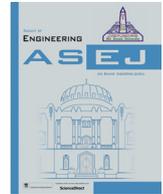




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Towards cultural sustainability: The potency of 'The Thousand and One Nights' in reviving the imageability of Baghdad city

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ABSTRACT

Folktales are increasingly recognized as potent enablers in evoking the 'genius loci' of cities and sustaining their cultural identity. 'The Thousand and One Nights' represents the most remarkable and memorable cross-cultural folktales, related to the Middle Eastern region in general, and the city of Baghdad in particular. Very limited research has been conducted on its impact on architecture and urban development. The current article aims to develop a conceptual framework for the notion of 'imageability', by which to explore the spatial characteristics and the physical and spiritual attributes of the depicted architecture and urban spaces of selected tales. Based on a conducted narrative-analysis approach, the article introduces an innovative theoretical-driven method to folktale interpretation and visualization. This method provides a new perspective in highlighting the perceptual and cognitive implications of the tales in defining the structure, identity and meaning of the urban context, thereby accentuating their potential role as ever-lasting resources that can revive the imageability of Baghdad city, maintain its essence, and sustain its cultural identity.

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1. Introduction

Culture is defined as the set of beliefs, knowledge, values, attitudes and skills, that characterize a particular group of people in a certain place, and are passed along to successive generations [1]. UNESCO links culture to sustainable development "Culture is who we are and what shapes our identity. Placing culture at the heart of development policies is the only way to ensure a human-centered, inclusive, equitable and sustainable development" [2].

Cultural heritage is divided into tangible and intangible heritage; the former refers to the physical artifacts such as art products, buildings, monuments, tools and technology, while the latter refers to the non-physical legacy such as the acquired knowledge, skills, symbols and customs [1] According to the UNESCO 'Convention for the Safeguarding of the Intangible Cultural Heritage' in 2003, the term culture is given a broader implication "cul-

ture in its larger sense can be considered as the totality of spiritual and material, intellectual and unique emotional elements that characterize a society or a social group. This includes not only the arts and letters, but also lifestyle, fundamental human rights, value systems, traditions and beliefs" [3]. The definition of the intangible heritage is further extended as the passed-down cognitive constructs and conceptions, resulting from the communal patterns of interactions and behaviors that are acquired by socialization of communities, as well as the objects and cultural spaces associated therewith [3]. The UNESCO Convention emphasized the significant role of the intangible heritage as a main promoter of sustainable development. Accordingly, heritage conservation is considered as a core to protecting identity in its preservation of the past for future generations [4].

Sustainability is defined as the "ability to sustain or continue" [5]. Culture, originally incorporated within the social pillar of the three key pillars of sustainability (environmental, economic and social), has been designated as a separate self-standing pillar: the fourth pillar of sustainability [1]. That results from the increasing importance of culture and its potential power over communities, as well as its immense impact as a driver of the social, environmental, and economic aspects of sustainable development. Hence, culture has been placed at the heart of sustainable development policies [2,6]. Ghodya et al. recommended that conservation of

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cultural heritage should be implemented parallel to principles of sustainability to ensure positive effects on community, economy and social facets of the city [7]. Different principles and criteria have been proposed concerning cultural sustainability, yet the essence of the notion revolves around two main 'storylines': to protect the cultural heritage and express its identity on the one hand, and to strengthen the cultural vitality and ensure its continuity on the other hand [8]. Stylianou-Lambert et al. developed a framework that identifies the 'parameters of cultural sustainability' which includes distinct dichotomies: Memory/Identity, Cultural diversity/Intercultural dialogue, Cultural skills/Artistic vitality [9]. Heritage has been constantly reused as sustainable cultural evidences that deliver a straightforward connection to the past, evoke emotional responses, and motivate 'empathy'; thereby sustaining the sense of belonging to place [4,10].

Folktales, which are classified as an essential component of the intangible cultural heritage of any society, play an important role in cultural sustainability [11]. Folktales represent the traditional culture of a nation or a region and include a wide range of narratives. They are essential in the understanding of history, culture, society and tradition, and enable people to improve their awareness about themselves and their identity [11,12]. Findlay (2014), argues that folktales are commonly designated as characteristically timeless tales forming an archive of spiritual messages that pass down the cultural history of a place to successive generations [13]. Rivero Moreno considers folktales as significant resources for revealing data about populations of the past and their social history, and contributing in powerfully characterizing places and their 'genius loci' [14]. Thereby, they emerge as a tool for establishing stronger, more cohesive, and rooted in place urban communities based on the collective narratives they embody and the cultural values and diverse associations they support. Folktales represent a cogent manifestation of the Stylianou-Lambert et al. dichotomies mentioned above [9], whereby they promote a new kind of sustainable development that contributes in providing the communities with a feeling of connection with the past and a strong sense of belongingness and rootedness to place [15].

One of the most memorable and remarkable folktales is *'The Thousand and One Nights'* which represents a collection of tales related to the Middle Eastern region in general, and the city of Baghdad in particular. The tales existed in the Islamic Golden Ages, that witnessed the most powerful culture of the time in the reign of the Abbasid Caliph Harun al-Rashid (763–809), and the splendid city of Baghdad beheld a glorious era of enlightenment, knowledge, wealth and luxury to become the most magnificent and majestic city, as well as the cultural and intellectual heart of the Islamic empire [16]. Since then, 'Baghdad' has been associated with the enchanted land of *'The Thousand and One Nights'*; the land of irresistible charm under the reign of the great king Harun al-Rashid. Baghdad had served as the legendary capital and the icon of identity for the Arab and Muslim cities during the Medieval Islamic culture. Thereby, the name 'Baghdad' has long evoked spectacular images that inspire and fascinate the imagination and creativeness of subsequent generations to enshrine and immortalize it under the canopy of 'utopian and magical city'; this is a metaphor of a city with a special aura [17].

Unfortunately, Baghdad city and its heritage have suffered, in different periods of history and specifically during the past decades, from severe damages in its infrastructure caused by military actions of wars, terrorist attacks, sectarian violence, political unrest, as well as the incidental processes of physical transformations and the consistent pressure for growth and modernization [18]. All these factors have rendered changes in its skyline and have affected the great city's cultural identity and distinct character. Nevertheless, Baghdad and *'The Thousand and One Nights'* stay indivisible, and the image of the 'magical Baghdad' remains

immune to the downturns of time [19], and will probably persevere to capture the attention and imagination of successive generations of artists, poets, and writers all over the world.

The *Thousand and One Nights* had a remarkable impact on the world's literature, music, cinema, poetry, philosophy, art, etc. Very limited research has been conducted on its impact on architecture and urban development. The current paper aims to explore, through a narrative-analysis approach, the depicted architecture and urban spaces throughout the tales, and highlight the perceptual and cognitive implications of Baghdad's cultural heritage, to finally provide a new perspective of the indigenous folktales as ever-lasting resources, that can evoke the spirit of the fascinating city, revive its imageability, and sustain its cultural identity.

