

Developing a Framework for Accounting for Heritage Assets: A Case Study of the Kurdistan Region of Iraq

Amjad S. Al-Delawi^{1*} and Waheed M. Ramo²

¹ *Department of Accounting, Cihan University–Erbil, Erbil, Iraq, * amjad.delawi@cihanuniversity.edu.iq

² Department of Accounting, University of Mosul, Mosul, Iraq

.How to cite this article: Amjad S. Al-Delawi, Waheed M. Ramo (2024) Anomaly Detection in Fog Computing: State-of-the-Art Techniques, applications, Challenges, and Future Directions. *Library Progress International*, 44(3), 13994-14007.

ABSTRACT

This research investigates the challenges of accounting for heritage assets in museums, archaeological institutions, and creative arts organizations. Key issues include difficulty in valuation, lack of standardized accounting practices, and unrecorded losses. The study adopts a critical approach, analyzing the limitations of current accounting practices and proposing improvements. A particular focus is on the Kurdistan Region of Iraq, with its rich Mesopotamian heritage. The limited use of information technology (IT) in Iraqi accounting practices further complicates the issue. The research investigates the need to transition to modern, IT-driven approaches specifically for valuing heritage assets. Seven key research questions guide the study, exploring topics such as the comparability of heritage assets to traditional fixed assets, the need for unique accounting treatments, and the effectiveness of existing information systems. The research aims to contribute to the preservation of cultural heritage through innovative accounting methods. It proposes a novel valuation method for heritage assets and explores its effectiveness through an inductive research approach. The study's findings can enhance accounting practices for heritage assets, leading to a clearer picture of a nation's cultural and financial health.

Keywords: Heritage assets; Accounting practices; Information technology in accounting; Valuation challenges; Kurdistan Region of Iraq.

1. Introduction

Mesopotamia, the cradle of civilization, boasts a rich tapestry of monuments that stand as testaments to the rise and fall of empires, the flourishing of city-states, and the ingenuity of its people. From the iconic ziggurats of Ur to the majestic Ishtar Gate of Babylon, these structures whisper tales of the Sumerians, Babylonians, Assyrians, and countless other cultures that thrived in this fertile crescent between the Tigris and Euphrates rivers. This region witnessed the blossoming of human society, marked by groundbreaking innovations that forever altered the course of history. Here, the first seal was pressed, the first envelope contained a message, the first musical notes resonated, and the first wheel spun, revolutionizing transportation. Mesopotamia also holds the distinction of establishing the first parliament, laying the foundation for democratic ideals.

The sheer ubiquity of Mesopotamian monuments is awe-inspiring. They dot every province of modern-day Iraq, a testament to the region's vibrant past. It is no exaggeration to say that Iraq harbors one of the most extensive collections of both registered and unregistered archaeological sites on the planet. Many of these elevated hills, still awaiting official registration, hold untold stories waiting to be unearthed. Unfortunately, even among the registered sites, a staggering 90% remain unexcavated, shrouding the region's history in a veil of mystery. The Kurdistan Region of Iraq takes particular pride in its monumental heritage. This area, teeming with archaeological treasures dating back millennia, boasts over 4,000 documented sites representing diverse eras and civilizations. This abundance of archaeological wealth underscores the region's crucial role in understanding the evolution of human society.

The measurement and disclosure of heritage assets in Kurdistan, Iraq, have been a subject of significant research and concern. Studies have highlighted the importance of preserving cultural heritage in the region, especially in the face of recent events that have posed threats to archaeological sites [1, 2]. Research projects like the Upper

Greater Zab Archaeological Reconnaissance (UGZAR) and the Settlement history of Iraqi Kurdistan project have been instrumental in identifying, recording, and assessing archaeological sites and heritage monuments in the area, shedding light on the rich history and cultural significance of the region [3, 4]. Furthermore, there is a call for the development of accounting standards specifically tailored to heritage assets, emphasizing the need for accurate measurement and disclosure practices to safeguard these valuable resources for future generations [5]. Furthermore, the region's rich urban heritage, representing diverse ethnic and religious backgrounds, has long suffered from deterioration [6]. In post-conflict areas like Kurdistan, challenges in rebuilding infrastructure and implementing proper tourism management planning hinder heritage protection and cultural tourism development [3]. Governmental organizations in countries with differing cultures and accounting systems strongly support recognizing heritage items as assets in financial reporting, although conflicting positions exist on measuring bases [2]. The lack of integrated tourism policies, knowledge on heritage asset protection, and infrastructure investment contribute to underdeveloped heritage conservation in Kurdistan, impacting cultural tourism potential [7]. These challenges underscore the importance of addressing heritage asset measurement and disclosure issues to promote sustainable development and preserve cultural identity in the region.

