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INVISIBLE GEOGRAPHIES HOW TECHNOLOGY HELPS RECOVER THE FORGOTTEN HISTORIES OF TURKESTAN REGION

Abstract. *The paper examines at how digital innovation helps to preserve cultural heritage in Central Asia, with a focus on six sacred female places in Kazakhstan's Turkestan area. Despite their historical and spiritual value, these places are frequently overlooked in heritage and tourism narratives in favor of Koja Akhmet Yassawi's legacy. The study uses virtual storytelling, augmented reality, and digital mapping to show how technology can increase awareness, improve accessibility, and promote culturally sensitive, sustainable tourism. The study emphasizes the preservation of gendered spiritual history and suggests a digital framework for heritage promotion in the region.*

Key words: *Digital innovation, cultural heritage preservation, sacred female sites, Koja Akhmet Yassawi, Turkestan region, intangible heritage, spiritual Tourism, sustainable tourism.*

Introduction

The legacy of Koja Akhmet Yassawi has had a significant impact on Central Asian cultural heritage, although religious sites associated with women have received little attention. This disparity inhibits awareness of gendered spiritual history and reduces the variety of heritage tourism narratives in Turkestan. Digital techniques like augmented reality, virtual storytelling, and mapping provide new ways to document, preserve, and promote historic locations. The purpose of this article is to investigate how technology might restore neglected female holy geographies, contribute to sustainable tourism, and serve as a model for culturally sensitive digital heritage practices in Kazakhstan.

Turkestan, a city in southern Kazakhstan, is one of Central Asia's most historically significant. It is known as Kazakhstan's spiritual core and a major site on the old Silk Road, having hosted Sufi mystics, scholars, traders, and nomadic cultures. Despite this rich historical history, many components of the cultural narrative are concealed or forgotten. This invisibility is caused by a complex interaction of circumstances, including Soviet-era erasure of Islamic identity, physical degradation of heritage places, a lack of recording, and the marginalization of oral traditions. Furthermore, traditional methods to heritage preservation have frequently concentrated primarily on

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monumental monuments, ignoring the intangible cultural landscapes and micro-histories inherent in local communities.

Recent technological breakthroughs provide transformative opportunities for breaking the silence on these historical issues. AI, VR, and AR not only improve the preservation of cultural items, but they also change the way we access and experience historical tales. These technologies, which use digital storytelling, interactive reconstruction, and participatory mapping, show Turkestan's "invisible geographies"—the tales, locations, and experiences that lay underlying the physical landscape.

This dissertation investigates the dynamic junction of digital innovation and cultural heritage preservation in Central Asia, with a particular emphasis on sacred female pilgrimage destinations in the Turkestan area of Kazakhstan. The six sites under consideration—Gauhar Ana, Rabigha Sultan Begim Mausoleum, Domalak Ana, Mariam Ana (in Sayram and Kazygurt), Karashash Ana (Sayram), and Karabura Ana (Sozak)—represent a distinct strand of spiritual geography that is deeply rooted in local Islamic mysticism, Sufi traditions, and gendered historical narratives. These shrines are more than just religious landmarks; they also serve as centers for intergenerational memory, oral traditions, and community rituals. Their spatial and symbolic importance in Turkestan's cultural landscape present significant opportunities for academic research and heritage-based tourism development.

Each of these locations is inextricably linked to the spiritual legacy of Koja Akhmet Yassawi, the 12th-century Sufi teacher and poet whose teachings continue to influence Central Asian Islamic practice. The women honored at these shrines are frequently seen as protectors, saints, or wise matriarchs whose lives and actions are thought to have had a transformational impact on the moral and spiritual life of their communities. For example, Rabigha Sultan Begim was a famous royal character and Ulugh Beg's wife, but Domalak Ana is honored as Kazakh tribes' ancient mother. These female tales are rich in history and mythology, emphasizing the moral ideals of intelligence, compassion, and resilience. These hallowed sites offer gendered counterpoints to traditionally male-dominated religious narratives, fostering a more diverse knowledge of spiritual heritage.

The chosen places encompass various types of cultural assets, such as historical, architectural, and natural features. This classification offers a complete approach to cultural preservation by prioritizing sites based on historical relevance, structural soundness, and the viability of digital restoration.

Research objectives:

- To investigate the past history and spiritual value of sacred female locations in Kazakhstan's Turkestan location, with a focus on Koja Akhmet Yassawi and local Sufi traditions.
- To investigate the socio-cultural and historical factors contributing to the marginalization of female sacred sites in dominant heritage narratives and tourism strategies.
- To explore how digital technologies—including augmented reality (AR), virtual storytelling, and digital mapping—can be used to revive and promote forgotten or invisible spiritual geographies.
- To evaluate the potential of digital heritage platforms in promoting gender-inclusive, community-based, and culturally sensitive tourism in Central Asia.

The selection of sacred female sites in the Turkestan region - Gauhar Ana, Rabigha Sultan Begim Mausoleum, Domalak Ana, Mariam Ana (Sayram, Kazygurt), Karashash Ana (Sayram), and Karabura Ana (Sozak) - is pivotal for several reasons that tie into the cultural, spiritual, and

historical significance of these sites. Here's a breakdown of why these particular sites are chosen for this study:

Cultural and spiritual significance. These sites are integral to the spiritual and historical fabric of the Turkestan region. The association with Kojā Akhmet Yassawi, a famed Sufi mystic, places these female sacred locations into the larger spiritual environment that influenced the region. They constitute a distinct and frequently underrepresented part of gendered spirituality in Central Asia, making them important to research and maintain. Sufi Mysticism and Gender: Each of these mausoleums and sites commemorates women who played important roles in their societies' spiritual lives. Their relationship with Sufism, as well as their influence on local and regional traditions, cast them as gendered spiritual landscapes that are frequently eclipsed by male-dominated narratives.