The research is conducted to find answers to the following questions:

- What is the concept of 'imageability'? What are the main elements that constitute the concept?
- How does *'The Thousand and One Nights'* relate to Baghdad city?
- How does *'The Thousand and One Nights'* relate to the concept of 'imageability'?
- What are the potentials of *'The Thousand and One Nights'* to revive the 'imageability' of Baghdad city and sustain its cultural identity?

In the following section, the research conducts a literature review with the aim of building a comprehensive theoretical framework for the concept of 'imageability', extending Kevin Lynch's inference of 'meaning' by the integration of the notion 'genius loci', or the spirit of place to provide a more holistic perspective on the concept.

2. Theoretical framework

2.1. The concept of imageability

'Imageability' is a concept related to architecture and urban design. It is defined as the mensuration of how easily a physical environment or a setting can invoke clear cognitive images in the mind of perceivers. The concept focuses on the quality and distinction of the city elements that provoke coherent images, and create legible and memorable places for the city's inhabitants [20]. The term 'imageability' was first introduced in the pioneering work of Kevin Lynch 'The Image of the City, 1960' [21]. In his book, Lynch scrutinizes the mental images of the inhabitants of three American cities (Jersey, Los Angeles and Boston). He argues that any setting has distinct physical elements that people conceive and utilize to orient themselves within the environment and assign meanings to it [21]. Lynch identifies the five main elements that constitute the mental images of any city in the mind of perceivers. These elements are: *paths, edges, districts, nodes, and landmarks*. *Paths* are the most intelligible linear elements in any mental image. People experience a place while walking or moving through streets, walkways, lanes, alleys, etc. *Edges* are also linear elements that constitute boundaries surrounding districts or regions. *Districts* are groups of elements with similar character, and are closely related to each other. *Nodes* are points of intersection of paths or enclosed spaces surrounded by buildings. And finally, *landmarks* are elements with special physical characteristics that are recognized from a distance and represent points of reference in any environment [22,23,24]. Lynch argues that the five elements, with their distinctive forms and spatial relationships, represent the most legible elements in the collective mental maps that work together to enhance the imageability of any environment. Lynch states: "Each individual creates and bears his own image, but there seems to be substantial

agreement on these elements among members of the same group” [21]. The theory acquired a great interest and acceptance as it proved compatible with the ‘Gestalt theory’ of perception developed by the German psychologists (Wertheimer, Koffka and Kohler) in the 1920s. The core concept of the theory is the emphasis on ‘wholes’ not ‘parts’, or what is known as ‘pattern perception’ [25]. The Gestaltists developed the ‘Gestalt laws’ by which sensory information is organized in human brains in structures or ‘entities’ by default. These laws reveal how people perceive the world around them, and are categorized as follows: law of continuity, law of proximity, law of similarity, law of closure, and law of figure-ground [26]. The Gestalt laws of perception act as a viable and powerful tool in urban design, as they enhance the relation between geometry and meaning in the art of creating good city form [27]. In accordance with Lynch’s ‘imageability’, the paths and edges are ‘elements of continuity’, while the districts exemplify the laws of ‘proximity and similarity’, the nodes manifest the law of ‘closure’, and the landmarks express the law of ‘figure-ground’ [28,29]. The compliance of Lynch’s concept of ‘imageability’ with the ‘Gestalt theory’ has rendered it widely established among theorists and practitioners [30]. **Table 1**.

Lynch argues that any imageable environment should be based on three essential components: *structure, identity and meaning* [21]. *Structure* refers to the basic elements of environment and their spatial relationships, *identity* signifies the noticeable characteristics of elements, and *meaning* deals with their symbolic connotations [21]. Elements of ‘imageability’ provide perceptual and cognitive implications for the first two components (structure and identity) that are reflected in physical (spatial and figurative) attributes. The first four elements shown in **Table 1** (paths, edges, districts, nodes) that comply with the Gestalt laws (continuity, similarity, proximity, closure), reflect spatial attributes. The fifth element (landmarks) that complies with the Gestalt law (figure-ground), reflects figurative or appearance attributes [29]. Despite the tremendous impact of Lynch’s theory of ‘imageability’ on architecture, urban design, and environmental psychology, the theory and its application in the related researches focus mainly on the first two components (structure and identity), with limited reference to the third component (meaning) and its important role in evoking collective and memorable images [24]. Theorists in the field of environmental psychology assert that the image of any city is a result of an intricate interrelation of two imageable aspects: the physical and the spiritual [31]. The former aspect has been addressed in Lynch’s theory, while the latter remained inadequately developed. Silva (2019) highlights the significant role of the meaning aspect in strengthening the shared memories of a city, thereby promoting its ‘imageability’ [20]. The notion of ‘genius loci’ best clarifies this aspect.

Table 1
The correlation between Imageability elements and the Gestalt laws [Authors].

| Imageability elements | Gestalt laws | Attributes |
|-----------------------|-------------------|--|
| Paths | Law of Continuity | Readiness to be perceived as a group of elements that goes in a specific direction |
| Edges | Law of Continuity | |
| Districts | Law of Similarity | Readiness to be perceived as a group of elements with comparable qualities |
| | Law of Proximity | Readiness to be perceived as a group of elements located near each other |
| Nodes | Law of Closure | Readiness to be perceived as a surrounded whole or a focal point for connectivity |
| Landmarks | Figure-ground Law | Readiness to be distinguished from the surrounded ground by qualities of size, shape, color, texture, motion, etc. |

2.2. The notion of ‘genius loci’

The term ‘Genius loci’ is derived from the classical Roman mythology meaning the guardian deity of a place [32]. In the modern use, the term expresses the idea of ‘spirit of place’, or the genetic footprint of a place, as well as “*the meanings which are gathered by a space*” [33]. Norberg-Schulz, in his pioneering book ‘*Genius Loci: Towards a Phenomenology of Architecture*, 1979’, argues that architecture has to evoke the *genius loci*, through creating meaningful places with distinctive atmospheres that help people dwell poetically and in harmony with the surrounding environment [34]. The concept falls within the philosophy of ‘architectural phenomenology’, that describes it as the intangible quality of the corporeal place, perceived mainly in a spiritual way [35]. Porada in his article “*Virtual genius loci, or the Urban Genius of the Lieu*” (1997), accentuates the notion of ‘genius loci’ as a place where the gods were situated. He describes the place as mythic, fabled and magic, highlighting the role of the supernatural in shaping it, “*one should not think of a myth as a false, fantasy representation, or a fraud. It has a deeper relation to culture*” [36]. The notion can express a secular and urban distinctive character –developed by culture- which conveys the quality of place, or the “*Lieu’s*” quality, “*places obtain their essence from the ‘lieu’ and not from the space*” [36]. Bell introduced the term ‘*Ghosts of Place*’, referring to the sense of the presence of supernatural and mystical immaterial beings (such as angels, spirits, genies) with materialistic abilities (such as magic or powers) that haunt the places of our lives, promoting a sense of ‘social aliveness’. He argues that these powers are inexplicable by scientific understanding, but can be conceived by myths and folklore, contributing to the specificity and particularity of places [37].