The measurement and disclosure of heritage assets in Kurdistan is a crucial endeavor that requires a multidisciplinary approach encompassing fields such as archaeology, cultural heritage management, accounting, and public sector management. The region of Kurdistan in Iraq holds a significant historical and cultural heritage, with numerous archaeological sites that are essential for understanding the rich history of the area [8]. Studies have highlighted the importance of safeguarding these heritage assets through remote sensing monitoring and documentation using advanced technologies like UAVs [9]. The documentation of cultural heritage sites, such as the historic city of Zakho, provides valuable insights into the preservation and management of these assets [8, 9]. In the context of financial reporting and accounting, heritage assets pose unique challenges due to their intangible and priceless nature. There is a growing recognition of the need to include heritage assets in accounting practices, especially in the public sector, where standards for recognizing and reporting heritage assets are still evolving [10]. Research has emphasized the importance of defining public cultural heritage items and establishing criteria for when they should be considered as assets for reporting purposes [2]. However, there is skepticism surrounding the measurement of heritage assets and their inclusion in financial statements, with concerns about the potential impact on the intrinsic value of these assets [11].

In conclusion, the measurement and disclosure of heritage assets in Kurdistan, Iraq require a comprehensive and interdisciplinary approach that integrates archaeological research, cultural heritage management, accounting practices, and sustainable development initiatives. By leveraging advanced technologies for monitoring and documenting heritage sites, addressing challenges in financial reporting, and implementing sustainable practices in urban conservation, Kurdistan can effectively preserve its rich cultural heritage for future generations.

2. Research Methodology

2.1. Problem Statement

This study investigates the challenges associated with accounting for heritage assets in organizations like museums, archaeological institutions, and creative arts entities. These challenges include:

- **Valuation Difficulty:** Determining the fair value of heritage assets is complex due to their unique nature and lack of comparable items.
- **Accounting Standards Misalignment:** Existing government and unified Iraqi accounting systems lack provisions for measuring and disclosing heritage assets.
- **Unrecorded Losses:** Many valuable heritage assets remain unvalued, leading to underestimation of their significance and increased risk of loss.

Furthermore, the absence of international accounting standards for heritage assets and conflicting academic viewpoints regarding their treatment exacerbate these issues. This research adopts a critical approach to examine the validity of different academic perspectives on accounting for heritage assets. By identifying and analyzing the limitations of current accounting information presentation for these assets, the study aims to contribute to the development of improved practices.

2.2. The Field Problem

While information technology (IT) has revolutionized various aspects of life, its application in Arab countries, particularly Iraq, remains limited. In most cases, IT is used for basic tasks like calculations, printing, or rudimentary accounting software. Additionally, accountants often have freedom in choosing methods, creating

inconsistencies in accounting practices. This research investigates the challenges arising from the need to transition from traditional methods of preparing and implementing accounting information systems to modern, IT-driven approaches, specifically in the context of heritage assets. Furthermore, the study will analyze existing selection mechanisms for accounting information on heritage assets and assess their effectiveness in developing accounting treatments suited to their unique nature.

The core issue extends beyond limited IT usage in routine accounting tasks. It encompasses the need to strategically transform the accounting profession within its local, regional, and global context. This research focuses on this shift from a tactical profession focused on immediate needs to a strategic one that leverages IT to unlock new possibilities, specifically in valuing heritage assets.

Based on the identified problem, the following research questions will guide the study:

- Are heritage assets comparable to traditional tangible fixed assets?
- Do heritage assets require unique accounting treatments due to their specific characteristics?
- How do international accounting bodies view the recognition of heritage assets?
- Does valuing heritage assets accurately reflect a nation's financial and cultural health?
- Are the Iraqi and unified accounting systems compatible with the nature of heritage assets?
- Are there any approved accounting treatments for heritage assets in the Kurdistan Region of Iraq?
- Will adopting technical accounting frameworks enhance mechanisms for providing accounting information on heritage assets?

These questions form the foundation for establishing the research's significance, objectives, and models. The research aims to provide logical answers based on data collected during the field study.

2.3. Research Significance

This research holds significant importance due to the inherent value of heritage assets. These assets represent a cultural and historical legacy passed down through generations, reflecting the contributions of our ancestors. However, recent events in Iraq have unfortunately resulted in the loss of many of these invaluable treasures.

This study aims to contribute to the preservation of this cultural legacy through innovative approaches in accounting, auditing, and security. A core objective is to propose methods for estimating the financial value of heritage assets. This research breaks new ground in the Arab world, with particular relevance to Iraq given the region's rich Mesopotamian heritage encompassing numerous past civilizations.

2.4. Research Objectives

This research seeks to achieve the following key objectives:

- Analyzing the role of accounting information systems in designing practical methods for managing heritage assets, ensuring consistency with their unique characteristics and real-world needs.
- Exploring ways to leverage accounting information to establish practical procedures for accurately accounting for heritage assets.
- Establishing a clear definition and classification system for heritage assets.
- Demonstrating how valuing heritage assets can provide a clearer picture of Iraq's rich cultural heritage and contribute to its recognition on the global stage.

2.5. Research Hypotheses

This research is guided by the following two hypotheses:

- Hypothesis 1: Accurately reflecting the value of heritage assets in financial statements will provide a clearer picture of a nation's cultural standing and potentially enhance the financial position of the state and organizations holding such assets.
- Hypothesis 2: Establishing clear and consistent accounting procedures for measuring and disclosing heritage assets is crucial. Achieving consensus among accountants on these methods will be essential for effective implementation.

