A SYSTEMATIC REVIEW OF MUSEUM MARKETING RESEARCH: KEY INSIGHTS AND FUTURE RESEARCH DIRECTIONS

SUSTAVNI PREGLED ISTRAŽIVANJA MARKETINGA MUZEJA: KLJUČNI UVIDI I BUDUĆI PRAVCI ISTRAŽIVANJA

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Review

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Abstract

Purpose – The purpose of this paper is to examine the current state of knowledge in the field of museum marketing. More precisely, the paper is aimed at investigating: 1) the advancements in the field of museum marketing and 2) the museum visitor experience as a key related concept. It seeks to identify potential obstacles hindering research and provide future research priorities.

Design/Methodology/Approach – Data based on 1,153 papers from the Web of Science (Core Collection) database was subjected to bibliographic analysis using the VOSviewer (1.60) tool. For the purpose of systematic review, 65 papers were analyzed using ASReview LAB. The paper follows the PRISMA 2020 protocol for reporting systematic literature reviews.

Findings and implications – The results of the bibliographic analysis reveal the complexities of the museum marketing field, which is studied in different fields outside marketing. The evident importance highlighted is that of tourism marketing journals, heritage, and arts management journals. Also, there are apparent clusters of collaboration among authors, as well as co-occurrence among author keywords used in the papers. The results of the systematic analysis identified six categories of the current research: 1) museum visitors, 2) technology in museum, 3) museum services,

Sažetak

Svrha Svrha rada bila je otkriti trenutno znanje u području marketinga muzeja. Točnije, cilj je otkriti: 1) napredak u području marketinga muzeja i 2) posjetiteljevo iskustvo s muzejom kao ključni povezani koncept. Nastoji se identificirati potencijalne prepreke u istraživanju i predložiti buduće istraživačke prioritete.

Metodološki pristup Podaci su analizirani pomoću VOS viewera (1.60) na temelju 1153 rada iz baze podataka Web of Science (Core Collection) za bibliografsku analizu. Za sustavni prikaz odabrano je 65 radova korištenjem ASReview LAB-a. Rad slijedi protokol PRISMA 2020 za izvještavanje o sustavnim pregledima.

Rezultati i implikacije Rezultati otkrivaju kompleksnost područja marketinga muzeja koje se izučava i izvan ovoga područja. Očita je važnost časopisa iz turističkog marketinga, baštine i kulturnog menadžmenta. Dodatno, uočeni su klasteri suradnji autora, kao i podudaranja ključnih riječi u člancima. Rezultati sustavne analize otkrivaju šest kategorija aktualnih istraživanja: 1) posjetitelji muzeja, 2) tehnologija u muzejima, 3) usluge muzeja, 4) učenje i obrazovanje, 5) autentičnost i 6) društveni mediji.

Ograničenja Ograničenja se odnose na razdoblje analize (od 1994. do 2024.) jer je nekoliko radova objavljeno prije toga razdoblja. Isto tako, korišteni su samo podaci iz Web of Science (Core Collection) dostupni na engleskom

4) learning and education, 5) authenticity, and 6) social media.

Limitation The limitations are related to the analysis period (from 1994 to 2024) since a few scientific papers were published before that period. Only data from the Web of Science (Core Collection) available in English was used. Also, the analysis relies on ASReview, which is a Python-based software.

Originality The paper provides the first systematic insight into thirty years of research in the museum marketing field.

Keywords: museum marketing, museum visitor experience, systematic literature review

jeziku. Osim toga, pregled istraživanja oslanja se na ASReview program temeljen na Phytonu.

Doprinos Rad nudi prvi sustavni uvid u tridesetogodišnja istraživanja na području marketinga muzeja.

Ključne riječi: marketing muzeja, posjetiteljevo iskustvo muzejom, sustavni pregled literature

1. INTRODUCTION

Museums are among the oldest types of arts and culture organizations. They are "institutions dedicated to preserving and interpreting the primary tangible evidence of humankind and the environment" (Lewis, 2025). Throughout history, museums have faced numerous challenges and opportunities, one of which was the introduction and acceptance of marketing (Komarac, 2014).

Marketing in museums has evolved gradually since its inception in the 1970s and 1980s. This was followed by a shift in the definition of museums from object-based to people-based institutions (Rentschler & Hede, 2007). Also, museums have faced new market conditions, rising visitor expectations, and new technologies (Komarac, 2014), with marketing serving as one of the answers to new market conditions (Rentschler & Hede, 2007). However, the correct use of marketing has remained challenging in practice since specific types of knowledge are needed to understand the experiential nature of museums' "products/services."

There has been an evident need for systematic reviews in museum marketing. The first attempts to review museum marketing were made by Kawashima (1998), followed by Komarac (2014). Both authors used qualitative narrative analysis of the literature in the museum marketing field (see Kawashima, 1998; Komarac, 2014). However, what appears to be lacking is an objective approach based on quantitative systematic analysis, as recently stressed in conducting systematic reviews in marketing (Coombes, 2024). Also, there is no bibliographic analysis of the field.

To address the identified gaps, three research questions emerged:

RQ1: What is the current state of research in the museum (marketing) field, i.e., which authors and journals are the most influential?

RQ2: What are the key research topics in museum marketing research, and how are they related?

RQ3: What future research streams need more attention from researchers?

This paper is aimed at providing an up-to-date review of the museum marketing field as a dynamic and evolving area. It is organized into three sections. After the Introduction, the Method section explains the procedure for bibliographic analysis using VOSviewer and systematic analysis in ASReview LAB. Then, the results of the bibliographic and systematic analyses are presented. The paper ends with conclusions highlighting future research directions that need more academic attention and research limitations.

2. METHODS

The author followed a 3-R-s protocol by Coombes (2024) to ensure a more rigorous approach to systematic reviewing.

Stage 1 involved planning the review, which included defining the aims and scope of the analysis (Coombes, 2024), as well as identifying relevant keywords and the dataset (database). The Web of Science database (Core Collection, Social Sciences Citation Index (SSCI)) was selected and used as the primary database. This database was selected because it covers papers from various scientific fields and for its influence. It also helped to avoid possible paper duplicates that can emerge when using different databases.

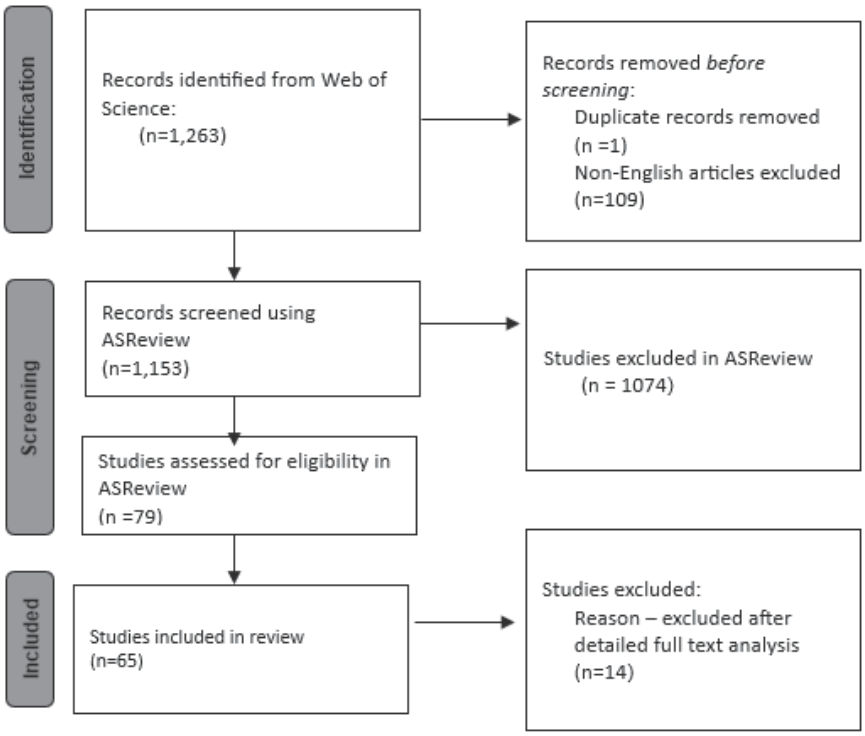
The author identified eligibility criteria for creating a dataset for further analysis.

1. Topic – The investigated topic was museum marketing, so related terms, including museum marketing, museum experience, and museum visitors, were included in the title, abstract, and keywords to gain a comprehensive understanding of the topic.
2. The publication type was articles (conference proceedings papers were excluded), focusing on peer-reviewed papers.
3. English language articles were selected for further analysis, which excluded 109 articles in other languages.

4. Year of publication – the period of thirty years (1994-2024) was selected since there is only a small number of relevant earlier publications (from 1980-1993); only 10 were found (of which only two belonged to the marketing field).

The search strategy focused on identifying keywords that would cover the field of museum marketing (from 1994 to 2024). The search of the Web of Science database identified 1,263 articles. Figure 1 shows the diagram using the PRISMA 2020m protocol for systematic reviews.

FIGURE 1: PRISMA 2020 flow diagram



Source: Author's own research.

The second stage included screening the collected data for duplicates with the help of ASReview LAB, a tool for AI-assisted systematic reviews using Python (ASReview LAB developers, 2025). The screaming found only one duplicate that was probably due to using only one database searched.