Invisible heritage: These female places of worship have long been eclipsed by more prominent male-focused cultural attractions, such as Turkestan's UNESCO World Heritage Site, the Mausoleum of Khoja Ahmed Yasawi. Their marginalization makes them a crucial focus point for rediscovery and digital preservation. Popular heritage and tourism narratives frequently fail to include the feminine side of Central Asian spiritual history. The purpose of this study is to close the cultural representation gap by demonstrating these women and their sacred sites.

Moreover, the chosen sites are dispersed across important districts of Turkestan, from Sayram to Kazygurt and Sozak, and create a rich tapestry of regional difference in both terrain and culture. The geographical location of these places highlights how gendered sacred spaces are dispersed across the region. Interconnecting histories: These locations are not isolated, but rather connected by shared regional and spiritual histories, demonstrating a thorough awareness of how gender, spirituality, and legacy intertwine in Central Asian Islam and Sufism. Their proximity to historical sites like as Sayram and Kazygurt strengthens their cultural significance.

Additionally, considering their significance, these sites have not been extensively documented or displayed in digital format. Their relative lack of knowledge in the digital realm creates an appealing potential for virtual storytelling and augmented reality (AR) apps to bring them to life for a wider audience. The study advises employing digitalization approaches to bridge the gap between the past and the present, providing a modern platform for this forgotten history while staying culturally sensitive. Digital technology can provide new methods for visitors to experience these sacred locations, allowing for a more interactive and accessible approach to historical tourism.

Numerous of these historic female places continue to be important to local communities, particularly in rural areas where storytelling and religion are still critical to daily existence. By focusing on these sites, the study empowers local communities, particularly women, to take ownership of their cultural heritage. This approach fosters a sense of pride and connection to the past, while also ensuring that these sites are preserved for future generations. Promoting Inclusive Tourism: The project aims to highlight inclusive tourism - particularly focusing on women's voices and perspectives - thus promoting gender equity within the tourism and heritage sectors of Central Asia.

Also, Timurid architecture was distinguished by monumental scale, multiple minarets, polychrome tile work, and large spherical double domes. Women were also active patrons of architecture during the Timurid period.

2. Literature Review

2.1 Digital heritage and innovation

Digital heritage has grown fast as an interdisciplinary field during the last two decades, connecting with archaeology, anthropology, computer science, and cultural studies. Scholars like as Champion (2011) and Kenderdine (2019) have suggested that technologies like VR and AR enable immersive and emotionally resonant means for audiences to interact with the past [1; 2]. They allow people to not only witness, but also participate in historical tales. Similarly, Smith (2006) views heritage as a process of cultural meaning-making rather than a static collection of artifacts, noting that the act of remembering is influenced by politics, power, and identity [3].

Digital technologies – particularly virtual storytelling platforms, immersive augmented reality (AR) experiences, 3D modeling, and digital heritage mapping—offer transformative potential for reimagining how these sacred sites are preserved, interpreted, and experienced. Virtual storytelling can present nuanced historical accounts and spiritual narratives to global audiences, while AR applications can simulate rituals, architecture, and symbolic elements in situ or online. Additionally, interactive digital maps can enhance both physical and virtual access to these remote sites, enabling researchers, educators, and tourists to engage with them in contextually rich ways. These tools are not merely promotional; they serve as educational and preservation mechanisms that can protect intangible heritage against the erosion of time, neglect, or modernization.

2.2 Gendered and feminist approaches to heritage

The foundation of this paper lies in understanding how certain sacred spaces—particularly female-oriented sites—have been historically marginalized within dominant narratives of heritage. Laurajane Smith's concept of the Authorized Heritage Discourse (AHD) is particularly relevant, as it critiques how official heritage practices tend to privilege elite, male-dominated, monumental histories while excluding intangible, spiritual, and gendered heritage [3]. This viewpoint explains why the sacred female sites of Gauhar Ana, Domalak Ana, and others in the Turkestan region are often disregarded in mainstream tourism and state heritage narratives. Similarly, Maurice Halbwachs' Collective Memory Theory sheds light on how societies recall the past using socially created frameworks influenced by power and ideology [4]. These ideas provide a prism through which to investigate the invisibility of these sites, as well as the potential for digital tools to democratize memory and access.

The sacred female places examined in this study are not only spiritually significant, but they also hold gendered significance and memory. The concept of Feminist Geography, as described by Doreen Massey and Gillian Rose, emphasizes that space is socially created and fundamentally gendered [5; 6]. This perspective allows for an examination of how women's spiritual contributions are spatialized and remembered – or forgotten – in the physical and symbolic landscapes of Turkestan. Kimberlé Crenshaw's intersectionality theory allows for a more in-depth investigation of how gender intersects with ethnicity, religion, and postcolonial histories in Kazakhstan. This theoretical framework is critical for prioritizing women's voices in both the historical past and the current digital rebirth of these hallowed spaces.

2.3 Digital tools, participation, and ethics

The application of digital technology to cultural heritage presents both opportunities and ethical challenges. Erik Champion's Virtual Heritage Theory offers a paradigm for developing meaningful, immersive digital reconstructions of sacred sites, allowing users to interact with lost or neglected histories in multimodal ways [7]. Technologies such as 3D modeling, augmented reality

(AR), and GIS mapping can aid in the visualization of physically inaccessible or underfunded areas. Henry Jenkins' concept of Participatory Culture is also relevant; it emphasizes how communities may co-create content and narratives utilizing digital tools to recover their history [8]. Applying these theories to the Turkestan case study demonstrates how digital platforms can help to recover cultural memory, particularly when physical preservation is limited due to a lack of resources or institutional neglect.