2.6. Research Plan

To achieve the research objectives, an inductive approach will be employed. The research plan is structured into three main phases:

➤ Phase 1: Defining heritage assets and treatments

This phase will establish a clear definition of heritage assets and explore existing accounting treatments for these assets.

➤ Phase 2: Proposed valuation method for heritage assets

This phase will develop and present a novel method for estimating the value of heritage assets.

➤ Phase 3: Analysis and conclusion

Data collected during the field study will be analyzed to evaluate the effectiveness of the proposed valuation method. The research will culminate in key conclusions and recommendations based on the findings.

3. The Concept of Heritage Assets and Accounting Treatments

3.1. Defining Heritage Assets

Heritage assets are defined by various organizations with a focus on their unique characteristics.

➤ Financial Accounting Standards Board (FASB) [12]:

- Property, establishments, and equipment with historical or natural, cultural, educational, artistic, or architectural importance.

➤ UNESCO 1972 [13]:

Recognized heritage assets include:

- Archaeological works, sculptures, paintings.
- Archaeological elements, structures, inscriptions, caves, dwellings.
- Monument groups with prominent historical, artistic, or scientific value.
- Collections of buildings with prominent historical, artistic, or scientific value.
- Collective works of nature including archaeological sites with historical, aesthetic, ethnological, or anthropological value.

➤ International Public Sector Accounting Standards Board (IPSAS) [14]:

Key characteristics:

- Environmental or historical importance (buildings, monuments, sites, protected areas, nature reserves, artworks).
- Subject to strict limitations on sale or disposal.
- Often irreplaceable, with potential value increase despite deterioration.
- Difficult to estimate useful life, which can span centuries.

➤ International Valuation Standards Board (IVSB) [15]:

Historic properties are real properties officially designated by a government body for their cultural or historic importance.

➤ International Federation of Accountants (ASB) [16]:

Tangible assets with historical, artistic, scientific, technological, geophysical, or environmental qualities, held primarily for their contribution to knowledge and culture.

➤ Wild [17]:

Based on Australian Treasury Department's Accounting Policy Law:

- Property (land, art collections, antiques, library contents, historical/archaeological sites) preserved for historical value.
- Possesses unique cultural, historical, geographical, scientific, or environmental qualities.
- Government intends to keep them indefinitely for these qualities.
- Not typically available for sale or alternative use.

Accounting literature presents differing views on whether heritage assets qualify as assets:

1. One perspective: Defines assets per International Accounting Standards (IAS) as resources controlled by an entity, obtained through past events, with the expectation of future economic benefits. This definition could encompass most heritage assets.
2. Opposing perspective: Questions whether assets not intended for operational, display, or cultural/educational purposes can generate future benefits, justifying their capitalization.

The UK Accounting Standards Board [18] considers heritage assets as fixed assets, regardless of direct income generation. Museums require these assets, and their presence can contribute to academic research. Both approaches presented consider heritage assets as community property, preserved for historical importance and characterized by long-lasting productive life. They are akin to fixed assets, considered long-term societal property, with the expectation of future benefits (economic or scientific), similar to social and environmental costs and benefits.

3.2. Types of Heritage Assets

3.2.1. Classification Challenges

Scholars disagree on how to classify heritage assets. Some terms, like "community assets" [19], encompass items beyond heritage, such as parks, sports grounds, and infrastructure. Additionally, "community assets" is broad, failing to distinguish between heritage items and those available for sale or economic use (e.g., some national parks in Egypt). True heritage assets, like museums, artworks, archives, archaeological sites, and monuments, should be differentiated.

Others consider heritage assets "public goods" [20, 21]. However, "public goods" is also broad, encompassing most public sector assets like highways and archaeological sites. Highways serve daily life and economic purposes, unlike heritage assets primarily focused on knowledge and culture (e.g., artworks, historical archives). Moreover, roads can be replaced or altered.

3.2.2. Time-Based Classification

Some consider the age of an asset to determine its heritage status. The Egyptian government, for instance, designates any public asset over 100 years old as heritage under Law No. 117 of 1983 (amended by Law No. 3 of 2010). The law defines heritage assets as:

- Products of Egyptian civilization or successive civilizations, or creations of art, science, literature, or religion within Egyptian territory, dating back to prehistoric times and spanning historical periods (minimum 100 years).
- Possessing archaeological, artistic, or historical significance related to Egyptian or other civilizations on Egyptian territory.
- Created on Egyptian territory, including historical connections, and mummies of human races and their contemporaries, considered antiquities under the law's provisions.

These conditions effectively establish heritage assets as a distinct category, separate from general property or equipment.

3.2.3. Iraqi Classification

Iraq's Antiquities & Heritage Law No. 55 of 2002 defines "antiquities" in Article VII as: "movable and immovable property built, made, carved, produced, written, or painted by man, at least 200 years old, as well as human and animal skeletons and plant remains."