Thereby, each city has a unique *genius loci*, or a specific spirit that is revealed beyond its built environment. Norberg-Schulz states “*While space indicates the three-dimensional organization that makes up the place, the ‘character’ denotes the general ‘atmosphere’, that represents the most relevant property of a given place*” [34]. Therefore we can define a place as a concrete entity with a multifaceted character that is deep-rooted in the cultural, geographical, historical, architectural, social and economic bases. The interplay of these dimensions determines the sense of authenticity and continuity of a specific location, as well as the singularity and uniqueness that distinguish a place from another [38]. Karaman argues that the *genius loci* that renders each place as a unique entity is developed by how ‘culture’ assigns associative and symbolic meanings to its environment, as each place possesses a powerful existential meaning that belongs to a common culture, and evokes nostalgic and emotional reactions [39]. The spirit of place is not limited to the built environment in towns and cities, but also to the places of ‘natural landscapes and topography’ where the rivers, lakes, mountains, hills, valleys, etc. exemplify unique places of significance that arouse specific meanings [33]. Vecco argues: “*Places are cultural subjects, they speak about the long process of ‘anthropisation’ through the landscape, they give back/return identity, memory, language, material cultures, symbolic and affective messages*” [33]. Accordingly, we can understand a place as an ecosystem that regenerates itself permanently in time and space, maintaining its resilience as well as its evolution and development. This corresponds with the notion of the ‘Zeitgeist’, that is derived from the German philosophy, denoting ‘the spirit of the times’ [40]. Each era develops its unique spirit that reflects the cultural, moral, and intellectual climate of a particular epoch. Hence, ‘zeitgeist’ plays an important role in identifying cultural patterns in a specific time-period [40]. Mannheim reveals a sociological perspective concerning the term ‘zeitgeist’ connecting it with the notion of ‘generations’, “*If a zeitgeist can extend beyond a generation, a generation can also extend beyond a zeitgeist*” [41]. In other words, ‘zeit-

geist' can overlap in a way or another. As the regenerated place acquires new meanings by time, its authenticity and resilience are further reinforced. Thereby, the spirit of place 'genius loci' can develop powerful associations with the spirit of time 'zeitgeist' in creating meaningful practices of place-making.

At present, the increasing processes of modernization inspired by the concepts of industrialization and globalization, has led to a broad phenomenon namely 'alienation', or the feeling of 'placelessness', that is caused by the dehumanization of the urban context [42]. In general, people are emotionally attracted to places that reflect their cultural heritage and its associations. According to Relph in his book "*Place and Placelessness*", a deep human need exists for association with significant places. If this need is ignored, then the forces of placelessness will remain unchallenged [43,44]. Abusaada and Elshater emphasized the role of the 'spiritual dimension' in placemaking and the generation of city affective atmospheres, enhancing the people's retrieval of the values inherent in their memory towards the surroundings, thereby developing the 'spirit of place' and a strong sense of belongingness [45]. This has called for attempts to evoke new dialogues with the "genius loci", through the exploration of the cultural heritage of a place that can create urban identity and fulfill the function of providing positive self-evaluation for residents, as well as generating a sense of fundamental uniqueness [46].

Among the creative and innovative attempts of integrating interests of the local community in intangible cultural heritage preservation, is the revival of the memories of the indigenous folktales of each community.

2.3. Conceptual framework

As previously mentioned, the concept of imageability is based on three main components: structure, identity and meaning. The first two components (structure and identity) are identified in Lynch's theory by the five distinctive elements (paths, edges, landmarks, districts and nodes), that reveal the physical and spatial attributes of an environment. The third component (meaning) is best expressed through the notion of 'genius loci', and represents the spiritual attributes of a specific place characterized by three main elements (the supernatural, associative and symbolic meanings, landscape and topography).

Fig. 1 illustrates the conceptual framework that will be utilized to explore *The Thousand and One Nights's* architecture and urban spaces, based on the concept of imageability and the notion of 'genius loci'.

3. The 1001 nights: Implications in architecture and art in Baghdad city

The Thousand and One Nights, better known in the west as *The Arabian Nights*, is one of the most remarkable and memorable pieces of folklore of the Arabic culture. This work represents a collection of Middle Eastern folk tales drawn from the cultural and folkloric traditions, in particular from the Mesopotamian region (the modern Iraq now), Egypt, Syria, as well as elements drawn from Persia, Turkey, India [47]. That explains the existence of different versions of the *Thousand and One Nights* throughout the world in general, and the Arab region in particular. The tales have been accumulated over the course of several centuries. The first manuscript dates back to the ninth century in Baghdad, followed by the Syrian and Egyptian versions. In the 18th century, the text was translated into different languages of the Western world [48].

The Thousand and One Nights reflects an example of multi-layered endless stories, commonly referred to as an 'embedded narrative', or a story within a story. The frame story constitutes a

premise that articulates around King Shahryar and his wife Scheherazade (the storyteller). King Shahryar, who has suffered from his first wife's betrayal, kills her and executes all of his successive brides in the first night of their marriage before dawn, as he doubts their future fidelity and faithfulness to him. In order to evade the same fate, his new bride Scheherazade, with her calm wisdom, decides to tell him a dramatic story in the first night of their marriage extending it to dawn, and stopping at an exciting moment (cliffhanger), so that the enthralled King may let her live to complete the story the following night. That goes on for a thousand and one nights until, eventually, the King grows to love her and abandons his original plan [48]. The stories are drawn from the shared culture of the region, combining the mythical and the real (historical), and focusing on many ideas and morals such as fidelity, forgiveness, love, justice, freedom, equality, as well as providing a critical analysis of cultural values, symbols, icons, and metaphors [16]. The tales depict legendary characters and places, which are often intermixed with genuine people and geography. One of the main real leading characters in the tales is Harun al-Rashid, the famous Abbasid Caliph of Baghdad (AD 763–809) [17]. His reign represents the Islamic Golden Age, where Baghdad has flourished as a splendid city of knowledge, culture, prosperity and power. Other prominent figures of the tales are the famous poet Abu-Nuwas, and the minister Jaafar al-Barmaki, who both appeared as companions to the Caliph in many stories [16]. The stories (the real and the fictitious) reveal a phenomenal, legendary, and romanticized depiction of the Caliph Harun and his court, as his reign had attained unprecedented levels of luxury and power. That is what strongly relates *The Thousand and One Nights* to the city of Baghdad in particular, the capital of the great Abbasid Empire [16].

Some of the most famous and well known stories to people around the world are '*Aladdin and the Wonderful Lamp*', '*Ali Baba and the Forty Thieves*', '*The Seven Voyages of Sindbad the Sailor*', and other stories. The *Arabian Nights* had a remarkable and immense impact on the world's literature, music, philosophy, cinema, theatre, poetry, painting and art. An example is the famed '*Scheherazade*' symphonic suite composed by Nikolai Rimsky-Korsakov in 1888, based on the 1001 nights, and created to produce a sense of the Orient fantasy narratives [49]. *The Thousand and One Nights's* influence continues until our present day, and represents one of the greatest contributions of the Arabic, Middle Eastern, and Islamic culture to the Western art and literature [48], as well as an ongoing inspiration to writers, artists, film and game producers, in their worlds of thought and imagination.