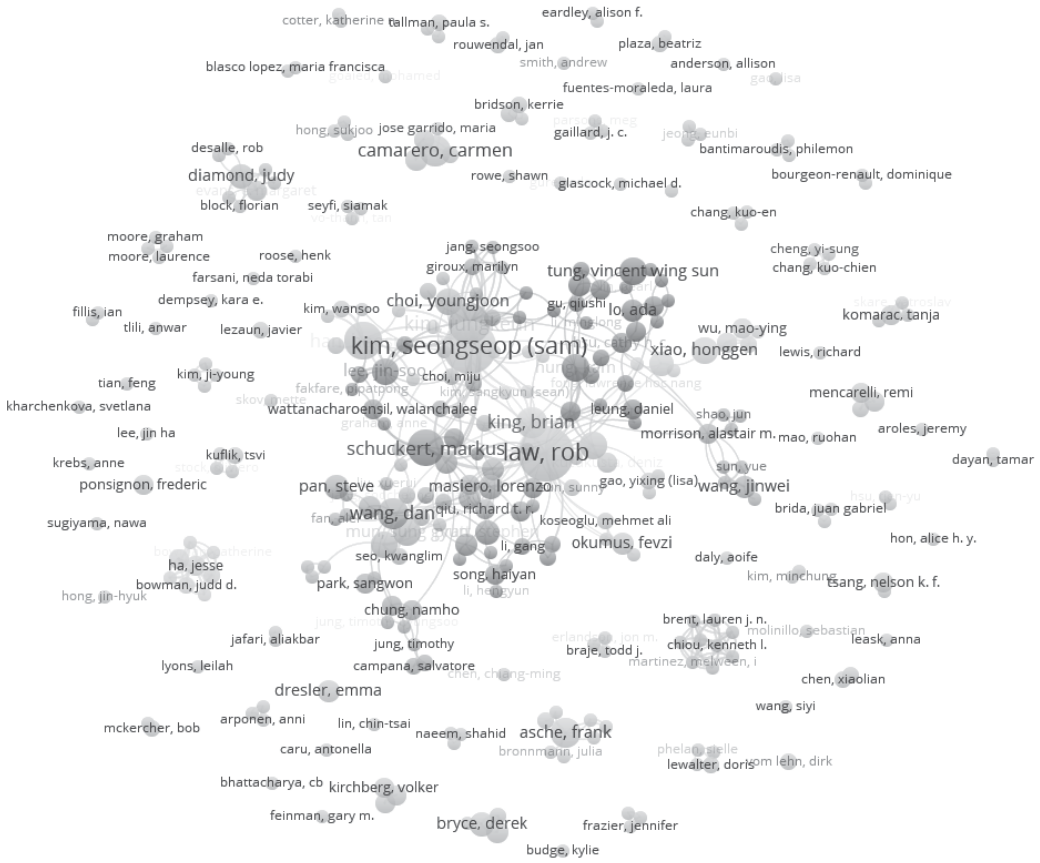
3. RESULTS

3.1. Results of bibliographic analysis

The third stage is the Report stage. To answer the first research question – **RQ1: What is the current state of research in the museum (marketing) field, i.e., which authors and journals are the most influential?** – the bibliography analysis was conducted.

The results of bibliographic analysis yielded interesting findings. First, the results of the co-authorship analysis are shown in Figure 1. The analysis identified 322 authors, with a minimum of two papers and at least one citation in the WoS database. There are visible networks of collaborations among authors, with the strongest clusters shown in the middle of Figure 2 (e.g., author Law, Rob).

FIGURE 2: Network visualization of the co-authorship analysis



Source: Author's own research.

Note: VOSviewer (Counting method: Full counting, Minimum number of documents of author: 2, minimum number of citations of author: 1)

Furthermore, the result of a co-occurrence analysis of author keywords is shown in Figure 3. The minimum number of occurrences of the keywords used was 3 (where out of the 3,927 found keywords, 251 keywords met the threshold of co-occurrence). The most frequent keywords are museum and museums (depending on the nature of the study focusing on one or more museums), followed by China (a context of the study), social media, then marketing and tourism (fields closely linked together), visitor experience, authenticity, augmented reality, and virtual reality. Interesting findings are related to cultural tourism, dark tourism, heritage, and sustainability, as frequently used keywords in the analyzed papers.

FIGURE 3: Network visualization of the co-occurrence analysis of author keywords

Source: Author's own research.

Note: VOSviewer (Minimum number of occurrences of a keyword: 3)

A detailed look at the highlighted cluster on the keyword "museums" shows 94 links to other connected keywords (countries: China and Hong Kong; scientific fields: marketing and tourism; technologies: augmented and virtual reality, but also keywords that suggest "new" museum trends: social media and sustainability). It is worth noting that the keyword "museum marketing" is closely related to tourism marketing and cultural tourism (Figure 4).

FIGURE 4: Network visualization of the co-occurrence analysis of selected author keyword "museums"

Source: Author's own research.

Note: VOSviewer (Minimum number of occurrences of a keyword: 3)

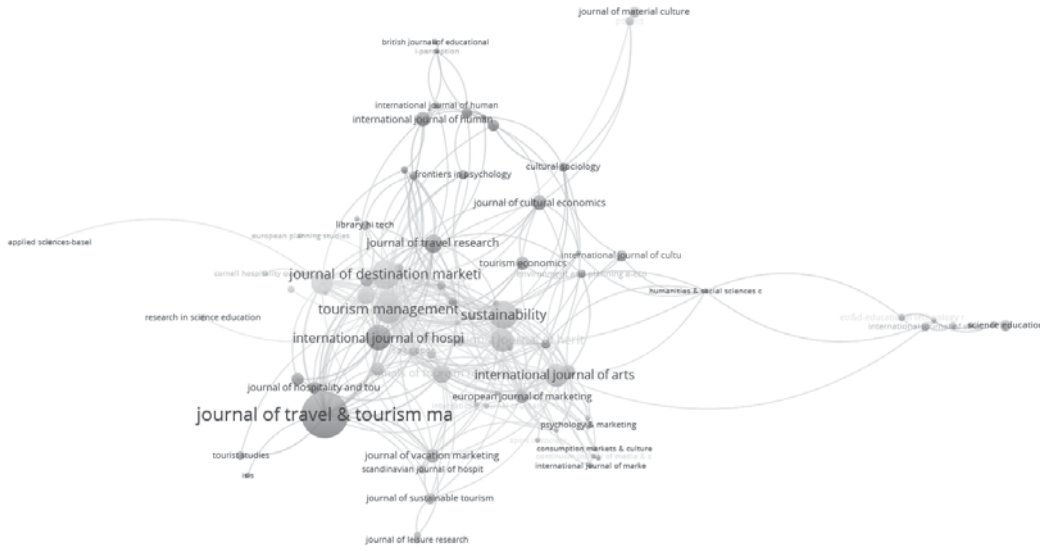
Furthermore, Figure 5 shows the citation analysis, which identified 454 sources, of which 159 met the threshold (minimum number of documents of source: 2 and minimum number of citations of a source: 1). Finally, the analysis showed 89 connected items (sources – journals).

The top five journals based on the total number of citations are:

1. Journal of Travel & Tourism Marketing (3,656 citations),
2. Tourism Management (2,948 citations),
3. International Journal of Hospitality Management (2,290 citations),
4. Journal of Destination Marketing & Management (1,265 citations), and
5. Annals of Tourism Research (1,157 citations).

The results show the importance of tourism marketing and hospitality journals for the study. Besides these journals, there is evident importance of general marketing journals (such as European Journal of Marketing, Journal of Marketing Management), heritage journals (especially International Journal of Heritage Studies), and arts management journals (International Journal of Arts Management) based on the total strength of the links between journals (see Figure 5).

FIGURE 5: Network visualization of the citation analysis on sources

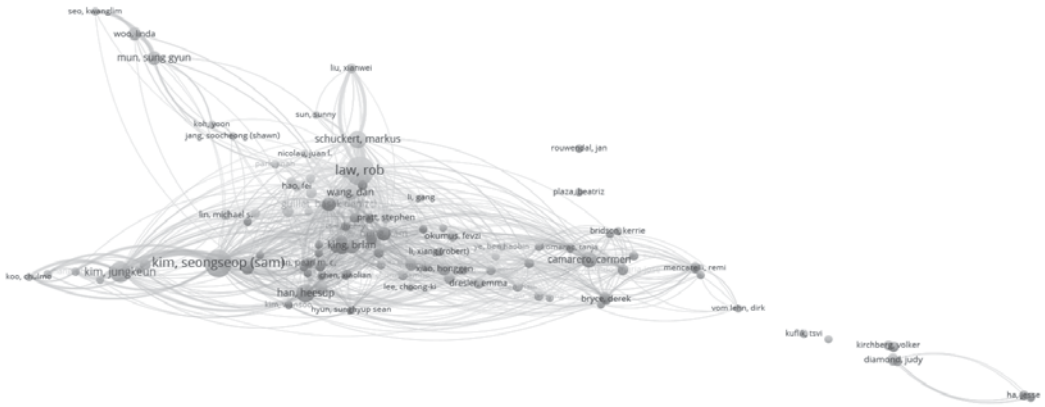


Source: Author's own research.

Note: VOSviewer (Minimum number of documents of source: 2 and minimum number of citations of a source: 1)

Figure 6 shows the results of the bibliographic coupling analysis (on the unit of analysis: authors). The analysis found 115 authors, with the largest set of the 113 connected authors. The results highlight the authors who are strongly coupled based on bibliographic coupling analysis.

FIGURE 6: Network visualization of the bibliographic coupling analysis of unit: Authors



Source: Author's own research.