Al-Janabi [22] identifies two academic approaches to defining antiquities:

1. No Time Limit: The legislator selects specific items as antiquities based on prepared lists. This approach considers property built 200 years ago and existing movables as antiquities. However, it lacks flexibility and has been criticized. The Egyptian legislator allows exceptions to this principle, considering any movable or immovable property with historical, national, religious, or artistic value as antiquities if the state has a national interest in preserving it, regardless of the 100-year time limit.
2. Time-Based Definition: This approach requires a specific age for an item to be considered an antiquity. According to Iraq's current Antiquities & Heritage Law, the object must be at least 200 years old to qualify as an antiquity. Anything younger falls under the broader category of "heritage." This approach, according to Al-Janabi [22], effectively determines antiquities and extends beyond human-made objects to include human and animal skeletons and plant remains.

3.2.4. Classifications from Various Sources

- **Wikipedia [23]:**
 1. **Movable Finds:** Human-made materials that can be transported without changing their appearance. Examples include stone tools (arrowheads), pots, ornaments (beads), clay tablets, and written records (from literate communities).
 2. **Immovable Finds:** Structures built by ancient people, such as houses, pits, cemeteries, and irrigation canals. Unlike tools, these fixed finds cannot be separated from their surroundings without changing their form.
 3. **Natural Finds:** Natural materials found with equipment and fixed finds, revealing how people interacted with their environment. Examples include seeds and animal bones.
 4. **Archaeological Site:** The location containing archaeological materials. Studying the relationship between manufactured equipment, finds (both movable and immovable), and natural finds at a site helps understand past human behavior. For instance, finding stone arrowheads near the bones of extinct buffalo suggests early human groups hunted buffalo in that area.
- **Law No. 55 of 2002 (Iraq) [24]:**
 1. **Heritage Material:** Movable and immovable property less than 200 years old with historical, national, religious, and artistic value, designated by a ministerial decision.
 2. **Historical Site:** A place where a notable historical event occurred, regardless of age.
- **Al-Janabi (2014):**
 1. **Cultural Heritage:** Creative expressions resulting from past and present life. It can be further divided into:
 - **Tangible Cultural Heritage:** Physical objects like monuments, buildings, artworks, artifacts, and paintings. This includes movable items (artifacts) and immovable items (buildings, monuments).
 - **Intangible Cultural Heritage:** Non-physical expressions like music, folk dance, literature, theater, languages, science, and folklore. He defines it as a product of artistic, literary, scientific, historical, and religious value. The Convention for the Safeguarding of the Intangible Cultural Heritage defines it as practices, representations, expressions, knowledge, and skills – as well as the instruments, objects, artifacts, and cultural spaces associated with them – that communities, groups, and nations strive to preserve.
- **World Heritage:** Heritage of exceptional universal value from the cultural or natural heritage listed by UNESCO. All countries should participate in its conservation and care.

3.2.4. Proposed Classification

Based on the characteristics of heritage assets and their alignment with the concept of fixed assets, researchers recommend classifying them as a subcategory of fixed assets titled "Heritage Assets." Different approaches exist for classifying heritage assets. A more effective approach considers their inherent nature, resulting in the following categories:

- **Immovable Heritage Assets:** These assets cannot be separated from their surroundings and include structures built by ancient peoples, such as houses, pits, cemeteries, and irrigation canals.

- **Movable Heritage Assets:** These assets can be separated from their surroundings, transported, and placed in museums. Examples include archeological statues and remains. This category can be further sub-divided based on material composition, such as:

1. Clay Heritage Assets
2. Mineral Heritage Assets
3. Ivory Heritage Assets
4. Wooden Heritage Assets
5. Jewelry Heritage Assets
6. Textile Heritage Assets
7. Glass Heritage Assets
8. Stone Heritage Assets
9. Manuscript Heritage Assets
10. Carving Heritage Assets

Both researchers agree that a standardized classification system for heritage assets is crucial. It will help regulate provisions concerning these assets and ensure uniformity for statistical purposes, particularly at the national level (e.g., Iraq).

4. Accounting Treatments of Heritage Assets

Financial Reporting Standard (FRS) No. 30, titled "Heritage Assets," clarifies that these assets should be recognized as "tangible fixed assets" measured according to FRS No. 15, "Tangible Fixed Assets."

Recognition and Measurement:

- If cost or value information for a heritage asset is available, it should be presented separately from tangible fixed assets in the balance sheet.
- Acquired heritage assets undergoing evaluation should be presented at cost. Valuation changes are recognized in the statement of comprehensive income.
- Revaluations can be done using any appropriate method. However, neither standard specifies requirements for external evaluation processes nor the minimum period between revaluations.

Recent Acquisitions and Missing Cost Information:

- Heritage assets with recent acquisitions have available cost information.
- If cost information is unavailable, the asset shouldn't be recognized.

Depreciation and Impairment:

- Heritage assets with indefinite lives are not depreciated.
- FRS No. 11, "Impairment of Fixed Assets and Goodwill," applies if there's evidence of physical deterioration, breakage, or cost uncertainty.

