilience and competitive advantage.

Hence, risk, which can be regarded as a future core entrepreneurial competence, is traditionally characterized as the likelihood of an event occurring along with its ensuing repercussions, coexists with uncertainty, a pervasive element in situations where the computation of event probabilities and consequences prove challenging (Takemura, 2021). Within the realm of conducting business operations amid an uncertain milieu, aspiring entrepreneurs consistently grapple with the intricacies of decision-making amidst uncertainty (Bevan, 2022). The entrepreneurial landscape introduces challenges that demand adept navigation through the market's inherent ambiguity, a landscape shaped by the fluidity of client preferences and competitive dynamics (Schindehutte et al., 2006).

An entrepreneur's reaction to uncertainty hinges upon a combination of analytical acumen for risk evaluation and a disposition towards unpredictable circumstances. Amidst heightened uncertainty, the concept of ambiguity tolerance becomes pertinent, denoting an individual's ability to make decisions in situations where information is incomplete (Moriano & Gorgievski, 2008). Moreover, individuals endowed with elevated self-efficacy within a particular domain demonstrate increased resilience when confronted with situations marked by complexity and uncertainty (Gist, 1987).

Nonetheless, entrepreneurs frequently manifest overconfidence by relying on scant information, engaging in optimistic planning devoid of retrospective consideration of past challenges, and maintaining a robust belief in their capacity to exert control over performance even in chance-influenced scenarios. Consequently, when chance factors prominently in a situation, entrepreneurs often perceive lower levels of risk (Chell, 2013). The significance of risk perception is accentuated, as individuals perceiving elevated risk levels across diverse scenarios may exhibit reluctance in recognizing nearly any concept as a genuine opportunity (Baron, 2006). The inclination towards risk-taking is shaped by antecedent experiences or profound knowledge in a particular domain (Sitkin & Pablo, 1992).

Empirical Study

In the pursuit of empirical insights, a quantitative research methodology was employed, manifested in the utilization of the Entrepreneurial and Intrapreneurial Competences Assessment Alliance (EICAA) self-administered questionnaire. This instrument was systematically administered to a cohort of students specializing in tourism and management within the confines of a distinguished higher education institution in Austria during the temporal span extending from November 2022 and December 2023. The questionnaire, designed for self-administration, necessitated respondents to evaluate the applicability of a comprehensive set of 19 entrepreneurial competences. The evaluation process was structured through a meticulously calibrated five-point interval scale, wherein respondents were solicited to assign ratings ranging from 1 denoting a complete lack of knowledge to 5 representing an expert level of proficiency.

The participant pool comprised a total of 186 students, constituting a representative segment of the targeted demographic. This cohort engagement yielded a response rate of 21.77% underscoring the meaningful participation of students in the evaluative exercise. The quantitative data gleaned from this survey affords a structured foundation for subsequent analytical endeavors, offering a quantitative lens

through which to scrutinize and interpret the perceived efficacy and relevance of entrepreneurial competences within the delineated academic context.

Results

In the data sample, 83 students were female and 77 males. The majority of students, n=121, belonged to the age group of 18-23 years old. The age group of 24-30 years counted 57 students, 31-40-years 7 students and one student was between 41 -50 years old.

Table 1. Years of work experience

Work experience in years	Number	Percent
0-2-years	86	46,2
10-plus-years	6	3,2
2-5-years	45	24,2
5-10-years	25	13,4

Of the 186 students, 84 were not employed and 102 had employment. From the employed students, 10 were self-employed.

Preliminary results are exploring the correlations of the competence Dealing With Uncertainty and the relations to the other entrepreneurial competences. The competences can be split into three main areas, which are ideas & opportunity, resources and into action. In the following, the correlations for the competence Dealing With Uncertainty are shown for each competence from the three areas.