In the early decades of the twentieth century, Baghdad's renown in the United States was deeply embedded in *The Thousand and One Nights* tales which were very popular among people, especially the youth, and inspired many novelists, artists, film producers and musicians to evoke the spirit of the fascinating Mesopotamian land; the land of magic and dreams. A famous elaborate example is the American musical fantasy film '*Aladdin*', produced by Walt Disney in 1992, based on the Arabic folklore of the same name [50]. Diverse characters from the tales became icons in the Western culture, just like Ali Baba, Aladdin and Sindbad. Furthermore, elements of the tales' mythology became prevalent in modern fantasy, such as magic lamps, genies and magic carpets [51,52].

Frank Lloyd Wright, America's most famous architect of the twentieth century, had been overwhelmed by the romance of the East, and by the fabulous city 'Baghdad' that had still existed in the collective memory of the West [53]. In 1957, the Iraqi Development Board invited Wright, among other international architects of Modernism, to participate in building Baghdad's new projects [54]. The principal building commissioned to Wright was the 'Opera House'. His work had engaged the city's legacy and culture with

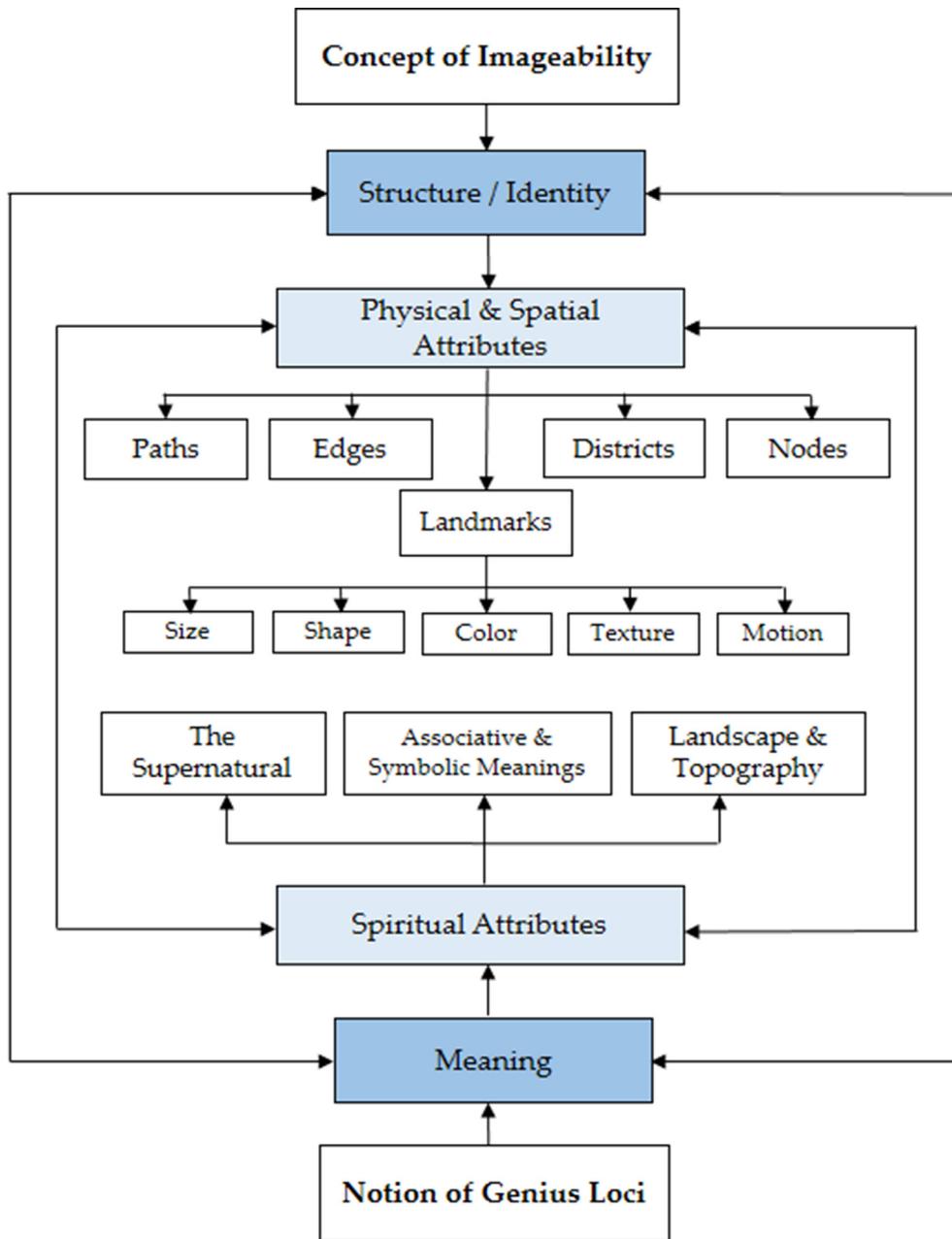


Fig. 1. Conceptual framework for mapping intangible cultural heritage based on concepts of Imageability and Genius Loci [Authors].

his creative mind and influential ideas to evoke the cultural, historical and symbolic mythology of the city of Baghdad and the Mesopotamian civilization [55,56]. The roof of the Opera is in the form of an Arabian tent supported by a central pillar, and on the upper part of the tent stands a sculpture of the popular folktale 'Aladdin and the Wonderful Lamp' [55,57], Fig. 2. Despite the fact that Wright's projects have never been executed due to the Iraqi political events that took place after 1958 revolution, yet his designs represent the first architectural attempt to revive the spiritual and cultural imagery of Baghdad city inspired from *The Thousand and One Nights* tales.

In the field of art, Mohammed Ghani Hikmat the famous Iraqi sculptor and one of the pioneers of the twentieth century artists, has been known for his devotion to the city of Baghdad and his concern for the preservation of Iraqi heritage and its cultural authenticity [19]. He has been deeply inspired by the mythology of *The Thousand and One Nights*, and has contributed

in reflecting the icons and characters of the tales in his spectacular sculptures spread in the urban spaces of the city of Baghdad. A sculptural monument of two statues (King Shahryar and Queen Scheherazade) stands in a park on the Tigris River banks near Abu Nuwas Street. The statue depicts the Queen narrating a story to the King. Another remarkable monument, located in Kahramana Square, depicts a scene of the tale 'Ali Baba and the 40 Thieves', as Marjanah (the slave girl) pours boiling oil into the 40 jars where the thieves are hiding. In 2015, The Kahramana monument was chosen for the World National Heritage in the 70th anniversary of the United Nations [Wiki]. Other monuments depict characters and symbols of *The One Thousand and One Nights*, such as 'The fisherman and the Jinni', 'The Flying Carpet', 'The Magic Lamp', as well as many other cultural monuments and works of art that exist throughout the urban scape of Baghdad city, Fig. 3. 'Baghdad will remain Baghdad' are the words of the celebrated artist and sculptor,