Sacred sites are not just relics of the past; they are living places that can foster cultural pride and sustainable development. John Urry's Tourist Gaze Theory suggests that tourism is not a neutral act of seeing, but a culturally constructed practice that determines which sites are deemed "worth visiting" [9]. This theory is vital in understanding why male-dominated or monumental sites (like the Mausoleum of Khoja Ahmed Yasawi) attract more visitors, while female sacred sites remain marginalized. Additionally, the Sustainable Heritage Tourism Theory by scholars like Timothy and Boyd advocates for tourism that balances cultural integrity, environmental care, and community empowerment [10]. When applied to the Turkestan context, these theories support the idea that digital storytelling and mapping of female sacred sites can contribute to inclusive tourism development that values local identity and memory.

The invisibility of female spiritual heritage in Turkestan cannot be understood without engaging postcolonial theory. Influenced by Edward Said and Homi Bhabha, postcolonial critiques examine how imperial and Soviet legacies shaped knowledge production and cultural hierarchies in Central Asia [11; 12]. The Soviet regime often suppressed local religious practices, especially those linked to gendered spirituality and mysticism. Linda Tuhiwai Smith's Decolonizing Methodologies further challenges the ways in which research and heritage practices have historically marginalized indigenous voices [13]. By incorporating local oral histories, feminist perspectives, and digital tools, this research seeks to decolonize the way we see, understand, and promote sacred female spaces in Kazakhstan.

The Turkestan region, long celebrated as a cradle of spiritual and cultural richness, is home to a constellation of sacred sites that embody centuries of religious, social, and political history. Yet, much of this legacy remains obscured, undocumented, or fragmented. Today, digital technologies present a transformative opportunity to uncover, preserve, and communicate these "invisible geographies." Drawing from primary sources, archaeological records, and local oral traditions, this literature review explores how sacred female figures and historic mausoleums can be reinterpreted through a technological lens.

2.4 Sacred geographies and gendered heritage

Sacred feminine geographies: Gaukhar Ana, daughter of the great Sufi poet Khoja Ahmed Yasawi, is memorialized through a mausoleum located near the Turkestan–Shauldir highway [14; 20; 23]. Archaeological excavations by the "Aziret Sultan" reserve-museum in 2011 confirmed both the structural and spiritual importance of the site [15]. She was famed for her healing powers, with the water from a nearby well believed to possess curative properties. Oral traditions and texts such as the *Nasab-nama* also record multiple narratives regarding her marriage and lineage, linking her descendants to other saintly figures like Domalak Ana [19].

Domalak Ana (Nûrila), a 14th-century saint, is revered for her wisdom, patience, and conflict-resolution skills. Numerous oral histories describe her as a protector of lineage and family unity [19; 28]. Despite personal tragedy and social hardships, she became a beacon of maternal fortitude.

Her mausoleum in Karatau has undergone multiple restorations, preserving both the legend and the physical structure that commemorates her. Notably, she is seen as a symbol of sacred motherhood and feminine resilience [31].

Rabigha Sultan Begim, daughter of Ulugh Beg from the Timurid dynasty, symbolizes political wisdom and inter-dynastic harmony. Her mausoleum, located just southeast of the Yasawi complex, is an architectural gem that reflects her intellectual and diplomatic stature. She is honored as a bridge between the Timurids and Shaybanids, two rival dynasties of the time [29].

Maryam Ana, believed to be involved in the early Islamic missionary movement in the Sairam region, is also associated with healing and spiritual instruction for women [30; 32]. Her shrine continues to be a major pilgrimage site. Interpretations of her identity vary, with some traditions linking her to early Islamic figures and others emphasizing her role as a local healer and religious educator.

Karashash Ana, believed to be the mother of Khoja Ahmed Yasawi, is honored with a well-preserved mausoleum in Sairam. Her significance is reinforced by architectural analysis showing resilience to earthquakes through innovative construction methods that combine wooden and brick elements [21; 25].

Zhaudir Ana, a 19th-century healer and educator, operated a mosque-madrasa complex near the Yasawi shrine. Excavations confirm its capacity to host over 1,000 people and affirm its historical significance as a spiritual and educational center [15; 33]. Oral traditions describe her remarkable longevity and influence across Turkestan and even into modern-day northern Kazakhstan.

Qanshayym, the mythical mother of Munlyk and Zarlyk, embodies maternal sacrifice and spiritual purity in the Turkic oral epic tradition. Her story, set against the sacred landscapes of the Syr Darya and Karatau [34], blends mysticism, divine intervention, and feminine heroism, reinforcing local sacred geographies with narrative power [24].

Aqsumbe (Aqbikesh) Watchtower, located in the village of Aqsumbe in the Sozak district, is a 13th–14th century architectural monument. Though not a shrine, it is deeply connected to the sacred landscapes of Turkestan due to its strategic and symbolic role in protecting the region. Referenced in Persian chronicles as a military outpost overseeing the Dzhungar invasions, its name and form carry spiritual resonance. Oral legends often tie the site to feminine virtue and martyrdom, with local lore describing Aqbikesh as a brave maiden who leapt from the tower to preserve her honor. While primarily a military structure, its memory survives through sacred narrative associations, making it part of Turkestan's spiritual cartography.

Qyz Äulie, located in the Shardara region of Turkestan, is a sacred burial site marked by a simple iron fence enclosing an oval-shaped grave. Local oral traditions identify it as the resting place of a virtuous young woman, venerated for her chastity and spiritual strength. The site is devoid of inscriptions, emphasizing its role as a spiritual rather than historical landmark. Stories passed through generations portray Qyz Äulie as a symbol of purity and sacrifice, often visited by pilgrims seeking blessings related to family, fertility, and female well-being.

Aman Bike, daughter of Janibek Khan and granddaughter of Barak Khan, was a Kazakh princess whose tombstone is located near the entrance of the Khoja Ahmed Yasawi mausoleum. The inscription describes her as a person full of virtue and modesty. Dated to Rajab 925 AH (1518 CE), her memorial highlights the roles royal women played in spiritual and dynastic traditions of Turkestan [22; 29; 30].