Note: VOSviewer (Counting method: Full counting, Minimum number of documents of an author: 3, a minimum number of citations of an author: 1)

3.2. Results of systematic analysis

The papers and journals included in the systematic review are provided in Table 1. These results provide nuanced insights. In total, 65 papers from 41 journals were analyzed. Compared to the bibliographic analysis, the systematic analysis discovered the importance of a specialized journal for arts topics, the International Journal of Arts Management, as the journal with the most museum marketing papers (by relevance), followed by Current Issues in Tourism, and the International Journal of Human-Computer Interaction. Similar to previous analysis, this analysis discovered the importance of journals from different scientific fields, such as tourism (Current Issue in Tourism, Tourism Management, and Asia Pacific Journal of Tourism Research), marketing (Journal of Destination Marketing & Management, Journal of Services Marketing), as well as IT (such as the International Journal of Human-Computer Interaction, Computers & Education, and Library Hi Tech). Here, it is important to stress that fewer than half of the papers are published in 32 different journals. This finding suggests the diversity of journals that cover museum marketing-related topics. A closer examination of these journals revealed that they cover similar fields, including arts and culture, tourism, marketing, general business, and IT.

TABLE 1: List of journals and number of articles included in the systematic review

Journal name	Number of papers
International Journal of Arts Management	6
Current Issues in Tourism	5
International Journal of Human-Computer Interaction	5
Journal of Destination Marketing & Management	4
Tourism Management (+ Tourism Management Perspectives)	3
Asia Pacific Journal of Tourism Research	2
Journal of Services Marketing	2
Computers & Education	2
Library Hi Tech	2
Sage Open	2
Other journals*	32
Total:	65

Source: Author's own research.

*Note: Other journals with one paper included in the review are (in alphabetical order): *Academia-Revista Latinoamericana de Administracion, British Journal of Educational Technology, Continuum - Journal of Media & Cultural Studies, Convergence - The International Journal of Research Into New Media Technologies, Cultural Trends, Environment and Behavior, European Journal of Innovation Management, European Journal of Marketing, Frontiers in Psychology, Information & Management, Interacting with Computers, Interdisciplinary Science Reviews, International Journal of Computer-Supported Collaborative Learning, International Journal of Contemporary Hospitality Management, International Journal of Heritage Studies, International Journal of Human-Computer Studies, International Journal of Information Management, International Journal of Mobile Communications, International Journal of Tourism Research, Inzinerine Ekonomika-Engineering Economics, Journal of Cultural Economics, Journal of Hospitality & Tourism Research, Journal of Hospitality and Tourism Technology, Journal of Marketing Management, Journal of Science Education and Technology, Journal of Tourism and Cultural Change, Journal of Travel & Tourism Marketing, Journal of Travel Research, Online Information Review, Public Understanding of Science, Tourism Review, Virtual Reality.*

To answer the second research question, **RQ2: What are the key research topics in museum marketing research, and how are they related?**, the systematic analysis was conducted.

Table 2 provides an overview of the topics that have been studied the most in museum marketing. Six major categories were identified: 1. museum visitor(s), 2. technology in museums, 3. museum services, 4. learning and education, 5. authenticity, and 6. social media.

The most studied topic is "museum visitors" as a central museum marketing concept. The majority of papers about museum visitors focus on their experience (as a sub-category) to discover the ways to improve that experience (e.g. Sheng

& Chen, 2012; Hede et al., 2014; Trunfio & Campana, 2020; Komarac et al., 2024).

Another sub-category of interest is the segmentation of museum visitors through market research. Authors (Evrard & Krebs, 2018) identified three main segments of visitors depending on their relationship with physical and virtual (e-museum) visits through the website. They are: 1. physical visitors with no relationship to the museum's website, (2) virtual visitors with no physical relationship to the museum, and (3) complete visitors using both the museum and its website. Other authors, such as Gürel and Nielsen (2019), also tried to identify museum visitors' segments (specifically in art museums). They discovered two clusters: 1. Cultural Omnivores and 2. Art Museum Omnivores. These authors emphasize the importance of segmenting visitors based on their motivational variables, leisure preferences, and engagement patterns in various cultural activities (p. 66). Furthermore, with the rise of new technologies such as VR, Errichiello et al. (2019) sought to discover the segments of museum visitors based on their perceptions and attitudes towards VR applications. They revealed three segments of visitors: enthusiasts, moderates, and sceptics. Two segments (enthusiasts and moderate) who evaluated the wearable VR technology-mediated experience more positively were those who reported a more enhanced experience. This sub-category of research needs more attention since segments can change depending on the type of visit, type of museum, and use of technology (in a physical and/or virtual (e-museum) environment).

The third sub-category is co-creation as a key services marketing concept entering the museum marketing field. The papers that deal with co-creation and co-production (as part of service-dominant logic) emphasize the active role of visitors, together with guides/curators, to co-create a valuable museum experience (Thyne & Hede, 2016). Furthermore, Yang et al. (2023) consider visitors' motivation as "an important antecedent factor that affects the experience value of the museum before the visit; the participation and interaction of the visitors are the core elements of the co-creation of the experience value during the visit" (p. 12). The importance of co-creation stems from more intense experiences not only during the visit but also afterwards. So, Antón et al. (2018) pointed to the role of previous knowledge, which can galvanize co-creation, driving visitors to participate. This sub-category of research also needs more research in all phases of museum visits, before, during, and after, since the current theory suggests that co-creation can have an impact on visitors in all three phases.

The second category of research is directed at technology in museums (both physical and virtual museums). This category consists of seven sub-categories: 1. Augmented reality (AR), 2. Virtual reality (VR), 3. Mixed reality (MR), 4. Mobile (apps and guides), 5. different types of digital technologies, 6. Virtual museum (e-museum), and 7. Digital museum. This seems to be the most attractive research direction based on the number of published articles and subcategories.

AR in the museum is the first sub-category that has attracted rising academic interest, especially in the last fifteen years (e.g., Sylaiou et al., 2010; Jung et al., 2018; He et al., 2018; Recupero et al., 2019; Li et al., 2024a). Research of AR in museums began by focusing first on the perceived realism of cultural artifacts, i.e., the presence of AR objects in a virtual museum environment (e-museum) as an AR web application. The authors discovered how AR presence can enhance satisfaction and contribute to the appeal of museum visit experience. Later, authors Sommerauer and Müller (2014) focused on testing AR in a specific type of exhibition (mathematics) on the participants' learning outcomes in museums (as an informal learning environment). The authors found that AR was perceived as a valuable addition to the exhibition, with the majority of participants wanting more AR in museums in the future (however, a few participants were not open to AR in museums). Similarly, Chang

et al. (2014) highlighted the value of AR in the painting appreciation activity for learning performance. Furthermore, He et al. (2018) focused on examining the impact of information type (dynamic verbal vs. dynamic visual cues) and augmenting immersive scenes (high vs. low virtual presence) on visitors' evaluation of the AR museum experience. The authors found that "dynamic verbal cues are more effective than dynamic visual cues in enhancing the aesthetic tourism experience and museum tourists' willingness to pay more" (p. 134). Additionally, as previously noted, virtual presence plays a crucial role in delivering AR experiences to visitors.

Advocating the importance of the stakeholder approach in applying AR in museums (especially small museums), authors Dieck and Jung (2017) identified six value dimensions of AR. From internal and external stakeholders' perspectives, these dimensions are: 1. economic, 2. experiential, 3. social, 4. epistemic, 5. cultural and historical, and 6. educational value. These authors stress how small museums often fear costs that stem from implementing different technologies such as AR and that AR needs to prove its value to different stakeholders. AR needs to help museums preserve history, enhance visitor satisfaction, generate positive word-of-mouth, attract new target markets (such as young people), and contribute to a positive learning experience. Furthermore, Genc et al. (2023) investigated the connection between experience economy dimensions (entertainment and escapism) and AR for Generation Z when visiting a museum (Göbeklitepe Museum in Turkey). They discovered the importance of both dimensions, especially entertainment for Gen Z mediated by AR, which will increase enjoyment.

Investigating the immersive museum experience through AR (Khalil et al., 2024), visitors perceive the usefulness of implementing AR technology in exhibitions, which will lead to a positive attitude. Additionally, visitors are satisfied with the characteristics of AR technology (identified in the TAM model), which leads to a positive attitude and a positive intention to attend immersive exhibitions. The authors demonstrate the value of AR for tourism by arguing that museums should adopt AR to attract more visitors, thereby addressing the issues of seasonality that museums often encounter. Similarly, the TAM model was used by Li et al. (2024a) but in the context of wearable AR technology in museums (such as AR glasses). The differences between visitors who will use AR in museums in comparison to traditional visitors were also identified. When using AR wearables, sound effects and leasing costs play a role. The importance of further improving the comfort of using AR for visitors was also highlighted.

Interesting research was conducted by Xu et al. (2024), who focused on the design of AR museum artifacts, so-called tangible augmented reality or TAR (through leaflets, postcards, and CubeMuseum AR). The authors discovered the importance of gamified elements of TAR for learning and museum gifting.

The research conducted by Jung et al. (2018) positions AR research in the context of international marketing and heritage tourism by examining cultural differences, applying Hofstede's cultural dimensions. Although the authors found no relationship between the influence of utilitarian components of AR and the masculinity/femininity culture types, they discovered the significance of AR aesthetics for the perceived enjoyment of the experience (in South Korea and Ireland).

This sub-category of research shows evident growth and innovations in recent years in different fields connected to museums. Since it is expanding and attracting more interest from researchers, it also posits new opportunities for answering the most challenging questions for museum marketing as well as museum professionals: 1. How to present museum content realistically using different types of AR (mobile apps vs. wearables) (with visuals and sounds)? 2. How does AR help achieve the aims of different stakeholders? 3. How does AR impact visitor experiences of different generations and cultures? 4. How to ensure comfort for visitors through

wearable AR, and 5. How to introduce AR economically. As we can expect further development of AR technologies, they will need prior testing before being implemented in practice.