Dealing With Uncertainty and Ideas & Opportunity Competences

The area *Ideas & Opportunities* involves the competences Spotting Opportunities (OPP), Design Orientation (Des_OR), Creativity (CREA), Vision (VIS), Valuing Ideas (VALUE_IDEA) and Ethical and Sustainable Thinking (SUST). The correlations in table 2 show that all competences correlate significantly and positively with the competence Dealing With Uncertainity (UNC).

Table 2. Correlations of Dealing With Uncertainty with Ideas & Opportunities Competences.

	UNC	OPP	Des_OR	CREA	VIS	VALUE_IDEA	SUST
UNC	**1**	**0.547****	**0.622****	**0.522****	**0.615****	**0.648****	**0.463****
OPP		1	0.694**	0.685**	0.618**	0.558**	0.522**
Des_OR			1	0.720**	0.675**	0.663**	0.545**
CREA				1	0.699**	0.661**	0.585**
VIS					1	0.733**	0.616**
VALUE_IDEA						1	0.595**
SUST							1

**. The correlation is significant at the 0.01 level (two-tailed).

Dealing With Uncertainty and Resource Competences

The competence area *Resources* includes the competences Self Awareness and Self efficacy (SELF), Motivation and Perseverance (MOT), Mobilising (financial) Resources (MOB_FR), Enterprising Literacy (ENT_L), Mobilising Others (MOB_O), Digital Competence (DIGI). The results in table 3 show that all competences correlate positively with Dealing With Uncertainty (UNC) above a value of 0.5.

Table 3. Correlations of Dealing With Uncertainty with Resource Competences

	UNC	SELF	MOT	MOB_FR	ENT_L	MOB_O	DIGI
UNC	**1**	**0.575****	**0.565****	**0.693****	**0.603****	**0.578****	**0.580****
SELF		1	0.712**	0.641**	0.548**	0.678**	0.496**
MOT			1	0.636**	0.562**	0.570**	0.548**
MOB_FR				1	0.638**	0.604**	0.578**
ENT_L					1	0.561**	0.654**
MOB_O						1	0.570**
DIGI						*	1

**. The correlation is significant at the 0.01 level (two-tailed).

Dealing With Uncertainty and Into Action Competences

The competence area Into Action includes the competences Taking the initiative (INI), Planning and Management (PLAN), Process Management (P_M), Design Validation and Co-Creation (DESN_VAL), Working with Others (OTHERS) and Learning through Experience (LTE). The results in table 4 show that Dealing With Uncertainty (UNC) correlates positively at values above 0.5 with every competence.

Table 4. Correlations of Dealing With Uncertainty with Into Action Competences

	UNC	INI	PLAN	P_M	DESN_VAL	OTHERS	LTE
UNC	**1**	**0.551****	**0.623****	**0.725****	**0.558****	**0.604****	**0.559****
INI		1	0.693**	0.669**	0.403**	0.656**	0.567**
PLAN			1	0.781**	0.501**	0.682**	0.562**
P_M				1	0.528**	0.653**	0.605**
DESN_VAL					1	0.483**	0.467**
OTHERS						1	0.661**
LTE							1

**. The correlation is significant at the 0.01 level (two-tailed).

Discussion

The observed correlations suggest a noteworthy association between the competency of Dealing With Uncertainty and specific dimensions within the EICAA framework.

In the realm of *Ideas & Opportunity Competences*, Dealing With Uncertainty demonstrates the strongest correlation with Valuing Ideas (0.648**), succeeded by Design Orientation (0.622**) and Vision (0.615**). In this context, the substantial correlation (0.648**) between Dealing With Uncertainty and Valuing Ideas implies that students who exhibit a higher proficiency in navigating uncertainty are also more likely to place a significant emphasis on the valuation of ideas. This suggests a potential linkage between the ability to handle uncertain situations and the recognition or appreciation of innovative concepts or opportunities. Similarly, the positive correlations with Design Orientation (0.622**) and Vision (0.615**) indicate that there is a notable connection between Dealing With Uncertainty and these competences. Students adept at managing uncertainty may also demonstrate a propensity for creative design thinking (Design Orientation) and possess a forward-looking, strategic perspective (Vision).