Bibi Maryam, sometimes conflated with Maryam Ana, is also venerated in the Turkestan and Shymkent regions. According to some accounts, she was a pious daughter of Hammad Haji, while others identify her with early Islamic missionary figures. Her role as a female religious guide and healer earned her a sacred space for veneration [18; 27; 31].

2.5. Technological approaches to documenting sacred geographies

Modern technologies now offer powerful tools to document and revitalize the histories of these sacred sites: 3D scanning and virtual reconstruction: These methods can digitally preserve endangered structures like the Zhaudir Ana mosque-madrassa. Such reconstructions ensure that even partially destroyed or undocumented buildings gain global visibility and scholarly engagement. GIS mapping of sacred networks: Geographic Information Systems (GIS) can be used to map and analyze spatial relationships between major shrines and natural landmarks. This includes sites like Karabura, Maryam Ana, Karashash Ana, Qyz Äulie, and mythic places such as Aqsumbe and Khan Princess Island [31; 34]. Mapping these spaces reveals patterns of religious, ecological, and kinship-based settlement and pilgrimage. Augmented Reality (AR) storytelling: AR applications can overlay digital narratives onto physical ruins, offering immersive historical experiences. For example, visitors at the Karabura shrine could engage with animated stories about the saint's spiritual teachings and his connection to Yasawi. Similar technology can be deployed at sites like the Munlyk-Zarlyk epic zones, visualizing oral literature. Digital archives and AI-based text analysis: Artificial intelligence tools can analyze ancient manuscripts, hagiographies, and oral histories, shedding new light on figures like Qanshayym from the epic "Munlyk-Zarlyk," whose mythic presence aligns with the region's maternal lineage symbols. Moreover, the complex of these events will not only save an outstanding work of cultural heritage from destruction. The completion of the construction eliminates the obvious moral and aesthetic damage caused by the sight of an unfinished, crumbling building. A positive social effect will be part of the solution to the problem of continuous sustainable development of the region.

Methodology

This study applies a qualitative, case study-based technique to investigate the Turkestan Region's legacy environment, focusing on Khoja Ahmed Yasawi's Mausoleum and six sacred female geographies. Data were collected between January and April 2025. A total of 42 people were involved, including local historians, tourism officials, digital heritage experts, site caretakers, spiritual practitioners, and young community members. To ensure representation of both expert and community viewpoints, participants were chosen using purposive and snowball sampling methods.

This multi-method approach assures triangulation by combining expert, community, and digital perspectives to investigate how innovation may protect and promote gendered sacred heritage.

1. Semi-structured interviews with key informants including local historians, digital heritage technologists, tourism development officials, site caretakers, and spiritual practitioners.

2. On-site field observations at heritage sites to assess the use and limitations of existing digital tools (e.g., mobile AR applications, VR kiosks, interactive museum installations, QR-code trails).

3. Document analysis of relevant cultural policy reports, UNESCO dossiers, digital preservation charters, and local historical texts in Kazakh, Russian, and Arabic-script sources.

4. Comparative benchmarking of digital heritage practices in other Silk Road regions (e.g., Samarkand, Nishapur, Konya), enabling cross-cultural insights into sacred site interpretation and technological mediation.

5. Social media ethnography and digital survey: A regionally targeted online survey was deployed via Instagram, Telegram, and Facebook, gathering data on public awareness, emotional resonance, and digital engagement with sacred female sites. Metrics included user-generated content, hashtag analysis (#DomalakAna, #SacredTurkestan), and frequency of digital shrine mentions.

6. Participatory heritage mapping using community workshops and mobile-based GIS platforms to document spiritual landmarks including lesser-known female shrines, healing wells, sacred trees, and pilgrimage paths. This method emphasizes *"everyday sacredness"* that official heritage frameworks often overlook.

7. AI-based content analysis: Natural Language Processing (NLP) tools were used to scan and analyze digital discourse (blogs, YouTube comments, TikTok captions) related to female shrines, offering insight into sentiment, frequency, and framing of gendered sacredness.

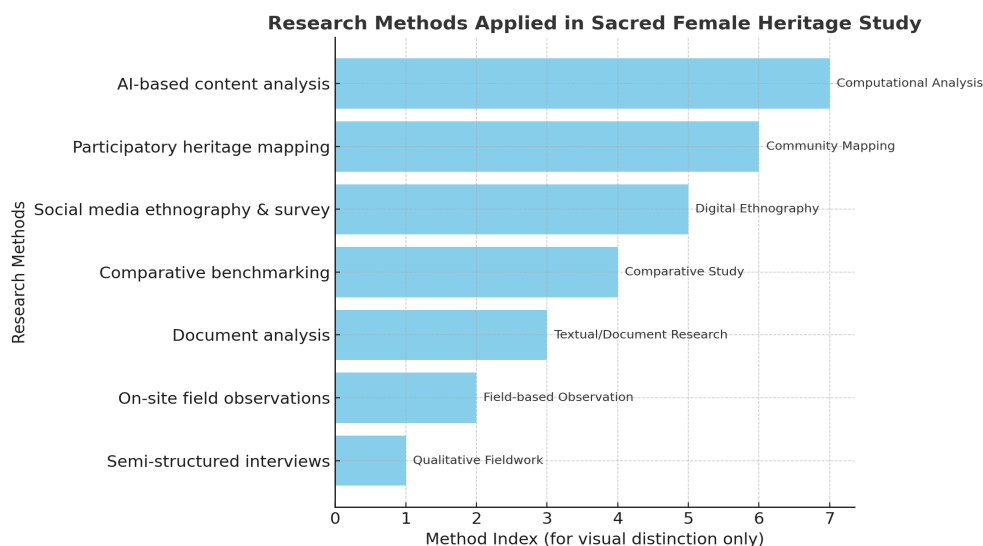


Figure 1 – Mixed-method approach to sacred heritage and digital innovation

Figure 1. Research methods employed in the study, combining traditional fieldwork (interviews, observations, document analysis) with digital approaches (social media ethnography, GIS mapping, AI content analysis) to capture historical, cultural, and technological dimensions of sacred female geographies.