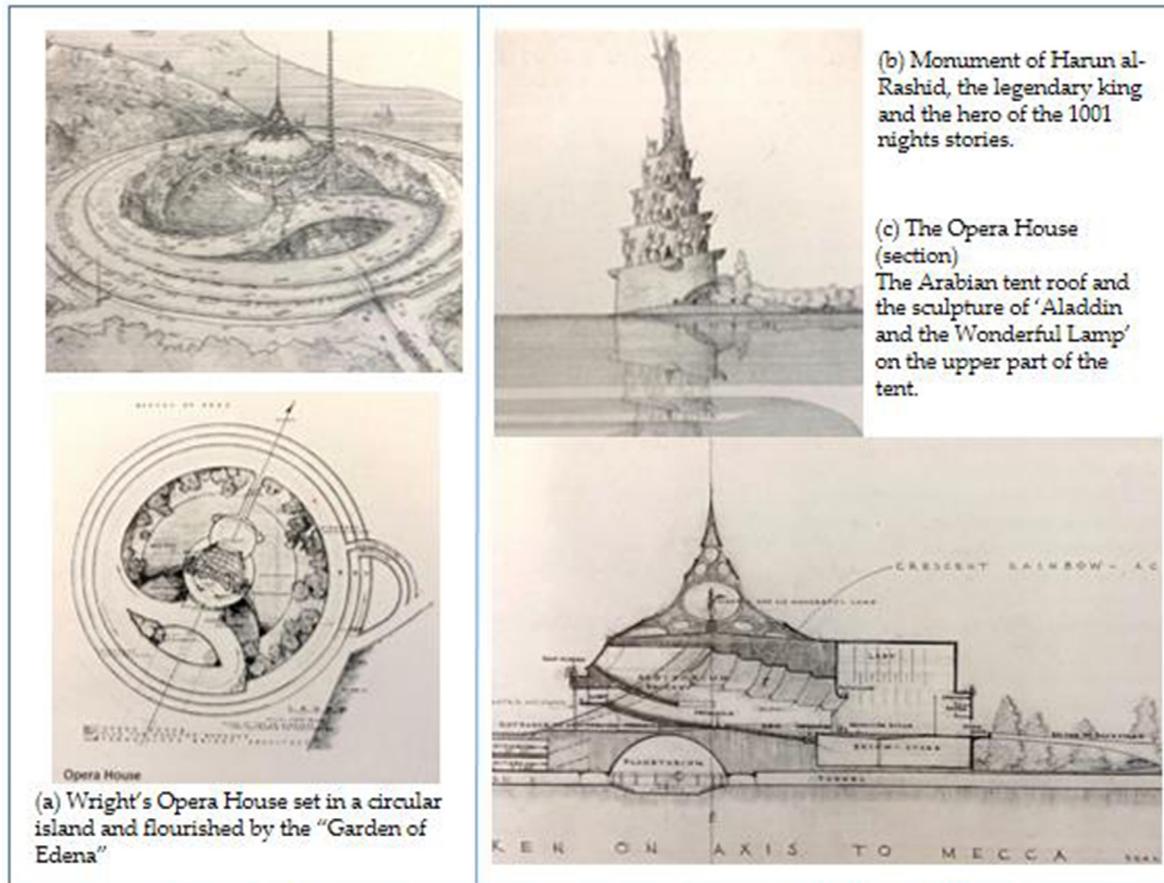


Fig. 2. The opera House', designed by Frank Lloyd Wright in Baghdad (1957–1958), inspired by the 1001 nights [55].

that are interpreted in the numerous and famous landmarks that distinguish Baghdad's cityscapes, and act as a reminder of the great city's fantasy and glory [19].

Wright's unexecuted project, and Hikmat's monuments represent the main architectural and artistic attempts that have tried to evoke the spiritual image of Baghdad city inspired by the *The Thousand and One Nights* tales.

4. Case study methodology

In this section the research aims to conduct a narrative-analysis approach to test the validity of the 'imageability' conceptual framework in extracting the urban scenes and architectural features from stories of the 1001 nights. The following aspects are considered:

- As the *Thousand and One Nights* include hundreds of stories, the research focuses on four selected stories based on the criteria of their familiarity on the one hand, and the materialization of architecture and urban scenes on the other hand. The selected stories are: Aladdin and the wonderful lamp, Ali Baba and the forty thieves, Sindbad the sailor, and The city of brass.
- Data has been collected through a thorough study of the selected tales in various versions of the 1001 nights to review the tales from different perspectives, while the quotations are cited from a specific and reliable reference (*The Thousand Nights and One Night*, by Powys Mathers, Volumes II, III, IV, Taylor & Francis, 2005).
- The narrative-analysis approach of each tale includes four main steps:

Step 1: Specifying the narrative storyline,

Step 2: Analyzing the narrative structure, and identifying its basic cores (where the main events take place). This step is substantiated by selected quotations from the text that best describe the identified cores.

Step 3: Applying the conceptual framework (Fig. 1), where 'structure' is explored by the five elements (path, edge, district, landmark, and node), 'identity' by the physical attributes (size, shape, color, texture, etc.), and finally 'meaning' by the spiritual attributes (the supernatural, symbolic meanings, landscape and topography). The tool used for data extraction is MAXQDA, a qualitative data analysis software that enables the exploration of pdf text documents, with tools to quantify the extracted qualitative data. The text of each tale is analyzed by the authors, and elements of imageability are identified throughout the tale and assigned specific codes in accordance with the conceptual framework. The software helps in determining the most significant and frequent codes and the highest weight score segments, as well as the relation of codes to each other in each tale, and within the four tales, providing a platform for comparison.

Step 4: Visualizing the data in respect to the most significant elements of 'imageability' (frequent codes) in the basic cores, the relation of codes, and the detailed descriptions in texts. The visualized images help to depict the spatial characteristics, as well as the physical and spiritual attributes of the architecture and urban scenes of each tale. Kindly align Step 4 so that its tab is positioned the same as that of the previous steps (Steps 1, 2 and 3).