The following sub-category is virtual reality, closely connected to museum AR research. Choi and Kim (2017) investigated both VR and AR in museums, in combination with beacons, to create a better interactive space for museum visitors. While highlighting the progress in head-mounted displays (HMD) as VR technology, the authors also stress the discomfort of walking around while wearing such devices as a major issue. The fact that visitors cannot access all parts of the museum using an HMD, as it is limited to a specific space, can also be a problem.

Similarly, further research on wearable VR (HMD) in museums conducted by Errichiello et al. (2019) found that visitors believe that VR adds value to their on-site experience, especially regarding usefulness and learning opportunities. Also, visitors perceive VR as an effective way to tour the museum, providing a different experience in comparison to traditional museum tours (without VR). Furthermore, other researchers (Lo et al., 2019) discovered that VR contributes to visitor experience, making it memorable, enjoyable, entertaining, and educational. On the other hand, with the use of the latest 3D motion capture and other VR technologies, museums (and other heritage sites) can help to restore seemingly isolated physics and outdated cultural heritage before it disappears.

Technology such as VR is increasingly important for Millennials and Gen Z (Robaina-Calderín et al., 2023) since it can provide a greater level of immersion into the experience. These authors tested VR types: virtual reality headsets, mobile applications plus virtual reality glasses, and video on a computer screen. They found that a greater level of VR immersion not only triggers a greater affective and conative impact on the visitor but also leads to a repeated experience. Interestingly, the authors also showed that some young visitors, often referred to as visitors with passive profiles, are difficult to attract with immersive experiences.

The intention to use VR by applying the flow theory and S-O-R framework was investigated by Wang et al. (2024), who discovered how different display methods affected the intention to use VR and the flow of the experience. Specifically, "the VR display method was found to promote stronger intentions to use VR by bringing users a higher flow experience" (p. 330). Also, the authors stress that familiarity with VR is an important factor in the intention to use VR in museums.

Recently, Li et al. (2024b) proposed a Human-Centric Virtual Museum, a novel approach to VR that emphasizes audience interaction experiences. The authors point to the manner in which that approach "transforms audiences from passive receivers to active participants, injecting new vitality into traditional museums" (p. 9). Also, compared to traditional museums, VR offers new distinctive possibilities and provides unique experiences, such as the freedom to explore and closely examine museum artifacts, and to switch viewpoints. However, the authors also cautioned about health issues (dizziness and uncomfortable experience), which need to be considered.

Because the VR experience is rich in visual, auditory, and haptic stimuli, it can lead to extensive sensory overload (Kaplan-Rakowski et al., 2024). These authors discovered that VR experience with or without sound leads to higher visitor enjoyment in comparison to that of visitors who used tablets during museum visits. As in previous research, the authors investigated the sense of presence and confirmed that VR contributes to it.

The third closely connected sub-category is mixed reality (MR) in museums. This sub-category stems from the first and second one, AR and VR, and research into has intensified, especially for the last five years. In their research, Recupero et al. (2019) explored museum visits as an activity mediated by technology, positioning VR and AR as mediating tools between the museum

mission and the visitor experience. The authors concluded that it is necessary to strike a balance when using these technologies to provide educational leisure experiences. Also, they believe both VR and AR need to be "designed according to the peculiarities of the museum context (i.e., the museum artifacts ecology)" (p. 8).

Trunfio et al. (2020) investigated the functional and experiential elements of MR. Their interesting findings are related to so-called *museum experiences 4.0*, in which innovative mixed reality experiences prevail. Also, they connected museum experiences 4.0 to selected dimensions of experience economy (escape and entertainment) and socialization. On the other hand, traditional museum experiences are supported by education and heritage valorization. A visitor experience model for mixed reality was discovered and proposed by Trunfio and Campana (2020), who confirmed the importance and the effectiveness of mixed reality experience on satisfaction. Furthermore, they stressed the importance of audio, images, and video in the MR experience together with the usual requirements "such as interface, comfort and easy to use" (p. 1055). Additionally, regarding presence, the authors believe visitors are likely to avoid technologies that will reduce the sense of presence.

Dieck et al. (2024) focused on AR and VR and explored them through experience economy dimensions, including social presence as an antecedent. The authors confirmed that social presence is a predictor of four dimensions of the experience. Additionally, three out of four dimensions contribute to the overall experience, except for aesthetics.

Trunfio et al. (2022) believe it is important to understand how MR functional elements affect visitor experience and drive their post-visit behavior. They found that MR functional elements affect immersion into the experience.

Çiftçi and Çizel, (2024) stressed the importance of authenticity (both objective and existential), as well as tour guides in MR experiences. They tested the differences between three types of services (MR only, tour guide only, and mixed service) to find that combining MR and tour guides or tour guides leads to higher perceptions of authenticity than service using MR only.

As the role of tour guides has been stressed in previous research, it opens the question of what MR technology can contribute to museum guiding systems. Hammady et al. (2021) were the first authors to examine the role of tour guides in the MR experience in the form of holographic guides (MuseumEye, the MR virtual guide system at the Egyptian Museum, Cairo). The aim was to discover how a holographic guide can perform as a human guide and compensate for the absence of a human tour guide. The authors found that this kind of guide solves the "current human guiding problem" (p. 191).

The fourth sub-category of the research focuses on "classic" mobile guides apps (which do not offer the AR or MR possibility).

The role of different types of guides in museums was explored by Lanir et al. (2013). The authors compared the actual behavior of visitors between those who used mobile guides (multimedia location-aware) and those who did not use electronic devices for guidance. Both positive and negative effects were identified. The positive effect of using mobile guides was an extended stay at the museum because visitors received the information through the mobile guides. The negative effect was related to less interaction with group members.

Later, Kang et al. (2018) further explored the characteristics of mobile guiding systems using extended TAM. The authors confirmed the positive effect of mobile guides on overall satisfaction with the experience. Interestingly, they found the moderating role of age, with older groups rating their usefulness more highly when compared to younger ones.

Mobile devices and apps have become popular among museums and visitors in recent decades. One of the earliest works by Wang et al. (2009) investigated mobile tours through mobile devices. The idea was to connect the physical ex-

perience (in the museum) with the online experience since the visitor rates artworks offsite, and the data is transferred online.

Light et al. (2018) conducted research on QR and apps in museums, revealing problems with QR codes in museums: they were too discrete and uninteresting; some visitors lacked the necessary devices, software, or skills to use the QR codes and apps; and there was also a poor phone signal in the museum. Furthermore, the participants were unsure how the app would "provide feedback about the objects they chose to engage with" (p. 419).

The research on mobile apps extends to the mobile apps' gamified experiences, which will provide entertaining learning possibilities (Ha et al., 2021). These authors discovered the value of gamification (informal learning) for visitors when they ask questions in the app. Interestingly, they proved that visitors asked more questions in the app's Game Mode.

Another interesting potential of mobile (web) apps was investigated by Ryding et al. (2021), who tested two apps. One was for gifting the so-called *Gift* web app with the possibility to create and give digital gifts connected to the museum collections. The second was "*Never let me go*", offering a two-player experience and a playful guide. The aim of both apps was to personalize the museum experience. The authors discovered that this novel approach (for both apps) was "successful at creating engaging and thought-provoking experiences that led visitors to view the museum and its exhibits – and perhaps each other too – in new ways" (p. 1168). The potential of push notifications for promoting context-related souvenirs was explored by Dou et al. (2021). They confirmed that these kinds of promotions positively affected the intention to purchase museum souvenirs. Both research studies (Ryding et al., 2021; Dou et al., 2021) proved the value and potential of mobile apps for museum "retail" activities.

Besides guiding possibilities, gifting, and socialization, more research has focused on mobile AR apps and their value for different museum stakeholders. Wu et al. (2023) found that the factor of inspiration played a critical role in enhancing attitudes toward AR applications, but that the perceived augmentation quality, including both hedonic and utilitarian benefits, affects attitudes toward museum visits.

The fifth sub-category of research provides knowledge about the combination of digital technologies, with authors exploring the influence of these technologies usually on museum experience.

Jarrier and Bourgeon-Renault (2012) investigated the manner in which different devices (audio guides, interactive terminals, smartphones, touch-screen tablets, augmented reality) affect the experience and behavioral intentions of visitors. The authors discovered that one type of device, audio guides, and terminals is focused more on learning and offers limited interactivity, while the other one offers more entertaining and sensory experiences (such as AR). Also, the devices can enable or restrict social interaction between visitors.

The use of different technologies is studied in different types of museums. Ponsignon and Derbai (2020) investigated experiential wine museums (offering 19 technology-empowered thematic modules) and discovered that, among four types of experiences, the escapist experience uses active digital and interactive technologies, such as digital touch screens, 3D images, and aroma-diffusion equipment, to create sensory experiences. Furthermore, both active and passive types of experiences have a different impact on visitors' social experience. The influence of immersive experiences (aesthetics and escapist experience) on satisfaction in various types of museums (which use different interactive technologies) was investigated by Komarac and Ozretic Dosen (2022). The authors discovered that while both experiences contribute to satisfaction, the aesthetic experience contributes more.

Since not all technologies contribute to the museum experience in the same manner, Roederer

et al. (2020) proposed a typology of digital mediation devices, considering the forms of visitor interaction with these technologies. They found that technology such as VR can contribute to more meaningful visits but also that the use of some technologies can reduce authenticity. Therefore, using different technologies and devices is a delicate process that needs to be carefully planned and executed within a challenging museum environment.