Digital tools analysis

AR, VR, and AI technologies were used to document and analyze female religious locations in Turkestan. AR overlays allowed viewers to see replicas of ruined sites, while VR provided realistic tours of previously inaccessible pilgrimage routes. AI assisted with transcription of oral narratives and analysis of internet discourse, showing thematic patterns in communal memory. These methods increased exposure and interaction, but had limitations. AR/VR initiatives

necessitate costly infrastructure and exclude remote communities without devices or internet access. Digital reconstructions run the risk of oversimplifying conflicting legends into set narratives.

Ethical considerations are essential. Communities were concerned about the possible over-commercialization and secularization of sacred locations through "gamified" AR/VR design. There is additional sensitivity over the preservation and public use of oral histories, particularly when dealing with spiritual traditions that are considered private or gender-specific. To address these concerns, the study underlines the importance of co-creation with local communities, language inclusivity, and design decisions that maintain sacredness while providing greater access to heritage knowledge.

Findings and discussion

The results show how digital innovation changes the perception, interpretation, and transmission of female sacred legacy in Turkestan.

1. According to survey results, Domalak Ana, Gaukhar Ana, and Maryam Ana are the most well-known women between the ages of 25 and 40. Hashtag analysis shows that #DomalakAna receives over 12,000 mentions, while Aman Bike and Qyz Äülie receive less attention.

Table 1 – Digital presence of female sacred sites in Turkestan (social media mentions and visibility themes)

Sacred site	Instagram mentions	Telegram mentions	Facebook mentions	Dominant themes (Hashtags/Posts)
Domalak Ana	8,200	2,500	1,300	#fertility, #healing, #maternalblessing
Gaukhar Ana	5,100	1,800	1,000	#purity, #sacredwater, #YassawiLineage
Maryam Ana	4,300	1,600	900	#faith, #resilience, #spiritualstrength
Karashash Ana	2,200	900	400	#hospitality, #familyhonor
Aman Bike	900	400	150	#forgottenheritage

Table 1 shows a strong digital visibility gap, confirming that some female figures remain marginalized despite historical importance.

2. Spatial patterns and community memory. Participatory mapping and mobile photo-ethnography revealed that locals view sacredness not only in monumental shrines but also in non-institutional spaces: sacred wells, unmarked graves, and natural features like trees or hills. This suggests the existence of a vernacular sacred geography, largely undocumented in official heritage frameworks but strongly present in local spiritual consciousness.

3. Gendered narratives and intergenerational transmission. Audio diary and oral history data emphasized that stories about female saints are often transmitted matrilineally, shared from grandmothers to daughters and grandchildren. These stories focus on moral resilience, hospitality, healing, and faith—elements rarely highlighted in formal Islamic historiography but central to local identity.

4. AI analysis of digital narratives. Natural Language Processing tools identified dominant themes such as “patience,” “sacrifice,” “purity,” and “blessing” in user-generated content about

female saints. Importantly, sentiment analysis revealed that female sacred figures are discussed in more emotionally resonant language compared to their male counterparts, indicating a deeper personal identification.

5. Augmented narrative and user input. Usability testing of prototype AR tools (e.g., Domalak Ana life stories or AR markers at Gaukhar Ana's well) elicited strong emotional responses, particularly from younger users. Participants said that the technologies made the website feel more "alive," "personal," and "less abstract." This demonstrates the potential of immersive storytelling to transcend age barriers and promote cultural continuity.

Furthermore, monument in honor of the Great Mother Bibijar, daughter of Aksultan". Further, there is a call to honor mothers. Women from all over Kazakhstan, who wish to have children, health and family well-being, visit her tomb.

Prototype AR storytelling (e.g., Domalak Ana life narratives, AR markers at Gaukhar Ana's well) elicited high positive responses, particularly among young people.

Table 2 – User Responses to AR/VR Prototypes (Pilot usability testing, n = 50)

Response Category	Positive (%)	Neutral (%)	Negative (%)	Example Feedback
Emotional engagement	78%	15%	7%	"It feels alive and personal"
Cultural appropriateness	62%	25%	13%	"Good, but avoid flashy effects in shrines"
Accessibility (language, UI)	55%	30%	15%	"Need more Kazakh options"
Tourism interest generated	68%	20%	12%	"I would visit Domalak Ana after seeing this"

Table 2 indicates that immersive storytelling strengthens emotional engagement and tourism interest, while also raising concerns about cultural sensitivity and linguistic inclusivity.

6. Challenges with digital representation. Some seniors and rural communities are still technologically disconnected, which puts them at danger of being excluded from ongoing heritage digitization projects. Cultural appropriateness: There were concerns about using flashy or gamified AR content to commercialize or secularize hallowed sites. Language bias: Many existing programs default to Russian or English, limiting access for Kazakh or Turkic monolingual speakers.

7. Effects on tourism and heritage valorisation. Female sacred places with a strong digital presence (such as Domalak Ana) have seen modest but significant growth in domestic pilgrimage and cultural tourism, particularly among women-led travel groups and spiritual retreats. These patterns lend support to the idea that gendered holy heritage might meaningfully diversify and localize tourism development.