Grant-Received Heritage Assets:

- These assets are recorded in financial statements at no more than their recoverable amount. Estimating heritage asset value can be challenging. Disclose reasons for not estimating and the asset's nature and size.

Summary of Accounting Treatments:

1. Heritage assets are recognized at cost (if available) and shown separately in the balance sheet.
2. Assets without cost information are not recognized.

3. Revaluation changes are reflected in financial statements.
4. Heritage assets are not depreciated.
5. FRS No. 11 applies for deterioration, breakage, or cost uncertainty.

Critique of Current Standards:

Researchers argue that the Accounting Standards Board doesn't address valuing heritage assets discovered through archaeological excavations. Instead, they adopt accounting methods used for tangible fixed assets with obtainable cost information. However, heritage assets differ: their productive life is over, and their value generally increases over time (unlike tangible fixed assets).

5. Proposed Framework: A Suggested Method for Estimating the Value of Heritage Assets

The unique characteristics of heritage assets pose significant challenges in determining their value. These challenges include:

- A. **Limited Comparability:** Their lifespan extends far beyond currently produced items, making market comparisons difficult.
- B. **Cultural Significance:** Their value is deeply tied to a nation's cultural identity, not solely their monetary worth.
- C. **Public Ownership:** They are often public property, further complicating valuation through traditional market approaches.
- D. **Heterogeneity:** Archaeological finds vary greatly in nature, age, and discovery circumstances.

These characteristics make traditional valuation methods impractical:

- A. **Market Price:** Prices of similar assets are challenging to find due to the unique specifications and historical periods of heritage assets.
- B. **Income Capitalization:** Future financial flows from these assets are difficult to predict, and their value transcends purely commercial purposes.
- C. **Cost Method:** Capitalizing excavation and preparation costs may not reflect the true value of the asset.
- D. **Symbolic Value:** While the Iraqi system assigns a symbolic value to heritage assets, this doesn't accurately represent their worth.

Researchers have proposed alternative methods:

- A. **Agreement Method:** This method uses specific procedures to assess heritage assets, including item description, payment mechanism, demographic data collection, and value determination through buyer interest surveys [25].
- B. **Expert Appraisal:** This method relies on professional judgment, but can be susceptible to personal biases. To mitigate this, the US Internal Revenue Service utilizes the "Delphi Method" - seeking consensus from a group of experts. Additionally, "The Art Advisory Group" reviews important artistic grants [26].

Sayce et al. [27] proposed further methods:

- Contingent Valuation and Willingness to Pay
- Cost-Benefit Analysis
- Hedonic Pricing Techniques

These techniques aim to acknowledge both the cultural and economic value of heritage assets. While they can be expensive and have limitations, they are used for valuing rare assets. Sayce et al. [27] also suggested:

- **Net Present Value Analysis:** Discounts future liabilities at an appropriate rate to determine present value.
- **Gap Funding:** Capitalizes grants-in-aid as a surrogate for public sector value.
- **Depreciation Method:** Used by insurance companies, this method calculates value by estimating depreciation and reconstruction costs.

Given the lack of a universally accepted method, the researchers propose the following procedures:

- A. **Valuation Committee:** Establish a committee composed of accounting and auditing academics, archaeological professionals and academics, and members of the Federal Audit Bureau.
- B. **Database Creation:** Conduct research and document the nature and characteristics of heritage assets in a database.

C. Market Research: Consider prices of similar heritage assets sold in private auctions, on specialized websites, and social media platforms.

D. Website for Evaluation: Develop a dedicated website for heritage asset evaluation, presenting draft valuations for various cultural periods and geographical areas to solicit expert opinions from accountants and archaeologists.

Fig. 1 illustrates some websites specializing in the sale of heritage assets.

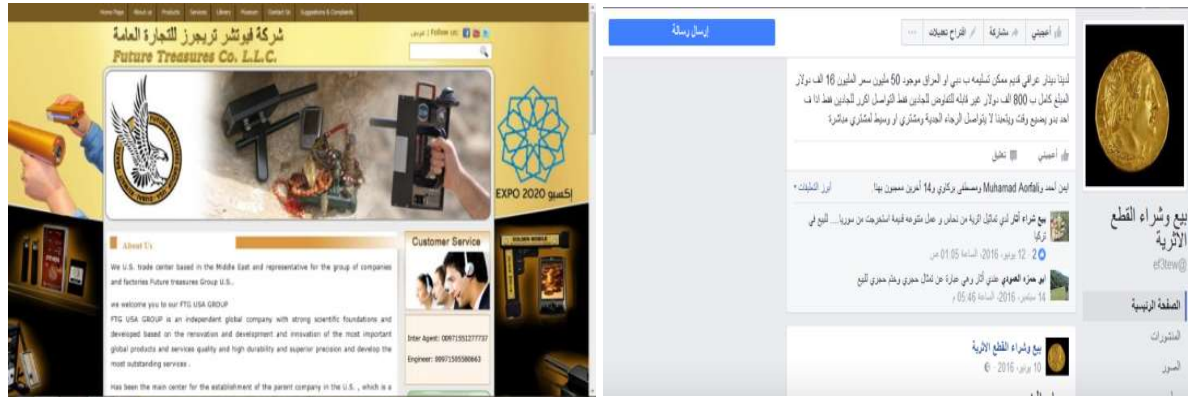


Fig. 1. Websites that specialize in selling heritage assets.