The sixth sub-category concerns research on virtual museums (e-museums), which has been ongoing for decades (Wang et al., 2009; Evrard & Krebs, 2018). Trying to sort out the academic confusion found in the literature, Ha and Kim (2024) analyzed available definitions in the literature and proposed the following definition of virtual museums: "A museum that is built within a digital space with a collection of digitized objects, such as images, audio files, text-based documents, and uses virtual reality technology to supplement, augment, and enrich the museum experience" (p. 1349).

Early on the virtual museum research focused on web-based virtual museums (accessed using a desktop and a mouse). Sylaiou et al. (2010) explored the possibilities of an internet-based 3D virtual museum with some AR and VR possibilities for presence and enjoyment, demonstrating their importance for virtual museums. Also, previous experience did not affect the quality of interaction in a virtual museum.

The study of similarities between physical and virtual museums was conducted by Katz and Halpern (2015), who expected that the higher similarity between these two kinds of experience would lead to a higher perception of collection. They discovered the potential of virtual museums (3D), engaging students through a realistic-looking environment that will increase their intention to visit the physical museum. However, cognitive involvement and a sense of presence were found to play a key role. Similarly, Chekembayeva and Garaus (2024) investigated the impact of virtual museum tours on intentions to visit on-site physical museums, with a focus on the authenticity of the experience. They revealed the importance of the substantive and communicative staging of the servicescape in generating an authentic experience in the virtual museum. Notably, the authors confirmed a promotional rather than a substitutional role of virtual tours.

Despite a significant number of virtual museums (such as on the Google Arts & Culture Platform) available to potential visitors globally, not all museums offer virtual museums (Komarac & Ozretić Došen, 2024). In some countries, the number of museums with virtual collections is limited, such as in South Korea (Ha & Kim, 2024). The authors found that the museums' collection size, information, and exhibition space size (of the physical museum) will affect the virtual museum's very existence and its "offering." They also urged further research into virtual museums among museum professionals, specifically on the adoption of virtual museums.

Finally, the seventh sub-category within the technology in museums sphere deals with the topic of digital museums. This sub-category is relatively new in the research since it focuses on the research of fully digital museums in physical locations. Here, it is important to stress that, in extant literature, some authors refer to digital museums as virtual or e-museums, which creates additional confusion in terminology.

Guo et al. (2023) point to rather limited research on digital museums despite their popularity. Fully digital immersive museums with multisensory experience can trigger an elevated emotional state among visitors and their sense of presence, stimulated by various senses, to enhance the visitor experience. Further research is needed, mainly on-site in digital museums, since these experiences can differ from the experiences in "traditional" museums.

The third research category is focused on museum services, i.e., 1. new display methods (related to technology and/or design), 2. innovations, 3. quality, and 4. museum shops (additional services).

The first sub-category focuses on the new display methods in technology and/or service design. The study of design has been an attractive topic for researchers for decades. Harvey et al. (1998) paid special attention to the role of immersive design techniques in determining museum visitors' experience before and after renovation. The renovated museum had a design feature responsible for higher sensory contact, ultimately leading to a better experience (regarding visitor flow and immersion). McCarthy and Ciolfi (2008) stressed the importance of a "human-centered design process" that involves trying to understand "people's experiences before designing the exhibition so that the exhibition, as well as expressing the views and position of the curator, can also augment people's experience" (p. 262). Furthermore, the advancement of technology creates new possibilities of display methods, such as fully digital in digital museums (Guo et al., 2023). Museums and their visitors can benefit from display methods using VR in comparison to more static photograph view, because the choice of display methods significantly affects intentions to use VR (Wang et al., 2024).

When it comes to museum services, technology often has a significant influence, especially for virtual services in a physical space, virtual reality or VR (through HMD or even beacons for mobile experiences in museum) (Choi & Kim, 2017). Technologies such VR serve as a mediation function between the visitor/public and the museum's content. If executed properly, they create more meaningful services and experiences for visitors (Roederer et al., 2020). Also, technology can serve as a medium for creating new innovative services and experiences such as immersive exhibitions shown via AR (Khalil et al., 2024).

The second sub-category within this research category focuses on innovations. Although museums were somewhat slow in innovating in the past, recent evidence suggests positive changes. This sub-category stresses the importance of innovations, primarily those related to adopted technology while neglecting other types of innovations.

Trunfio and Campana (2020) presented an innovative project that offers a mixed reality experience through a combination of entertainment, education, and heritage valorization, highlighting the importance of effective human-technology interaction. Furthermore, Yang and Zhang (2022) pointed to the role of smart tourism technologies in creating a memorable museum experience. Interestingly, they also demonstrated a higher impact of these technologies compared to traditional services such as museum setting and staff service on museum experience. Technological innovations such as AR innovations can help museums attract new audiences, primarily young people (Gen Z) (Genc et al., 2023).

The third sub-category of research is directed at the research of quality, as one of the oldest constructs in services marketing. The quality of museum service was investigated by Maher al. (2011), who tested SERVQUAL in a children's museum and provided support for its partial applicability. They also discovered the importance of staff empathy as a predictor of museum membership, which had the lowest perception among visitors.

Investigating museum service quality, Kuo et al. (2018) looked at visitor perceptions of service quality within personal, socio-cultural, and physical service contexts. They proposed that perception of service quality can be "categorized either as a service quality gain (positive performance) or a service quality loss (negative performance)" (p. 719). The authors found that negative perceptions, compared to positive ones, had a more significant impact on visitor experience (in a personal and socio-cultural context).

The final, fourth sub-category of research examines museum shops (gift shops, souvenir shops).

The research on museum shops is closely related to the research on museum quality since museum services are experiential. According to Dou et al. (2021), experiential quality in a muse-

um setting consists of education, enjoyment, escapism, and satisfaction. It is the foundation of all museum services, including souvenir purchasing through a mobile app.

The position of museum professionals regarding the importance of museum shops was investigated by Komarac et al. (2019). The authors discovered how museums differ regarding museum shop existence and found four possible types: 1. museums with both physical and e-shops, 2. museums with only physical shops, 3. museums with only e-museum shops, and 4. Museums without a shop. Additionally, the authors highlighted the untapped potential of museum shops and emphasized the need for further research on this underexplored museum service.

The fourth research category addresses the role of education and learning. This category focuses on 1. learning in museums and 2. the role of educators in museums.

Museums can be considered places of formal and informal learning (Ha et al., 2021). The authors proposed the ICAP framework, which is divided into shallow and deeper learning. Shallow learning was characterized as passive (e.g., reading text in the museum) and active (e.g., pushing a button). In contrast, deep learning can be constructive (e.g., generating questions) and interactive (e.g., debating). Furthermore, Chang et al. (2014) investigated learning effectiveness when using different devices (AR-guided, audio guide, and no devices). The authors found that AR-guided tours contributed to learning effectiveness the most. Similar findings were made by Sommerauer and Müller (2014), who found learning from augmented exhibits to be significantly better than from non-augmented exhibits.

Although the value of interactive devices was demonstrated in the literature, Kaplan-Rakowski et al. (2024) caution about the possibilities of extensive stimulation, which leads to sensory overload and can diminish the positive effects of learning.

Recently, Dumont et al. (2024) investigated the role of educators by focusing on digital museum education and possible opportunities and challenges for educators. They identified opportunities that can be seen at the level of visitors, educators, and museums as institutions. Attracting new visitors, increasing engagement, conducting outreach activities, and providing tools for schools are all opportunities at the visitor level. Then, learning new skills, getting inspired, and attaining training are opportunities for museum educators. Ultimately, enhancing museum practices, extending exhibition durations, and providing an additional and complementary tool are opportunities for museums as institutions. Challenges for all three groups are many, including the digital divide, privacy, digital fatigue (for museum visitors), lacking digital knowledge and skills, staying up to date (for educators), and fear of looking outdated, technical and practical, high costs, time and staff investment.

The fifth category is related to the authenticity of 1. objects and 2. visitor experience.

Educators' views are especially crucial for questions of authenticity (de Kluis et al., 2024). These authors explored various perspectives and definitions of authenticity, finding most educators to believe that authenticity meant "an object authentic if it originated from nature" (p. 336). However, some also believed exact replicas to be authentic objects.

A more holistic view of authenticity in the context of a museum is through the lens of visitor experience. It is among the ongoing questions that tourism and marketing scholars are trying to answer, with Hede et al. (2014) being the first to propose a model with three components: 1. the perceived authenticity of the museum, 2. the visitor, and 3. materials.

The authenticity of museum visitor experience can be studied in 1. a physical museum environment (Thyne & Hede, 2016; Hede et al., 2014; Jin et al., 2020; Dag Çavusoglu & Durmaz, 2023; Komarac et al., 2024), 2. a virtual environment (Chekembayeva & Garaus, 2024), or 3. both (Ev-

rard & Krebs, 2018). Komarac et al. (2024) identified the influence of edutainment, a combination of education and entertainment, on perceived authenticity.

Furthermore, Jin et al. (2020) found that heritage museums influence visitors' emotional authenticity through the genuineness of the exhibited objects and by encouraging positive interactions with technology. They explored the association between original and interactive authenticity and how they cause emotional authenticity.

Also, authors have focused even more on discovering the impact of immersive experiences (via AR) on perceived authenticity. Dag et al. (2023) found a positive impact of perceived authenticity on place satisfaction, outlining that perceived authenticity mediated the relationship between immersive experience and place satisfaction.