Conclusion

This study proves that the Turkestan Region's sacred female landscapes, which have long been dominated by patriarchal narratives and underrepresented in digital heritage, are essential to

local memory, identity, and spiritual practice. Saints like Domalak Ana, Gaukhar Ana, and Maryam Ana serve as cultural anchors in a larger ecology of gendered legacy. By integrating traditional fieldwork with digital innovation (AR, VR, AI transcription, and interactive mapping), this study demonstrates how emerging technologies can rejuvenate neglected areas, preserve oral traditions, and improve intergenerational ties. At the same time, these tools are not neutral; their design and implementation must be ethical, culturally sensitive, and inclusive. Recognizing female holy legacy as important, rather than marginal, provides a more equitable and comprehensive understanding of important Asian history, as well as support for its inclusion in sustainable tourism and heritage programs.

Table 3 – Recommendations for Preserving and Promoting Female Sacred Heritage in Turkestan

Action	Purpose	Key stakeholders
Co-create digital content with communities	Ensure authenticity, avoid cultural appropriation	Local women, elders, youth, heritage NGOs
Integrate Kazakh and Turkic languages	Promote inclusivity, widen accessibility	App developers, translators, cultural institutions
Promote female heritage sites in sustainable tourism	Diversify tourism narratives, support mindful travel	Tourism boards, local tour operators, policymakers
Develop an open-access digital archive	Centralize knowledge, preserve oral histories	Universities, museums, digital heritage labs
Train local digital heritage stewards	Build capacity, ensure long-term sustainability	Youth groups, heritage professionals, local schools
Safeguard sacredness in digital design	Maintain cultural sensitivity, avoid commercialization	Tech developers, religious leaders, cultural councils
Support interdisciplinary research	Expand knowledge on gendered heritage	Academics, research institutes, funding bodies

To translate these insights into practice, the study proposes a set of recommendations aimed at balancing technological innovation with cultural sensitivity. The recommendations emphasize community involvement, linguistic inclusivity, sustainable tourism development, and the safeguarding of sacredness in digital design. Table 3 summarizes these proposed actions, their intended purposes, and the key stakeholders responsible for implementation.

By implementing these measures, the preservation and promotion of female sacred sites in Turkestan can progress from symbolic recognition to active inclusion in heritage, policy, and tourism, ensuring that women's spiritual geographies remain visible, respected, and meaningful for future generations.

BIBLIOGRAPHY

1. Champion E. *Playing with the Past: Digital Games and the Simulation of History*. – Springer, 2011. – 245 p.
2. Kenderdine S. Embodiment, entanglement, and immersion: The future of cultural heritage experiences // *Journal of Cultural Heritage*. – 2019. – Vol. 37. – P. 1–12.
3. Smith L. *Uses of Heritage*. – London: Routledge, 2006. – 368 p.
4. Halbwachs M. *On Collective Memory* / Ed. and trans. by L. A. Coser. – Chicago: University of Chicago Press, 1992. – 256 p. (Original work published 1950).
5. Massey D. *Space, Place, and Gender*. – Cambridge: Polity Press, 1994. – 320 p.

6. Rose G. *Feminism and Geography: The Limits of Geographical Knowledge*. – Cambridge: Polity Press, 1993. – 230 p.
7. Champion E. *Critical Gaming: Interactive History and Virtual Heritage*. – London: Routledge, 2015. – 270 p.
8. Jenkins H. *Convergence Culture: Where Old and New Media Collide*. – New York: New York University Press, 2006. – 336 p.
9. Urry J. *The Tourist Gaze*. – 2nd ed. – London: Sage Publications, 2002. – 180 p.
10. Timothy D. J., Boyd S. W. *Heritage Tourism*. – Harlow: Pearson Education, 2003. – 352 p.
11. Said E. W. *Orientalism*. – New York: Pantheon Books, 1978. – 368 p.
12. Bhabha H. K. *The Location of Culture*. – London: Routledge, 1994. – 345 p.
13. Smith L. T. *Decolonizing Methodologies: Research and Indigenous Peoples*. – London: Zed Books, 1999. – 208 p.
14. Агеева Е. И., Пацевич Г. И. Из истории оседлых поселений и городов Южного Казахстана // Труды Института истории, археологии и этнографии. – Т. V. – Алматы, 1958.
15. Әуезов атындағы әдебиет және өнер институты. Жәудір ана мешіті бойынша археологиялық есеп. – Түркістан: Өзірет Сұлтан музейі, 2013. – 150 б.
16. Bevan R. *The Destruction of Memory: Architecture at War*. – London: Reaktion Books, 2016. – 320 p.
17. *Bulletin of the International University of Tourism and Hospitality*. – 2024. – Т. 3, № 5. – С. 73–82.
18. Crenshaw K. Demarginalizing the intersection of race and sex: A Black feminist critique of antidiscrimination doctrine, feminist theory, and antiracist politics // *University of Chicago Legal Forum*. – 1989. – Vol. 1989(1). – P. 139–167.
19. Дүйсенбаев Д. Домалақ ана. – Алматы: Қазақ университеті, 1991. – 210 б.
20. Гың Шымин. Қарахандықтар тарихына қысқаша шолу // *Таным тармақтары*. – Алматы: Ғылым, 1998. – С. 205–223.
21. Жақанов И. Қарабура: тарихи-танымдық жинақ. – Алматы: Өлке, 1997. – 245 б.
22. Жолдасбекұлы М., Салғараұлы Қ., Сейдімбек А. Қарабура // *Ел тұтқа*. – Алматы: Kul Tegin, 2001. – С. 53–556.
23. Қазыналы Оңтүстік. 4-кітап. – Алматы: Санат, 2012. – 400 б.
24. Кожа М. Башня Аксумбе (Акбикеш) // *От Алтая до Каспия. Атлас памятников и достопримечательностей природы, истории и культуры Казахстана*. – Алматы: Раритет, 2011. – С. 134–137.
25. Қожа М. Ортағасырлық Отырар. Аңыздар, деректер, зерттеулер. – Түркістан: Тұран, 2006. – 310 б.
26. Қожа М. Ортағасырлық Отырар тарихы. – Алматы: Арыс, 2017. – 280 б.
27. Қожа М., Түрсүн Х., Сағидолда Г., Ескеева М., Құрманбаева Ш., Жандарбек З., Миразов М., Мұстапаева Д., Мансұров Н., Ахметова М., Еспекова Л., Сарекенова Қ., Тастанбеков М., Өмірбекова Ж., Амангельдиев М., Байсариева Г. Түркістан – руханият бесігі. *Лингво-өлкетану энциклопедиясы*. – Нұр-Сұлтан: Нұрнама.KZ, 2019. – 504 б.
28. Марғұлан Ә. Х. Оседлые поселения VIII–XIII вв. на северных склонах Каратау // *Известия АН КазССР. Сер. археол.* – 1948. – Вып. 1 (№ 46). – С. 25–56.
29. Оңтүстік Қазақстан облысы: энциклопедия / Бас ред. Б. Ғ. Аяған. – Алматы: Қазақ энциклопедиясы ЖШС, 2005. – 756 б.
30. Тынышбаев М. Материалы к истории киргиз-казахского народа. – Ташкент: Восточное отделение Кирг. гос. изд., 1925. – 195 с.
31. Түркістан облысындағы киелі орындардың қазақ халқы рухани-мәдени болмысындағы орны: халықаралық ғылыми-тәжірибелік конференция материалдары. – Түркістан: ХТЖМУ, 2024. – 379 б.
32. Уәлиханов Ш. Шығармалар жинағы. Т. 1. – Алматы: Атамұра, 2010. – 300 б.