6. Hypotheses Testing: Analysis of Field Study Results

This section discusses the management of the field study, data collection procedures, and the statistical methods used for analysis with the SmartPLS3 software.

The Kurdistan Region of Iraq was chosen for this exploratory study due to its archaeological significance. The region boasts over 4,000 archaeological sites representing various historical periods and civilizations, making it a vital part of Iraqi cultural heritage. Interviews with the director of the Kurdistan Region Antiquities Authority and the director of the Erbil Museum confirmed the absence of an established accounting treatment for heritage assets. Figure 2 depicts the number of archaeological assets discovered in the region, highlighting that the number of identified sites exceeds 4,000.

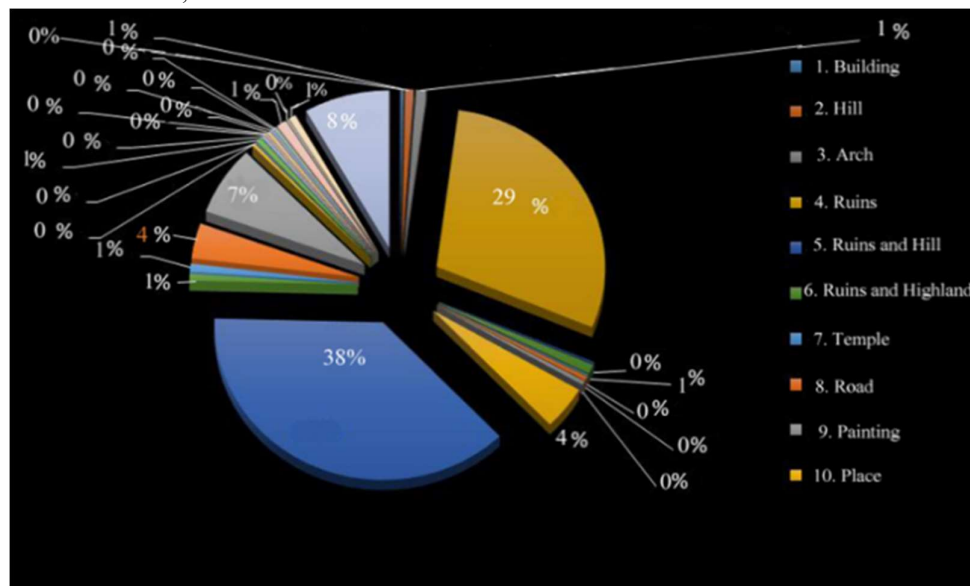


Fig. 2. Types of Heritage Assets in the Kurdistan Regional of Iraq.

The Provincial Antiquities Authority maintains a record for heritage asset control and oversight. This record includes descriptions of the assets' nature and is stored in a computerized database. However, this signifies that the region does not recognize heritage assets from an accounting perspective, and they are not included in financial statements.

A. Field Study Management

The questionnaire development followed these steps:

1. Preparation of an initial questionnaire for data and information collection.
2. Conducting a pilot test of the questionnaire and making necessary adjustments.
3. Distributing the final questionnaire to all members of the study population to collect data.
4. Conducting normality and reliability tests.
5. Performing statistical analysis on the collected data.

B. Symbols Used in Statistical Analysis

The following table illustrates the symbols used in the statistical analysis:

Table 1. The symbols used in the statistical analysis

The meaning of the symbol
(Var.1 – Var.11) X1 The Importance of accounting treatments for heritage assets
(Var.12 - Var15.)X2 The Disclosure Methods
(Var.13 – Var22.) X3 The Importance of measurements and disclosure of heritage assets

C. Results of Measurement Model - Convergent Validity

In hypothesis testing, the null hypothesis typically proposes that there is no significant relationship between variables, while the alternative hypothesis postulates that there is a significant relationship. In this study, composite reliability and average variance extracted (AVE) are considered acceptable if they exceed 0.70 and 50%, respectively, as shown in the following table:

Table 2. Results of Measurements model – convergent validity

Constructs	Items	Loading	AVE	CR
Importance Finding Accounting Treatments	1	0.751	0.711	0.889
	2	0.731		
	3	0.735		
	4	0.789		
	5	0.777		
	6	0.711		
	7	0.725		
	8	0.761		
	9	0.744		
	10	0.733		
	11	0.714		
Disclosure Methods	12	0.719	0.721	0.981
	13	0.789		
	14	0.700		
	15	0.726		
Importance Measurements and Disclosure	16	0.788	0.745	0.977
	17	0.714		
	18	0.736		
	19	0.765		
	20	0.744		
	21	0.766		
	22	0.765		

7. Summary of Research Conclusions and Recommendations

This research investigates the appropriate accounting treatment for heritage assets in the Kurdistan Region of Iraq.