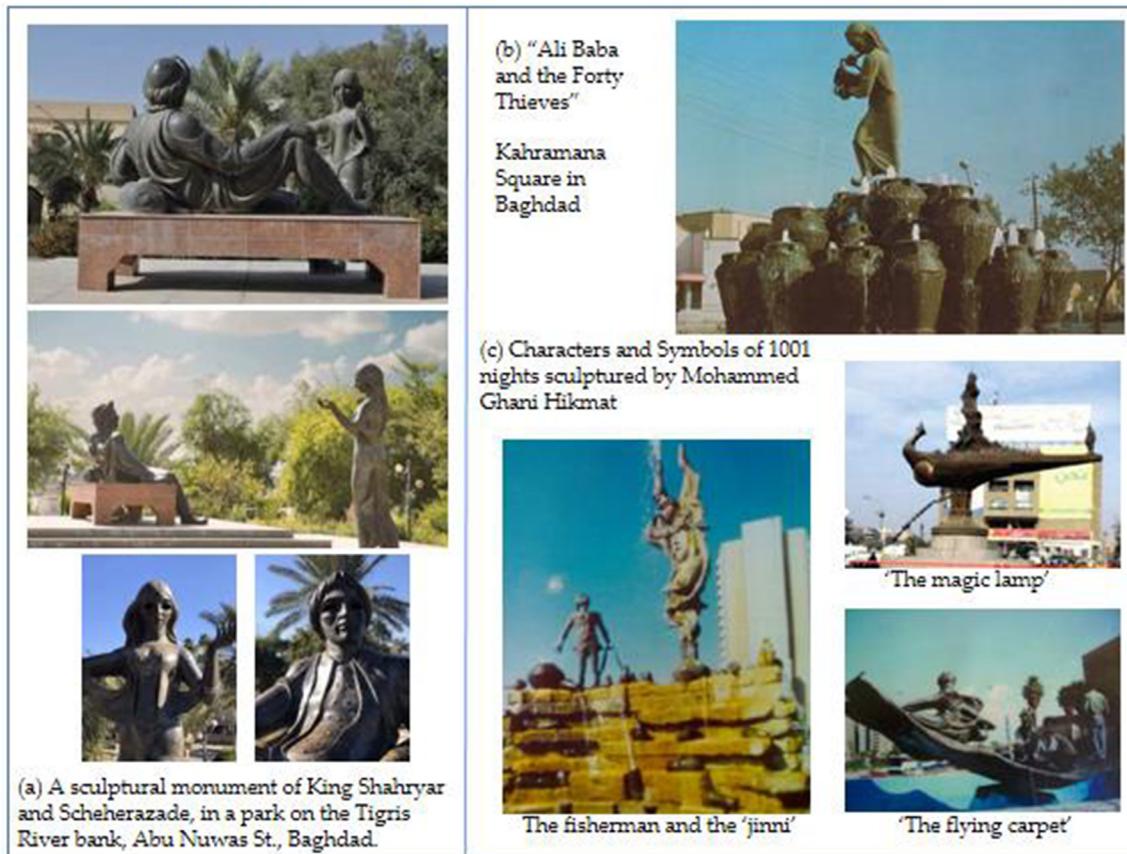


Fig. 3. Monuments of the famous Iraqi sculptor Mohammed Ghani Hikmat depicting characters and symbols of 1001 Nights in the 20th century Baghdad. (photographed by author 1).

To the best of the authors' knowledge, no previous study has been conducted to address the above-mentioned aspects.

4.1. Aladdin and the Wonderful lamp

4.1.1. The narrative storyline:

Aladdin and the Wonderful Lamp is one of the best-known stories of the 1001 Nights tales. In spite of not being part of the original version, it had been passed down by storytellers in the Middle Ages to successive generations, and finally published in the 18th century version by the French writer Antoine Galland [58].

The basic story is about a poor boy named Aladdin, who lives in China (a questionable point, that will be discussed later), who has been deceived by a sorcerer that suddenly appears in his life pretending to be a brother of his late father. He convinces Aladdin's mother that he will set him up as a wealthy merchant, while his real motive was to exploit the boy to retrieve a magical lamp hidden in a deep cave in the mountains. Aladdin gets hold of the lamp but finds himself trapped in the cave. Accidentally, he rubs the magic ring that the sorcerer has lent him and an 'ifrit' (genie) appears and makes his wish come true by returning him to his mother. The magical lamp and ring help Aladdin to become very wealthy and powerful, and despite the clashes and chases between him and the sorcerer, he marries the Sultan's daughter and builds her a far more magnificent palace than her father's. He eventually succeeds to his father-in-law's throne. The story reveals the structure of the city, the four compartments of the underground cave, the details of the architecture of the palaces, and the main city landmarks.

4.1.2. Structural narrative analysis

The main urban scenes in Aladdin's story are focused on the following cores:

(A) The city: surrounded by gardens and edged by mountains, with its main components including the procession street, secondary streets, squares, quarters, mosques, great khans (guest houses), shops, markets, hammams (public baths), palaces, gardens, etc.

"He took him to visit the remarkable buildings of the city, the chief mosques, the markets and the great khans where the caravans put up. Then after the inspection of the notable houses and the gardens, he led him to the khan where he himself lodged and presented him as his nephew to the other merchants with whom he was acquainted" [58, p.382].

"Tomorrow I will continue Aladdin's course of instruction by taking him to visit the gardens beyond the city, where the rich merchants walk together, and have nothing before us except the mountain" [58, p.383].

(B) The cave: located in a mountain outside the city. The entrance is covered by a "marble slab, five cubits square", leading to "twelve marble steps" that ends up with a "red copper double door" [58, p.384]. The sorcerer describes the cave to Aladdin before taking him there:

"The cave is divided into three communicating halls. In the first, you will see four mighty bronze jars filled with liquid gold; in the second, four silver jars filled with gold dust; and in the third, four gold jars filled with coined gold pieces. At the end of the third hall, you will find another door that leads you to a magnificent garden of heavy fruited trees. Walk straight across and you will come to a columned staircase with thirty steps, climbing up to a terrace, where you will be faced

with a niche where a little copper lamp stands upon a pedestal of bronze" [58, p.385].

(C) The Sultan's palace: the story describes the great palace consisting of high gates and towers, with two courtyards separated by three steps and a 'diwan' (large hall). [58, p.400].

(D) Aladdin's palace: Aladdin asks the 'genie' of the lamp to build him a palace worthy of his bride: "I wish you to build me a palace worthy of my bride, on the open ground in front of the King's dwelling. I leave to your good taste and proven knowledge the details of the ornament and the choice of precious materials. But I insist upon one particular: In the middle of the palace you must raise me a vast crystal dome supported by columns of alternate gold and silver, and pierced by ninety nine windows crusted with diamonds. Do not forget to lay out a fair garden with fountains and watercourses, and give breadth to the courtyards ... and a carpet from this palace to the other, so that my wife may pass across without wearying her feet" [58, pp. 417–418].

4.1.3. Application of imageability conceptual framework

Fig. 4 illustrates MAXQDA results in respect to the three components of imageability: structure (path, edge, district, node, landmark), identity (physical attributes), and meaning (spiritual attributes). Fig. 5 represents the visualized images.

4.2. Ali Baba and the forty thieves

4.2.1. The narrative storyline

Ali Baba is a poor man who works as a woodcutter, and Kasim is his elder brother. One day, as Ali Baba is working in the forest, he sees 40 thieves approaching a cave, the mouth of which is sealed by a massive rock. "Open, Sesame!" is the magic phrase that the thieves use to open the cave. When they are gone, Ali Baba utters the words to open the cave and finds a large hall filled with treasures. Ali Baba reveals the secret of the cave to his brother Kasim who goes there, forgets the password, and is trapped in the cave. The thieves find Kasim and kill him. They chase Ali Baba, find his house, and mark the door with a symbol, so that they can identify it the next day they come to kill him. Marjanah, the faithful slave-girl sees them and foils their plan by marking all doors in the neighborhood with the same symbol. Finally, the leader thief succeeds in reaching Ali Baba's house, and pretends to be an oil merchant who is in need for Ali Baba's hospitality to pass the night and upload the 40 jars of oil in the courtyard of his house, while actually the thieves are hiding in the jars, planning to kill him at night. Marjanah, again foils their plan and kills the thieves by pouring boiling oil on them. Marjanah marries Ali Baba's son, and Ali Baba is left as the only one who knows the secret of the cave.