33. Хазбулатов А. Р., Шайгозова Ж. Н. Живая традиция в условиях перемен: институт паломничества к сакральным объектам Туркестанского оазиса // Күлтөбе қалажұртын зерттеу материалдары: нәтижелері мен болашағы. – Алматы: ҚазҒЗМИ, 2020. – С. 114–126.

34. Шілтерханов Ә. Мұңлық-Зарлық оқиғасы қайда өткен? // Шығармалары. Т. 2. – Алматы: Жазушы, 2001. – С. 78–94.

REFERENCES

1. Champion E. *Playing with the Past: Digital Games and the Simulation of History*. – Springer, 2011. – 245 p.
2. Kenderdine S. Embodiment, entanglement, and immersion: The future of cultural heritage experiences // *Journal of Cultural Heritage*. – 2019. – Vol. 37. – P. 1–12.
3. Smith L. *Uses of Heritage*. – London: Routledge, 2006. – 368 p.
4. Halbwachs M. *On Collective Memory* / Ed. and trans. by L. A. Coser. – Chicago: University of Chicago Press, 1992. – 256 p. (Original work published 1950).
5. Massey D. *Space, Place, and Gender*. – Cambridge: Polity Press, 1994. – 320 p.
6. Rose G. *Feminism and Geography: The Limits of Geographical Knowledge*. – Cambridge: Polity Press, 1993. – 230 p.
7. Champion E. *Critical Gaming: Interactive History and Virtual Heritage*. – London: Routledge, 2015. – 270 p.
8. Jenkins H. *Convergence Culture: Where Old and New Media Collide*. – New York: New York University Press, 2006. – 336 p.
9. Urry J. *The Tourist Gaze*. – 2nd ed. – London: Sage Publications, 2002. – 180 p.
10. Timothy D. J., Boyd S. W. *Heritage Tourism*. – Harlow: Pearson Education, 2003. – 352 p.
11. Said E. W. *Orientalism*. – New York: Pantheon Books, 1978. – 368 p.
12. Bhabha H. K. *The Location of Culture*. – London: Routledge, 1994. – 345 p.
13. Smith L. T. *Decolonizing Methodologies: Research and Indigenous Peoples*. – London: Zed Books, 1999. – 208 p.
14. Ageeva E. İ., Pasevich G. İ. *İz istorii osedlyh poseleni i gorodov İujnogo Kazahstana [From the history of settled settlements and cities of Southern Kazakhstan] // Trudy İnstituta istorii, arheologii i etnografii*. – T. V. – Almaty, 1958.
15. Äuezov atyndağy ädebiet jäne öner instituty. *Jäudır ana meşıtı boıynşa arheologialyq esep [Archaeological report on the Jäudır Ana Mosque]*. – Türkıstan: Äzıret Sülтан muzeıı, 2013. – 150 b.
16. Bevan R. *The Destruction of Memory: Architecture at War*. – London: Reaktion Books, 2016. – 320 p.
17. *Bulletin of the International University of Tourism and Hospitality*. – 2024. – T. 3, № 5. – S. 73–82.
18. Crenshaw K. Demarginalizing the intersection of race and sex: A Black feminist critique of antidiscrimination doctrine, feminist theory, and antiracist politics // *University of Chicago Legal Forum*. – 1989. – Vol. 1989(1). – P. 139–167.
19. Düisenbaev D. *Domalaq ana [Mother Domalaq]*. – Almaty: Qazaq universiteti, 1991. – 210 b.
20. Gyñ Şymın. *Qarahandyqtar tarihyına qysqaşa şolu [A brief overview of the history of the Karahandids] // Tanyım tarmaqtary*. – Almaty: Ğylym, 1998. – S. 205–223.
21. Jaqanov İ. *Qarabura: tarihi-tanyımdyq jınaq [Qarabura: Historical and cognitive collection]*. – Almaty: Ölke, 1997. – 245 b.
22. Joldasbeküly M., Salğaraüly Q., Seidımbek A. *Qarabura [Qarabura] // El tütqa*. – Almaty: Kul Tegin, 2001. – S. 53–556.
23. *Qazynaly Oñtüstik [Treasured South]*. 4-kıtap. – Almaty: Sanat, 2012. – 400 b.