7.1. Key Findings

- Heritage assets share characteristics with fixed tangible assets due to their long lifespan and community ownership.
- The research proposes a classification system for heritage assets, categorizing them as immovable or movable with further subcategories.
- Current accounting standards lack specific guidelines for valuing and accounting for heritage assets.

7.2. Recommendations

- Establish a committee with expertise in accounting, archaeology, and auditing to determine heritage asset values.
- Recognize heritage assets at present value based on research, auction prices, and website data.
- Classify heritage assets as a separate section within fixed tangible assets.
- Record revaluation differences in income or financial statements.
- Develop an electronic database and website for showcasing archaeological sites and findings.
- Encourage professional feedback on valuation estimates and accounting treatments.
- Advocate for the Iraqi Accounting Standards Board to establish a dedicated accounting standard for heritage assets.

Overall, the research emphasizes the need for a specialized accounting approach to recognize and value the unique characteristics of heritage assets.

Appendix

section	Question	Strongly agree	Agree	Total of Agree, strongly agree	indifferent	disagree	Strongly disagree	Total of Disagree, strongly disagree	Moving Average	Variance	standard deviation	Relative weight
1 st	The importance of giving financial value to heritage assets											
1	It is important to give values for heritage assets to clarify the cultural role of the state.	39	49	88	4	2	1	3	3.83	0.83	0.91	0.77
2	Giving values to heritage assets would enhance the state's financial situation	34	47	81	10	4	0	4	4.02	1.02	1.01	0.80

3	Giving values to heritage assets would enhance the financial position of the foundations that own the heritage assets	33	54	87	5	3	0	3	4.15	1.15	1.07	0.83
4	Giving values to heritage assets would keep them from theft.	34	47	81	8	5	1	6	3.99	0.99	0.99	0.80
5	Giving values for heritage assets would provide a basis for imposing fines when they are damaged	38	47	85	5	5	0	5	3.84	0.84	0.92	0.77
6	Giving values to heritage assets would provide a basis for demanding compensation when those responsible for theft are found and inability to restore them	39	45	84	8	2	1	3	3.79	0.79	0.89	0.76
7	Giving values to heritage assets would facilitate the process of obtaining loans for the state and institutions that contain such assets.	38	45	83	5	6	1	7	3.79	0.79	0.89	0.76
Total		583	690	1273	85	54	14	68	3.79	0.79	0.89	0.76
2 nd	The Importance of Accounting Treatments for Heritage Assets											
8	The concept of tangible fixed assets applies to heritage assets	38	45	83	9	1	2	3	3.82	0.82	0.91	0.76
9	Tangible fixed assets should be recognized with the current value.	43	43	86	7	2	0	2	3.62	0.62	0.79	0.72
10	The importance of forming a specialized committee between the archaeologists and accountants with advanced professional cadres for official bodies to set values for heritage assets	35	53	88	2	5	0	5	4.03	1.03	1.02	0.81
11	The comparison method can be used to give values for these assets by searching for sale websites in the Internet in order to reach the approximate value	36	52	88	4	1	2	3	3.98	0.98	0.99	0.80
12	Heritage assets can be classified into: 1.Immovable Heritage Assets:	44	45	89	3	2	1	3	3.58	0.58	0.76	0.72

	The Heritage assets that can't be separated from their surroundings such as houses, pits, cemeteries, irrigation canals, and many other facilities built by ancient peoples. 2.Movable Heritage Assets: The Heritage assets that can be separated from their surroundings, transported and placed in museums such as archeological statues and archaeological remains.											
13	The specificity of heritage assets as they become increasingly valuable over time and the difficulty of determining financial values, requires the development of accounting treatments	41	53	94	1	0	0	0	3.83	0.83	0.91	0.77
14	The fixed assets are recognized with the cost of the heritage assets which we have information about them	42	48	90	5	0	0	0	3.74	0.74	0.86	0.75
15	The heritage assets should not be depreciated because their age is ended since very long time	43	43	86	4	3	2	5	3.57	0.57	0.75	0.71
16	The heritage assets should be presented as a fixed item within the fixed tangible assets in the balance sheet	46	44	90	2	3	0	3	3,49	0.49	0.70	0.70
17	The differences between successive valuations of heritage assets are treated in the financial account	28	65	93	2	0	0	0	4.51	1.51	1.23	0.90
18	estimating the values of heritage assets can be guided by the prices of heritage assets that were sold in galleries or websites and social media	45	45	90	2	3	0	3	3.55	0.55	0.74	0.71
	Total	403	491	894	32	19	5	24	3.79	0.79	0.89	0.76
	Final Total	986	1181	2167	117	73	19	92	3.79	0.79	0.89	0.76

References

- [1] G. Y. Hadi, "A Proposed Framework for Measuring and Disclosing the Heritage Assets," *TANMIYAT AL-RAFIDAIN*, vol. 39, no. 126, pp. 86-110, 2020.
- [2] L. Biondi, F. G. Grandis, and G. Mattei, "Heritage assets in financial reporting: a critical analysis of the IPSASB's consultation paper," *Journal of Public Budgeting, Accounting & Financial Management*, vol. 33, no. 5, pp. 533-551, 2021.