Çiftçi and Çizel (2024) investigated the perceived (objective and existential) authenticity of MR, tour guides, and mixed services, discovering that objective authenticity was higher among visitors who used mixed services or were accompanied by tour guides. Also, existential authenticity was at a higher level among visitors who used mixed services.

The sixth and final category of research is related to social media in museums, which can be divided into two sub-categories 1. user-generated content, and 2. social media marketing activities.

The first subcategory is user-generated content. Vu et al. (2018) investigated how travel photos (on Flickr) and their metadata could be used to understand museum visitor behaviors and experiences. They discovered how visitors captured different elements of museum service (in the interior and exterior). Additionally, they compared the attractiveness of the museum based on pictures (indoor scenes and outdoor scenes), concluding that visitors could be attracted not only by the exhibits but also by potential sites they can experience and by pictures of the outside of the museums (e.g., views of the harbor).

Similarly, Budge and Burness (2018) examined visitors' Instagram posts, including both visual and textual components. The authors identified four categories of photos: 1. objects, 2. objects and people, 3. people only, and 4. other (such as museum shops). The largest category was museum objects, showing large temporary exhibition.

A study by Antón et al. (2018) examined the four dimensions of experiences related to content generated by museum visitors. They found that escapism and learning affected content generation, while entertainment and aesthetics surprisingly did not. The authors highlighted potential differences between types of museums, specifically science museums and archaeology museums.

Entertainment, interaction, trendiness, customization, and word-of-mouth were found to be important variables of museums' social-media marketing activities (SMMA), with Luo et al. (2022) demonstrating how these activities enhance the visitor experience on social media. The importance of SMMA was also confirmed by Zollo et al. (2022), who discovered its positive impact on loyalty and visitors' willingness to provide economic support to the museum.

TABLE 2: Overview of the topics studied in museum marketing and key authors

Category	Sub-category	Resources
1. museum visitor(s)	**1. experience**	Harvey et al. (1998); McCarthy and Ciolfi, (2008); Jarrier and Bourgeon-Renault, (2012); Sheng and Chen (2012); Lanir et al. (2013); Hede et al. (2014); Thyne and Hede, (2016); Choi and Kim, (2017); Antón et al., (2018); He et al. (2018); Kang et al. (2018); Kuo et al. (2018); Light et al. (2018); Vu et al. (2018); Recupero et al. (2019); Eklund, (2020); Jin et al. (2020); Ponsignon and Derbaix, (2020); Roederer et al. (2020); Trunfio et al. (2020); Trunfio and Campana, (2020); Dou et al. (2021); Hammady et al. (2021); Ryding et al. (2021); Komarac and Ozretic Dosen, (2022); Luo et al. (2022); Trunfio et al. (2022); Zollo et al. (2022); Yang and Zhang, (2022); Genc et al. (2023); Guo et al. (2023); Robaina-Calderín et al. (2023); Wu et al. (2023); Yang et al. (2023); Dieck et al. (2024); de Kluis et al. (2024); Khalil et al. (2024); Kaplan-Rakowski et al. (2024); Komarac et al. (2024); Li et al. (2024); Xu et al. (2024);
	2. segmentation	Evrard and Krebs, (2018); Gürel and Nielsen (2019); Errichiello et al. (2019)
	3. co-creation	Thyne and Hede, (2016); Antón et al. (2018); Yang et al. (2023)
2. technology in museums	**1. AR**	Sylaiou et al. (2010); Chang et al. (2014); Sommerauer and Müller, (2014); Dieck and Jung, (2017); Jung et al., 2018); He et al. (2018); Recupero et al. (2019); Genc et al. 2023); Dag et al. (2023); Wu et al. (2023); Dieck et al. (2024); Khalil et al. (2024); Li et al. (2024a); Xu et al. (2024)
	2. VR	Choi and Kim, (2017); Errichiello et al. (2019); Lo et al. (2019); Robaina-Calderín et al. (2023); Li et al. (2024b); Kaplan-Rakowski et al. (2024); Wang et al. (2024)
	3. MR	Recupero et al. (2019); Trunfio et al. (2020); Trunfio and Campana, (2020); Hammady et al. (2021); Trunfio et al. (2022); Çiftçi and Çizel, (2024); Li et al. (2024b); Dieck et al. (2024)
	4. mobile (apps, guides)	Wang et al. (2009); Lanir et al. (2013); Light et al. (2018); Kang et al. (2018); Ryding et al. (2021); Ha et al. (2021); Dou et al. (2021); Wu et al. (2023)
	5. combination of digital technologies	Jarrier and Bourgeon-Renault, (2012); Ponsignon and Derbaix, (2020); Roederer et al. (2020); Komarac and Ozretic Dosen, (2022)
	6. virtual museum (e-museum)	Wang et al. (2009); Sylaiou et al. (2010); Katz and Halpern, (2015); Evrard and Krebs, (2018); Ha and Kim, (2024); Chekembayeva and Garaus, (2024);
	7. digital museum	Guo et al. (2023)

Category	Sub-category	Resources
3. museum services	**1. new display methods (technology, design)**	Harvey et al. (1998); McCarthy and Ciolfi, (2008); Choi and Kim (2017); Roederer et al. (2020); Guo et al. (2023); Wang et al. (2024); Khalil et al. (2024);
	2. innovation	Trunfio and Campana, (2020); Yang and Zhang, (2022); Genc et al. (2023)
	3. quality	Maher et al. (2011); Kuo et al. (2018); Dou et al. (2021)
	4. museum shops	Komarac et al. (2019); Dou et al. (2021)
4. learning and education	**1. learning**	Chang et al. (2014); Sommerauer and Müller, (2014); Ha et al. (2021); Trunfio et al. (2022); Kaplan-Rakowski et al. (2024);
	2. educators	de Kluis et al. (2024); Dumont et al. (2024)
5. authenticity of	**1. objects**	de Kluis et al. (2024)
	2. visitor experience	Hede et al. (2014); Thyne and Hede, (2016); Evrard and Krebs, (2018); Jin et al. (2020); Dag et al. (2023); Komarac et al. (2024); Çiftçi and Çizel, (2024); Chekembayeva and Garaus, (2024)
6. social media	**1. user-generated content (UGC)**	Antón et al. (2018); Budge and Burness, (2018); Vu et al. (2018)
	2. marketing activities	Luo et al. (2022); Zollo et al. (2022)

Source: Author's own research.

4. CONCLUSION

This paper has provided a bibliographic and systematic analysis of the museum marketing field. In a bibliographic analysis, the paper identifies the complexities of the museum marketing field and its connections to other fields of business, primarily tourism and hospitality, as well as heritage and arts management. Furthermore, it reveals the strongest networks of collaborations among authors, the most frequently used keywords related to the field, and the most influential journals (based on their impact through citations). Here, it is crucial to stress that museum marketing has emerged as a smaller sub-field of the research and that the research on museums goes beyond museum marketing in larger fields of business, mostly marketing, tourism, and beyond business.

The presented results served as the foundation for answering the third research question, **RQ3: What future research streams need more attention from researchers?** After the systematic analysis (of selected articles), six main categories with research sub-categories were identified together with possible gaps.

1. The first research stream deals with museum experience. Current research still explores various ways in which to enhance visitor experiences. Further research needs to focus more on understanding the changes in museum visitor experience, their expectations, and on-site and online experiences. Therefore, further research into visitor segmentation is needed, as well as exploring ways in which visitors co-create the museum experience.
2. The second research stream addresses technology in museums. This research stream is the most attractive, focusing on seven areas. Currently, AR research is gaining more attention, followed by VR. How-

ever, AR and VR in museums face specific obstacles (in presentation, usage, and profitability). Also, since different devices are used for AR and VR experiences (and these are still developing), future research needs to follow the trends in this area to understand the perspectives of all stakeholders when implementing these technologies.

More research is needed on various types of virtual museums and digital museums, as they are currently underrepresented in the existing body of research. To avoid any further confusion, a clear definition and distinction between virtual and digital museums are also needed.

3. The research stream focusing on museum services is one of the oldest in museum marketing. Previous research has focused on various display methods for providing the core service. With the development of the museology field and museum technology, future research needs to understand the dynamics between creating museum services (exhibitions) that will meet the goals of both museum professionals and visitors. Although there is research on innovations in museums, it appears to be a complex topic to investigate in museums, as many have traditionally focused on object-based preservation, prioritizing objects over visitors, and have been slow to innovate. Another neglected area that requires more attention is "the museum shop," both offline and online, due to an evident lack of research.
4. One of the primary museum missions is focused on education and learning. In this research stream, understanding how museums contribute to visitors' formal as well as informal learning is essential. More research is necessary from both perspectives to achieve the positive effects of learning (such as deep learning) while minimizing negative effects (such as sensory overload). Here, the opinions of museum professionals are essential, as their experiences and practices can serve as a foundation for improved learning experiences.
5. A search for the authenticity of museum experiences and objects merits further study, as the authenticity concept can have different meanings for various stakeholders (e.g., museum professionals and visitors). Also, with changing expectations of museum visitors and the application of new technologies in museums, the question of what constitutes an authentic experience remains to be adequately answered.
6. The latest research stream is related to social media. This research stream requires further investigation in all fields of social media because it encompasses the topic of UGC and social media marketing activities. The reason for this lies in an evident lack of research on social media marketing activities, which can include case studies highlighting the best practices, as well as a deeper understanding of museum followers' experiences with various types of content on social media, and their connection to the museum experience (e.g., intention to visit).

5. RESEARCH LIMITATIONS

The paper has several limitations. First, the data for the analysis was retrieved from only one database, the Web of Science (Core Collection). Also, only peer-reviewed articles published in journals and articles available in English were analyzed, neglecting conference papers and other languages. Furthermore, the limitations are related to the analysis period (from 1994 to 2024), as few scientific papers were published prior to this period.