24. Kojā M. Bařnā Aksumbe (Akbikeř) [Bashna Aksumbe (Akbikesh)] // Ot Altaia do Kaspia. Atlas pamātnikov i dostoprimechatelnosti prirody, istorii i kŭltury Kazahstana. – Almaty: Raritet, 2011. – S. 134–137.
25. Qoja M. Ortağasyrlyq Otyrar. Aңызdar, derekter, zertteuler [Medieval Otyrar: Legends, data, research]. – Türkıstan: Tŭran, 2006. – 310 b.
26. Qoja M. Ortağasyrlyq Otyrar tarihy [History of Medieval Otyrar]. – Almaty: Arys, 2017. – 280 b.
27. Qoja M. et al. Türkıstan – ruhaniat besıgı. Lingvo-ölketanu ensiklopediasy [Turkistan – the cradle of spirituality. Linguo-cultural encyclopedia]. – Nŭr-Sŭltan: Nŭrnama.KZ, 2019. – 504 b.
28. Marğŭlan Ä. H. Osedlye poselenia VIII–XIII vv. na severnyh sklonah Karatau [Settled settlements of the 8th–13th centuries on the northern slopes of Karatau] // İzvestia AN KazSSR. Ser. arheol. – 1948. – Vyp. 1 (№ 46). – S. 25–56.
29. Oñtŭstık Qazaqstan oblysy: ensiklopedia [South Kazakhstan Region: Encyclopedia] / Bas red. B. Ğ. Aiağan. – Almaty: Qazaq ensiklopediasy JŞS, 2005. – 756 b.
30. Tynyřbaev M. Materialy k istorii kirgiz-kazahskogo naroda [Materials on the history of the Kyrgyz-Kazakh people]. – Tařkent: Vostochnoe otdelenie Kirg. gos. izd., 1925. – 195 s.
31. Türkıstan oblysyndağy kielı oryndardyń qazaq halqy ruhani-mādeni bolmysyndağy orny: halyqaralyq ğylymi-tājiribelık konferensia materialdary [The role of sacred sites in the spiritual and cultural identity of the Kazakh people in the Turkistan region: proceedings of the international scientific-practical conference]. – Türkıstan: HTjMU, 2024. – 379 b.
32. Uālihanov ř. řyğarmalar jinağy [Collected works]. T. 1. – Almaty: Atamŭra, 2010. – 300 b.
33. Hazbulatov A. R., řaigozova J. N. Jivaia tradisia v usloviah peremen: institut palomnichestva k sakrālным obektam Turkestanskogo oazisa [Living tradition in the context of change: the institution of pilgrimage to sacred sites of the Turkestan oasis] // Kŭltöbe qalajŭrtyn zertteu materialdary: nātijeleri men bolařağy. – Almaty: QazĞZMĪ, 2020. – S. 114–126.
34. řilterhanov Ä. Mŭñlyq-Zarlyq oqığasy qaida ötken? [Where did the Mŭñlyq-Zarlyq story take place?] // řyğarmalary. T. 2. – Almaty: Jazuřy, 2001. – S. 78–94.

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**КӨРІНБЕЙТІН ГЕОГРАФИЯЛАР: ТЕХНОЛОГИЯ ТҮРКІСТАН Өңірінің Ұмыт
Қалған Тарихын Қалай Қайта Жандандырады**

Аңдатпа. Бұл мақалада Орталық Азиядағы мәдени мұраны сақтау ісінде цифрлық инновациялардың рөлі қарастырылады. Зерттеу Қазақстанның Түркістан өңіріндегі алты киелі әйелдерге қатысты орындарға назар аударады. Тарихи және рухани маңызына қарамастан, бұл нысандар көбінесе Қожас Ахмет Ясауи мұрасын дәріптеуге басымдық берілетін мәдени және туристік нарративтерде елеусіз қалып жатады. Зерттеу виртуалды сторителлинг, толықтырылған шындық (AR) және цифрлық картография әдістерін пайдалана отырып, технологияның осы киелі орындар туралы ақпаратты кеңейтуге, қолжетімділікті арттыруға және мәдени тұрғыдан сезімтал әрі тұрақты туризмді дамытуға қалай үлес қоса алатынын көрсетеді. Мақала гендерлік рухани тарихты сақтау маңыздылығын атап өтіп, өңірдің мәдени мұрасын цифрлық ілгерілетуге арналған тұжырымдамалық негіз ұсынады.

Кілт сөздер: цифрлық инновация, мәдени мұраны сақтау, киелі әйелдер орындары, Қожас Ахмет Ясауи, Түркістан өңірі, материалдық емес мұра, рухани туризм, тұрақты туризм.

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НЕВИДИМЫЕ ГЕОГРАФИИ: КАК ТЕХНОЛОГИИ ПОМОГАЮТ ВОЗРОДИТЬ ЗАБЫТЫЕ ИСТОРИИ ТУРКЕСТАНСКОГО РЕГИОНА

Аннотация. В статье рассматривается роль цифровых инноваций в сохранении культурного наследия Центральной Азии. Исследование сосредоточено на шести священных женских местах Казахстана, расположенных в Туркестанском регионе. Несмотря на их историческую и духовную значимость, эти объекты часто остаются в тени культурных и туристических нарративов, где основное внимание уделяется наследию Ходжи Ахмеда Ясави. В работе используются методы виртуального сторителлинга, дополненной реальности (AR) и цифрового картографирования, чтобы показать, как технологии могут способствовать повышению осведомлённости, улучшению доступности и развитию культурно чувствительного и устойчивого туризма. В статье подчёркивается важность сохранения гендерной духовной истории и предлагается цифровая концептуальная модель продвижения культурного наследия региона.

Ключевые слова: цифровые инновации, сохранение культурного наследия, священные женские места, Ходжа Ахмед Ясави, Туркестанский регион, нематериальное наследие, духовный туризм, устойчивый туризм.