Although some versions of the 1001 nights refer to Ali Baba as a boy from Persia, yet the names of the characters of the story are all Arabic, as well as other Arabic vocabularies such as 'dinar' (monetary unit of Arabic countries), 'hammam' (Arabic bath). There is also a reference to the Iraqi civilization (Babylonian) in describing the treasures in the cave.

4.2.2. Structural narrative analysis

The main architectural and urban scenes are focused on the following cores:

(A) The city: surrounded by woods and hills, a main path penetrates the city, intersected by a secondary path dividing the city into quarters. The main square is located at the center, where a mosque and different shops exist.

(B) The cave: The scene of the thieves arriving at the secret cave, and the rock that covers the mouth of the cave "The forty thieves carried their loads to the foot of a large rock which lay at the bottom of the little hill. Then they set down the bags, and the chief

cried out in the direction of the rock: 'Open, Sesame!' At once the surface of the rock gaped" [59, p.104].

- Ali Baba reaches the rock after the thieves are gone "He found the surface of the rock entirely smooth and without the smallest crack against which he might have pressed the point of a needle" [59, p.105]. Kasim's arrival at the cave "Soon he came to the rock and recognized it by its smooth surface and the great tree which grew above it on the hill", [59, p.110].
- Description of the cave "Instead of seeing some cave of dark horror, he beheld a spacious gallery whose level floor led to a large hall, hollowed in the heart of the rock and well lighted by slits contrived in the roof" [59, p.105]. "Arrived at the entrance of the hall, he beheld, all along the walls and piled from floor to ceiling, a profusion of rich merchandise, with bales of silk and brocade, bags of varied food, great chests filled to the brim with minted silver and silver bars, with golden dinars and bars of gold. And, as if these were not enough, the floor of the cave was heaped with loose gold and precious stones, so that the foot could hardly find a resting place" [59, p.105].

(C) Ali Baba's House: "Marjanah made exactly the same mark on the same part of every door in the street" [59, p.118]. "He took his guest by the hand and led him into the courtyard, calling Marjanah and another slave to help with the unloading of the jars and to feed the horses. The jars had been ranged in good order at the back of the courtyard" [59, p.119]. "He reached the top of the courtyard wall with one prodigious bound, leapt down into the road, and took to his heels" [59, p.121].

4.2.3. Application of imageability conceptual framework

Fig. 6 illustrates MAXQDA results in respect to the three components of imageability: structure (path, edge, district, node, landmark), identity (physical attributes), and meaning (spiritual attributes). Fig. 7 represents the visualized images.

4.3. The tale of Sindbad the sailor

4.3.1. The narrative storyline

The folktale is about a wealthy sailor, named Sindbad, who lives in Baghdad during the reign of the Abbasid Caliph Harun al-Rashid. The frame story depicts a poor porter who, feeling tired, rests on a bench near the sailor's house and is astounded by the joyful and luxurious atmosphere of the house. He complains loudly to Allah about his poverty and low status in life. Sindbad, the sailor, hears him and invites him inside. He tells him how he made his wealth, and narrates his adventures in his seven voyages, featuring magical places and encountering monsters and supernatural phenomena.

4.3.2. Structural narrative analysis

The research will focus on four of the seven voyages of Sindbad (the 1st, 2nd, 3rd and 5th voyages), as the other three voyages (the 4th, 6th & 7th) have limited references to the physical and spiritual attributes of the urban scenes.

(A) Sindbad's house: The first scene of the story depicts Sindbad's house: the gate, a bench, a great garden furnished as gardens of kings, entrance, a wonderful house; a great central hall.

(B) The first voyage: Sindbad sails from Basrah, and reaches what seems to be an island, while in fact is a huge whale that goes deep in the sea when the sailor lights a fire to cook. He is saved and reaches a steep island with climbing plants, and a cave below the earth. The island is ruled by a king who rewards him for saving his horse. He returns back to Basrah, then to Baghdad, with his rich gifts.

"island in the sea with such fair greenery that it appeared like one of the gardens of Eden" [60, p.181]. "That is no island but a gigantic