Moreover, the limitation also applies to the use of ASReview, a Python-based software that utilizes state-of-the-art active learning techniques based on researchers' input.

References

1. Antón, C., Camarero, C., & Garrido, M. J. (2018). Exploring the experience value of museum visitors as a co-creation process. *Current Issues in Tourism*, *21*(12), 1406–1425. https://doi.org/10.1080/13683500.2017.1373753
2. ASReview LAB developers. (2025). ASReview LAB - A tool for AI-assisted systematic reviews (v1.6.4). Zenodo. https://doi.org/10.5281/zenodo.14753292
3. Budge, K., & Burness, A. (2018). Museum objects and Instagram: agency and communication in digital engagement. *Continuum-Journal of Media & Cultural Studies*, *32*(2), 137–150. https://doi.org/10.1080/10304312.2017.1337079
4. Chang, K. E., Chang, C. T., Hou, H. T., Sung, Y. T., Chao, H. L., & Lee, C. M. (2014). Development and behavioral pattern analysis of a mobile guide system with augmented reality for painting appreciation instruction in an art museum. *Computers & Education*, *71*, 185–197. https://doi.org/10.1016/j.compedu.2013.09.022
5. Chekembayeva, G., & Garaus, M. (2024). Authenticity matters: investigating virtual tours' impact on curiosity and museum visit intentions. *Journal of Services Marketing*, *38*(7), 941–956. https://doi.org/10.1108/JSM-09-2023-0343
6. Choi, H., & Kim, S. (2017). A content service deployment plan for metaverse museum exhibitions-Centering on the combination of beacons and HMDs. *International Journal of Information Management*, *37*(1), 1519–1527. https://doi.org/10.1016/j.ijinfomgt.2016.04.017
7. Çiftçi, S. F., & Çizel, B. (2024). Exploring relations among authentic tourism experience, experience quality, and tourist behaviours in phygital heritage with experimental design. *Journal of Destination Marketing & Management*, *31*. https://doi.org/10.1016/j.jdmm.2023.100848
8. Coombes, P. (2023). Systematic Review Research in Marketing Scholarship: Optimizing Rigor. *International Journal of Market Research, 66*(6), 687–693. https://doi.org/10.1177/14707853231184729
9. Dag, K., Çavusoglu, S., & Durmaz, Y. (2023). The effect of immersive experience, user engagement and perceived authenticity on place satisfaction in the context of augmented reality. *Library Hi Tech*, *42*(4), 1331-1346. https://doi.org/10.1108/LHT-10-2022-0498
10. de Kluis, T., Romp, S., & Land-Zandstra, A. M. (2024). Science museum educators' views on object-based learning: The perceived importance of authenticity and touch. *Public Understanding of Science*, *33*(3), 325–342. https://doi.org/10.1177/09636625231202617
11. Dieck, M. C. T., & Jung, T. H. (2017). Value of augmented reality at cultural heritage sites: A stakeholder approach. *Journal of Destination Marketing & Management*, *6*(2), 110–117. https://doi.org/10.1016/j.jdmm.2017.03.002
12. Dieck, M. C. T., Jung, T., Lee, H., & Chung, N. (2024). Social presence and experience economy: the effects of augmented and virtual reality in museums. *International Journal of Mobile Communications*, *23*(1), 85–109. https://doi.org/10.1504/IJMC.2024.135691
13. Dou, X. T., Fan, A. L., & Cai, L. P. (2021). Mobile contextual marketing in a museum setting. *Journal of Services Marketing*, *35*(5), 553–565. https://doi.org/10.1108/JSM-02-2020-0049
14. Dumont, C., De Backer, F., Dewinter, H., & Vandermeersche, G. (2024). Museum educators' views on digital museum education: opportunities and challenges. *Cultural Trends*. https://doi.org/10.1080/09548963.2024.2378324
15. Eklund, L. (2020). A Shoe Is a Shoe Is a Shoe: Interpersonalization and Meaning-making in Museums - Research Findings and Design Implications. *International Journal of Human-Computer Interaction*, *36*(16), 1503–1513. https://doi.org/10.1080/10447318.2020.1767982
16. Errichiello, L., Micera, R., Atzeni, M., & Del Chiappa, G. (2019). Exploring the implications of wearable virtual reality technology for museum visitors' experience: A cluster analysis. *International Journal of Tourism Research*, *21*(5), 590–605. https://doi.org/10.1002/jtr.2283

17. Evrard, Y., & Krebs, A. (2018). The authenticity of the museum experience in the digital age: the case of the Louvre. *Journal of Cultural Economics*, *42*(3), 353–363. https://doi.org/10.1007/s10824-017-9309-x
18. Genc, V., Bilgihan, A., Genc, S. G., & Okumus, F. (2023). Seeing history come to life with augmented reality: the museum experience of generation Z in Gobeklitepe. *Journal of Tourism and Cultural Change*, *21*(6), 657–676. https://doi.org/10.1080/14766825.2023.2213679
19. Guo, K. X., Fan, A. L., Lehto, X., & Day, J. (2023). Immersive Digital Tourism: The Role of Multisensory Cues in Digital Museum Experiences. *Journal of Hospitality & Tourism Research*, *47*(6), 1017–1039. https://doi.org/10.1177/10963480211030319
20. Gürel, E., & Nielsen, A. (2019). Art Museum Visitor Segments: Evidence From Italy on Omnivores and Highbrow Univores. *International Journal of Arts Management*, *21*(2), 55–69.
21. Ha, J., Cortés, L. E. P., Su, M., Nelson, B. C., Bowman, C., & Bowman, J. D. (2021). The impact of a gamified mobile question-asking app on museum visitor group interactions: an ICAP framing. *International Journal of Computer-Supported Collaborative Learning*, *16*(3), 367–401. https://doi.org/10.1007/s11412-021-09350-w
22. Ha, S., & Kim, S. (2024). Factors Determining Whether an Art Museum Will Offer Virtual Content: An Empirical Study in South Korea. *International Journal of Human-Computer Interaction*, *40*(6), 1341–1354. https://doi.org/10.1080/10447318.2022.2143769
23. Hammady, R., Ma, M. H., AL-Kalha, Z., & Strathearn, C. (2021). A framework for constructing and evaluating the role of MR as a holographic virtual guide in museums. *Virtual Reality*, *25*(4), 895–918. https://doi.org/10.1007/s10055-020-00497-9
24. Harvey, M. L., Loomis, R. J., Bell, P. A., & Marino, M. (1998). The influence of museum exhibit design on immersion and psychological flow. *Environment and Behavior*, *30*(5), 601–627. https://doi.org/10.1177/001391659803000502
25. He, Z. Y., Wu, L., & Li, X. (2018). When art meets tech: The role of augmented reality in enhancing museum experiences and purchase intentions. *Tourism Management*, *68*, 127–139. https://doi.org/10.1016/j.tourman.2018.03.003
26. Hede, A. M., Garma, R., Josiassen, A., & Thyne, M. (2014). Perceived authenticity of the visitor experience in museums Conceptualization and initial empirical findings. *European Journal of Marketing*, *48*(7–8), 1395–1412. https://doi.org/10.1108/EJM-12-2011-0771
27. Jarrier, E., & Bourgeon-Renault, D. (2012). Impact of Mediation Devices on the Museum Visit Experience and on Visitors' Behavioural Intentions. *International Journal of Arts Management*, *15*(1), 18–29.
28. Jin, L. H., Xiao, H. G., & Shen, H. L. (2020). Experiential authenticity in heritage museums. *Journal of Destination Marketing & Management*, *18*. https://doi.org/10.1016/j.jdmm.2020.100493
29. Jung, T. H., Lee, H., Chung, N., & Dieck, M. C. T. (2018). Cross-cultural differences in adopting mobile augmented reality at cultural heritage tourism sites. *International Journal of Contemporary Hospitality Management*, *30*(3), 1621–1645. https://doi.org/10.1108/IJCHM-02-2017-0084
30. Kang, J. H., Jang, J. C., & Jeong, C. (2018). Understanding museum visitor satisfaction and revisit intentions through mobile guide system: moderating role of age in museum mobile guide adoption. *Asia Pacific Journal of Tourism Research*, *23*(2), 95–108. https://doi.org/10.1080/10941665.2017.1410190
31. Kaplan-Rakowski, R., Cockerham, D., & Ferdig, R. E. (2024). The impact of sound and immersive experience on learners when using virtual reality and tablet: A mixed-method study. *British Journal of Educational Technology*, *55*(4), 1560–1582. https://doi.org/10.1111/bjet.13417
32. Katz, J. E., & Halpern, D. (2015). Can Virtual Museums Motivate Students? Toward a Constructivist Learning Approach. *Journal of Science Education and Technology*, *24*(6), 776–788. https://doi.org/10.1007/s10956-015-9563-7