- [3] N. Aversano, J. Christiaens, P. Tartaglia Polcini, and G. Sannino, "Accounting for heritage assets: An analysis of governmental organization comment letters on the IPSAS consultation paper," *International Journal of Public Sector Management*, vol. 33, no. 2/3, pp. 307-322, 2020.
- [4] J. Mardas, "Iraqi Kurdistan's heritage in the face of regional development: state of preservation of archaeological sites and damage assessment—preliminary report," *Polish Archaeology in the Mediterranean*, vol. 1, no. XXVI, pp. 809-826, 2017.
- [5] R. Koliński, "Settlement history of Iraqi Kurdistan: an assessment halfway into the project," *Polish Archaeology in the Mediterranean*, vol. 1, no. XXVI, pp. 579-590, 2017.
- [6] S. Y. Ismael, "Promoting integrated heritage conservation and management in Iraqi Kurdistan region," 2015.
- [7] K. M. Braim, "Managing cultural tourism in a post-conflict region: the Kurdistan Federal Region of Iraq," University of Nottingham, 2018.
- [8] E. J. Laugier, N. Abdullatif, and C. Glatz, "Embedding the remote sensing monitoring of archaeological site damage at the local level: Results from the "Archaeological practice and heritage protection in the Kurdistan Region of Iraq" project," *Plos one*, vol. 17, no. 6, p. e0269796, 2022.
- [9] S. Y. ISMAEL, "Using UAVs in Documenting Cultrual Heritage Sites-A Case Study of Zakho Historic City in Kurdistan Region, Iraq," *Journal of Duhok University*, vol. 24, no. 2, pp. 12-28, 2021.
- [10] E. Anessi-Pessina, J. Caruana, M. Sicilia, and I. Steccolini, "Heritage: the priceless hostage of accrual accounting," *International Journal of Public Sector Management*, vol. 33, no. 2/3, pp. 285-306, 2020.
- [11] S. Ellwood and M. Greenwood, "Accounting for heritage assets: does measuring economic value 'kill the cat'?", *Critical Perspectives on Accounting*, vol. 38, pp. 1-13, 2016.
- [12] "Federal Accounting Standards Advisory Board, Heritage Assets and Stewardship Land," 2005.
- [13] I. F. Education, "United Nations Educational, Scientific, and Cultural Organization, 7 Place du Fontenoy, 75700 Paris (No."
- [14] J. IPSASB, "The conceptual framework for general purpose financial reporting by public sector entities," *International Public Sector Accounting Standards Board, the International Federation of Accountants*, 2014.
- [15] "IVSB (2011) IVS 230-Real property interests."
- [16] "ASB (2009) FRS 30, Heritage assets."
- [17] S. Wild, "Accounting for heritage, cultural and community assets—alternative metrics from a New Zealand Māori educational institution," *Australasian Accounting, Business and Finance Journal*, vol. 7, no. 1, pp. 3-22, 2013.
- [18] A. Lacerra and A. Stafford, "Heritage assets: The UK accounting challenge," in *Proceedings from CIGAR 12th biennial conference*, 2009.
- [19] J. Pallot, "The nature of public assets: a response to Mautz," *Accounting Horizons*, vol. 4, no. 2, p. 79, 1990.
- [20] R. K. Mautz, "Monuments, mistakes and opportunities," *Accounting Horizons*, vol. 2, no. 2, p. 123, 1988.
- [21] A. D. Barton, "Accounting for public heritage facilities—assets or liabilities of the government?," *Accounting, Auditing & Accountability Journal*, vol. 13, no. 2, pp. 219-236, 2000.
- [22] A. S. A.-Z. al-Janabi, "Koran terms between text and speech" Read in the light of the heritage and modern Lesson", *The islamic college university journal*, no. 24, 2014.
- [23] "Wikipedia (2017) Heritage Assets."
- [24] H. A. Al-Khafaji, "Criminal Protection of Antiquities and Heritage, (Study in light of the provisions of the Law of Antiquities and Heritage of Iraq No. 55 of 2002)," *Journal of Al-Heli Investigator of Legal and Political Sciences*, vol. 2, no. 6, 2014.
- [25] P. S., "An examination of measurement for valuating heritage assets using a tourism perspective," *Qualitative Research in Accounting & Management*, vol. 1, no. 2, 2004.
- [26] L. Landriani and M. Pozzoli, *Management and valuation of heritage assets: a comparative analysis between Italy and USA*. Springer Science & Business Media, 2013.
- [27] S. Sayce, P. Britton, A. Morris, A. Sundberg, and D. Watkins, "Valuing heritage assets: final report of a research project examining the case for the valuation of heritage assets," 2009.