Turning to *Resource Competences*, our findings indicate that Dealing With Uncertainty exhibits the highest correlation with Mobilising (financial) Resources (0.693**) and Enterprising Literacy (0.603**). In this instance, the substantial correlation of Dealing With Uncertainty with Mobilising (financial) Resources (0.693**) suggests a robust positive relationship. This indicates that students proficient in navigating uncertainty are more likely to demonstrate a heightened capability in mobilizing financial resources. In practical terms, this could mean that those adept at managing uncertain situations are also skilled in securing and effectively utilizing financial resources for entrepreneurial ventures. Furthermore, the positive correlation with Enterprising Literacy (0.603**) implies that there is a meaningful association between Dealing With Uncertainty and a broad understanding of entrepreneurial principles and practices. Students who excel in handling uncertainty may also exhibit a higher level of enterprising literacy, encompassing knowledge and proficiency in entrepreneurial concepts and strategies.

Within the domain of *Into Action Competences*, the most notable correlation for Dealing With Uncertainty is with Process Management (0.725**), followed by Planning and Management (0.623**). In this case, the substantial correlation of Dealing With Uncertainty with Process Management (0.725**) suggests a robust and positive relationship. This implies that students who exhibit proficiency in handling uncertainty are highly likely to also excel in the domain of process management. Process management involves organizing and overseeing activities and workflows to achieve specific goals. The positive correlation indicates that those who can navigate uncertainty effectively are also adept at structuring and managing processes in their entrepreneurial endeavors. Similarly, the positive correlation with Planning and Management (0.623**) suggests a significant connection between Dealing With Uncertainty and the ability to plan and manage tasks and resources effectively. Students who demonstrate competence in handling uncertainty are also likely to excel in strategic planning and overall management.

Conclusion

In conclusion, the observed correlations underscore a nuanced relationship between the competency of Dealing With Uncertainty and various dimensions within entrepreneurial competence frameworks. The associations suggest a potential interdependence between the ability to navigate uncertainty and the emphasis placed on valuing ideas, design orientation, and visionary thinking within the entrepreneurial context. Additionally, the correlations highlight the robust link between Dealing With Uncertainty and effective mobilization of financial resources, as well as a comprehensive understanding of entrepreneurial principles encapsulated by Enterprising Literacy in the Resource Competences framework. Furthermore, the competency of Dealing With Uncertainty is strongly correlated with proficiency in effective process management and strategic planning within the domain of Into Action Competences. These findings collectively illuminate the multifaceted nature of entrepreneurial competencies and the integral role of Dealing With Uncertainty in shaping diverse aspects of entrepreneurial success.

As discussed by Bevan (2022), in the context of conducting business operations within an uncertain environment, emerging entrepreneurs consistently grapple with the complexities of decision-making amid uncertainty. The entrepreneurial terrain presents challenges that necessitate adept navigation through the inherent ambiguity of the market, a landscape shaped by the dynamic nature of client preferences and competitive dynamics (Schindehutte et al., 2006). Our findings reveal a significant correlation between Dealing with Uncertainty and specific competences within the EICAA Framework, underscoring the need for further attention to these competences. In the realm of higher education, educators stand to benefit from an awareness of these correlations, allowing them to implement interventions and course modules aimed at enhancing these crucial competences.

The present case study serves a dual purpose: firstly, it illuminates the efficacy and pragmatic applicability of the instruments developed within the framework of the Entrepreneurial and Intrapreneurial Competences Assessment Alliance (EICAA); and secondly, it functions as an illustrative guide delineating the utilization of the EICAA platform. Notably, this study underscores the practical instantiation of the EICAA Competence Monitor within an educational milieu.

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