33. Kawashima, N. (1998). Knowing the Public. A Review of Museum Marketing Literature and research. *Museum Management and Curatorship, 17*(1), 21–39. https://doi.org/10.1080/09647779800301701
34. Khalil, S., Kallmuenzer, A., & Kraus, S. (2024). Visiting museums via augmented reality: an experience fast-tracking the digital transformation of the tourism industry. *European Journal of Innovation Management*, *27*(6), 2084–2100. https://doi.org/10.1108/EJIM-09-2022-0479
35. Komarac, T. (2014). A New World for Museum Marketing? Facing the Old Dilemmas while Challenging New Market Opportunities. *Market-Tržište, 26*(2), 199-214. https://hrcak.srce.hr/132740
36. Komarac, T., & Ozretic Dosen, D. (2022). Discovering the determinants of museum visitors' immersion into experience: the impact of interactivity, expectations, and skepticism. *Current Issues in Tourism*, *25*(22), 3675–3693. https://doi.org/10.1080/13683500.2021.1952941
37. Komarac, T., Ozretic Dosen, & Zabkar, V. (2024). Managing Visitor Experience in Museums: Aiming Towards Satisfaction Through Edutainment and Perceived Authenticity in Arts and Culture. *Inzinerine Ekonomika-Engineering Economics*, *35*(4), 396–409. https://doi.org/10.5755/j01.ee.35.4.30221
38. Komarac, T., & Ozretić Došen, Đ. (2024). Understanding virtual museum visits: generation Z experiences. *Museum Management and Curatorship*, *39*(3), 357–376. https://doi.org/10.1080/09647775.2023.2269129
39. Komarac, T., Ozretic-Dosen, D., & Skare, V. (2019). The Role of the Museum Shop: Eliciting the Opinions of Museum Professionals. *International Journal of Arts Management*, *21*(3), 28–41.
40. Kuo, N. T., Cheng, Y. S., Chang, K. C., & Hu, S. M. (2018). Assessing the asymmetric impact of interpretation environment service quality on museum visitor experience and post-visit behavioral intentions: a case study of the National Palace Museum. *Asia Pacific Journal of Tourism Research*, *23*(7), 714–733. https://doi.org/10.1080/10941665.2018.1488753
41. Lanir, J., Kuflik, T., Dim, E., Wecker, A. J., & Stock, O. (2013). The Influence of a Location-Aware Mobile Guide on Museum Visitors' Behavior. *Interacting with Computers*, *25*(6), 443–460. https://doi.org/10.1093/iwc/iwt002
42. Lewis, G. D. (2025, February 2). Museum | Definition, History, Types, & Operation. Retrieved from https://www.britannica.com/topic/museum-cultural-institution
43. Li, J., Tu, X. F., Nie, J. W., Ye, J., & Lv, C. (2024a). Visitors' Acceptance of Wearable AR Technology in Museums. *Sage Open*, *14*(4). https://doi.org/10.1177/21582440241303507
44. Li, Y. Z., Yang, R. X., Zou, J. H., Xu, H. J., & Tian, F. (2024b). Human-Centric Virtual Museum: Redefining the Museum Experience Through Immersive and Interactive Environments. *International Journal of Human-Computer Interaction*. https://doi.org/10.1080/10447318.2024.2408861
45. Light, B., Bagnall, G., Crawford, G., & Gosling, V. (2018). The material role of digital media in connecting with, within and beyond museums. *Convergence-The International Journal of Research Into New Media Technologies*, *24*(4), 407–423. https://doi.org/10.1177/1354856516678587
46. Lo, P., Chan, H. H. Y., Tang, A. W. M., Chiu, D. K. W., Cho, A., See-To, E. W. K., Ho, K. K. W., He, M. Y., Kenderdine, S., & Shaw, J. (2019). Visualising and revitalising traditional Chinese martial arts Visitors' engagement and learning experience at the 300 years of Hakka Kungfu. *Library Hi Tech*, *37*(2), 273–292. https://doi.org/10.1108/LHT-05-2018-0071
47. Luo, N., Zhu, Z. H., Ni, Y., Li, H. D., & Zhang, J. (2022). The impact of social media marketing activities in the museum industry. *Online Information Review*. https://doi.org/10.1108/OIR-12-2020-0564
48. Maher, J. K., Clark, J., & Motley, D. G. (2011). Measuring Museum Service Quality in Relationship to Visitor Membership: The Case of a Children's Museum. *International Journal of Arts Management*, *13*(2), 29–42.
49. McCarthy, J., & Ciolfi, L. (2008). Place as Dialogue: Understanding and Supporting the Museum Experience. *International Journal of Heritage Studies*, *14*(3), 247–267. https://doi.org/10.1080/13527250801953736

50. Ponsignon, F., & Derbaix, M. (2020). The impact of interactive technologies on the social experience: An empirical study in a cultural tourism context. *Tourism Management Perspectives*, *35*. https://doi.org/10.1016/j.tmp.2020.100723
51. Recupero, A., Talamo, A., Triberti, S., & Modesti, C. (2019). Bridging Museum Mission to Visitors' Experience: Activity, Meanings, Interactions, Technology. *Frontiers In Psychology*, *10*. https://doi.org/10.3389/fpsyg.2019.02092
52. Rentschler, R., & Hede, A. M. (2007). *Museum Marketing: Competing in the Global Marketplace*. Oxford: Butterworth-Heinemann.
53. Robaina-Calderín, L., Martín-Santana, J. D., & Muñoz-Leiva, F. (2023). Immersive experiences as a resource for promoting museum tourism in the Z and millennials generations. *Journal of Destination Marketing & Management*, *29*. https://doi.org/10.1016/j.jdmm.2023.100795
54. Roederer, C., Revat, R., & Pallud, J. (2020). Does Digital Mediation Really Change the Museum Experience? Museomix in the Lyon-Fourviere Archaeological Museum. *International Journal of Arts Management*, *22*(3), 108–123.
55. Ryding, K., Spence, J., Lovlie, A. S., & Benford, S. (2021). Interpersonalizing Intimate Museum Experiences. *International Journal of Human-Computer Interaction*, *37*(12), 1151–1172. https://doi.org/10.1080/10447318.2020.1870829
56. Sheng, C. W., & Chen, M. C. (2012). A study of experience expectations of museum visitors. *Tourism Management*, *33*(1), 53–60. https://doi.org/10.1016/j.tourman.2011.01.023
57. Sommerauer, P., & Müller, O. (2014). Augmented reality in informal learning environments: A field experiment in a mathematics exhibition. *Computers & Education*, *79*, 59–68. https://doi.org/10.1016/j.compedu.2014.07.013
58. Sylaiou, S., Mania, K., Karoulis, A., & White, M. (2010). Exploring the relationship between presence and enjoyment in a virtual museum. *International Journal of Human-Computer Studies*, *68*(5), 243–253. https://doi.org/10.1016/j.ijhcs.2009.11.002
59. Thyne, M., & Hede, A. M. (2016). Approaches to managing co-production for the co-creation of value in a museum setting: when authenticity matters. *Journal of Marketing Management*, *32*(15–16), 1478–1493. https://doi.org/10.1080/0267257X.2016.1198824
60. Trunfio, M., & Campana, S. (2020). A visitors' experience model for mixed reality in the museum. *Current Issues in Tourism*, *23*(9), 1053–1058. https://doi.org/10.1080/13683500.2019.1586847
61. Trunfio, M., Campana, S., & Magnelli, A. (2020). Measuring the impact of functional and experiential mixed reality elements on a museum visit. *Current Issues in Tourism*, *23*(16), 1990–2008. https://doi.org/10.1080/13683500.2019.1703914
62. Trunfio, M., Jung, T. M. Y., & Campana, S. (2022). Mixed reality experiences in museums: Exploring the impact of functional elements of the devices on visitors' immersive experiences and post-experience behaviours. *Information & Management*, *59*(8). https://doi.org/10.1016/j.im.2022.103698
63. Vu, H. Q., Luo, J. M., Ye, B. H. B., Li, G., & Law, R. (2018). Evaluating museum visitor experiences based on user-generated travel photos. *Journal of Travel & Tourism Marketing*, *35*(4), 493–506. https://doi.org/10.1080/10548408.2017.1363684
64. Wang, J. W., Sun, Y., Zhang, L. Y., Zhang, S. Y., Feng, L., & Morrison, A. M. (2024). Effect of Display Methods on Intentions to Use Virtual Reality in Museum Tourism. *Journal of Travel Research*, *63*(2), 314–334. https://doi.org/10.1177/00472875231164987
65. Wang, Y. W., Stash, N., Sambeek, R., Schuurmans, Y., Aroyo, L., Schreiber, G., & Gorgels, P. (2009). Cultivating Personalized Museum Tours Online and On-Site. *Interdisciplinary Science Reviews*, *34*(2–3), 139–153. https://doi.org/10.1179/174327909X441072
66. Wu, C. H., Lin, Y. F., Peng, K. L., & Liu, C. H. (2023). Augmented reality marketing to enhance museum visit intentions. *Journal Of Hospitality and Tourism Technology*, *14*(4), 658–674. https://doi.org/10.1108/JHTT-05-2022-0129

67. Xu, N. N., Li, Y., Wei, X. B., Xie, L. T., Yu, L. Y., & Liang, H. N. (2024). CubeMuseum AR: A Tangible Augmented Reality Interface for Cultural Heritage Learning and Museum Gifting. *International Journal of Human-Computer Interaction*, *40*(6), 1409–1437. https://doi.org/10.1080/10447318.2023.2171350
68. Yang, X. R., & Zhang, L. N. (2022). Smart tourism technologies towards memorable experiences for museum visitors. *Tourism Review*, *77*(4), 1009–1023. https://doi.org/10.1108/TR-02-2022-0060
69. Yang, Y. Z., Liu, S. J., & Song, X. T. (2023). The Co-creation of Museum Experience Value From the Perspective of Visitor Motivation. *Sage Open*, *13*(4). https://doi.org/10.1177/21582440231202118
70. Zollo, L., Rialti, R., Marrucci, A., & Ciappei, C. (2022). How do museums foster loyalty in tech-savvy visitors? The role of social media and digital experience. *Current Issues in Tourism*, *25*(18), 2991–3008. https://doi.org/10.1080/13683500.2021.1896487