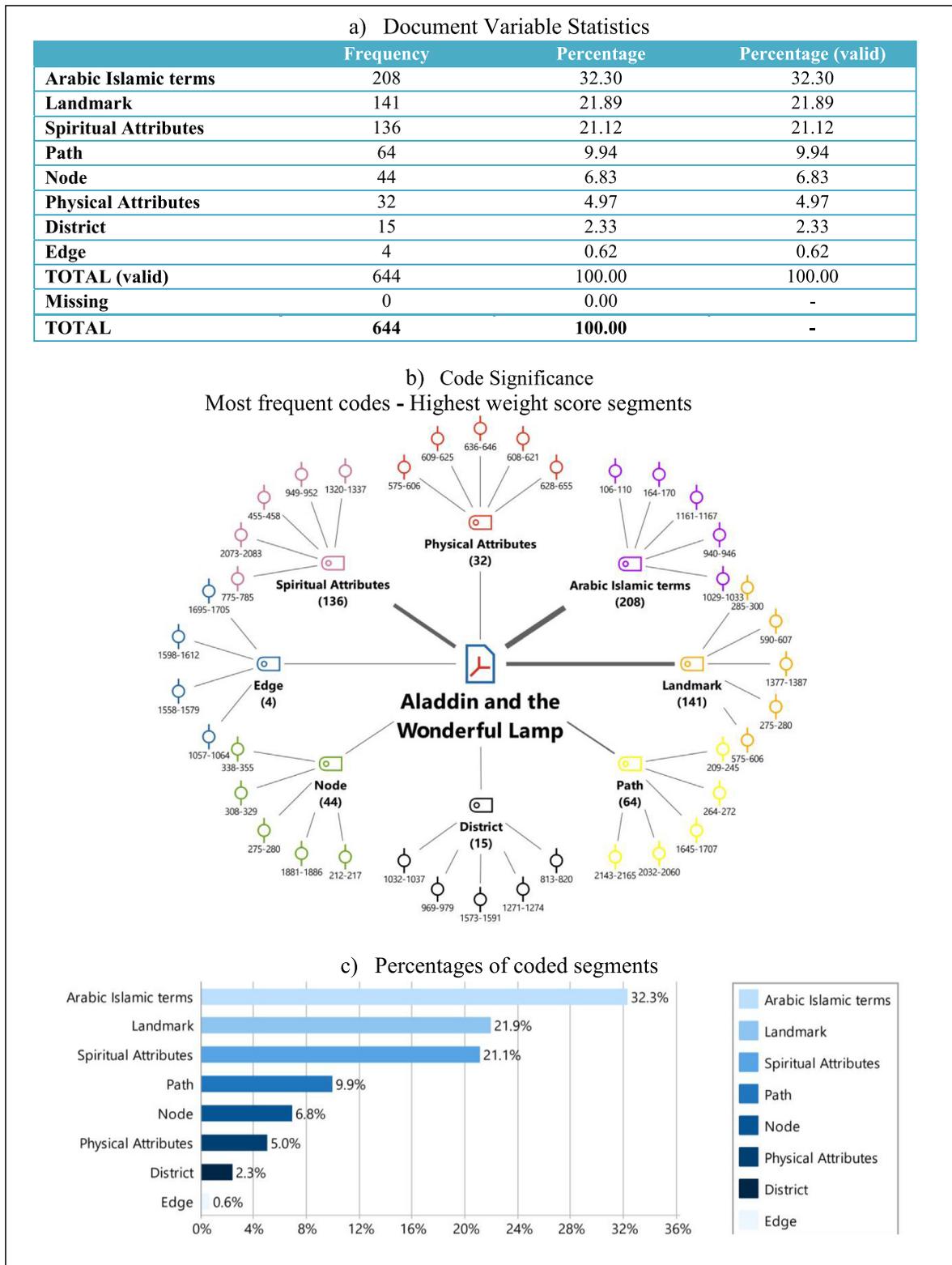


Fig. 4. Aladdin and the wonderful Lamp/Codes' Frequency and Significance.

whale! She has lived in the middle of this sea since time was young, and the trees have grown in the sea sand upon her back" [60, p.181], "and at last wind and wave brought me to the coast of a steep island, covered with climbing plants which fell sheer down the face of the cliffs and trailed in the water. With immense labour of feet and hands I managed to climb up the branches and ropes of these plants, until I reached the top of the cliff"

"led me down into a cave below the earth which contained a great hall" [60, p.183].

(C) **The second voyage:** Sindbad starts another trip to explore seas and cities, and is unintentionally abandoned by his shipmates on a weird island, where there are mythical gigantic roc birds (ruk), that lay huge eggs seeming like domes. Sindbad attaches himself to the leg of the bird while resting on its egg. The bird

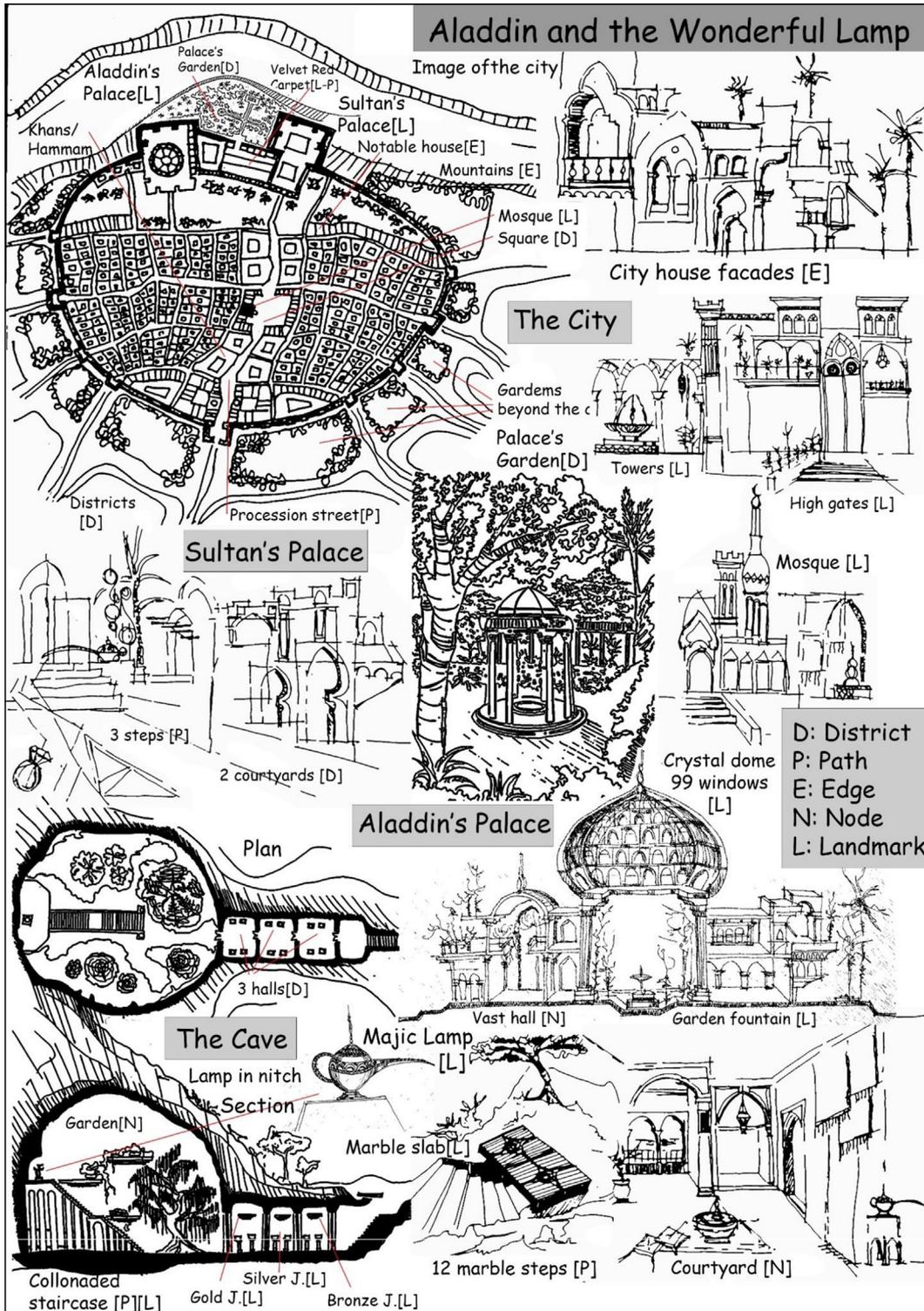


Fig. 5. Aladdin and the Wonderful Lamp/Visualized Images [Authors].

carries him away to another island, with mountains and valleys filled with diamonds. He attaches himself again to the bird's leg after collecting a bag of diamonds, and is carried to another island, where he is rescued by a group of merchants who return him back to Baghdad.

"gigantic dome of shining white, with a broad base and yet taller than it was broad ...it had a diameter of exactly a hundred and fifty paces." [60, p.189], "a bird of terrifying size called the rukh, a bird

which could lift an elephant" [60, p.190], "wide and deep valley, compassed on all sides by mountains, its rocks were all of diamond." [60, p.190-191].

(D) **The third voyage:** Sindbad sails again from Basrah, but to his worse luck he and his shipmates are shipwrecked and thrown on an island of apses. They walk and reach a building and are captured by a huge monster (a cannibal) who begins eating the crew.

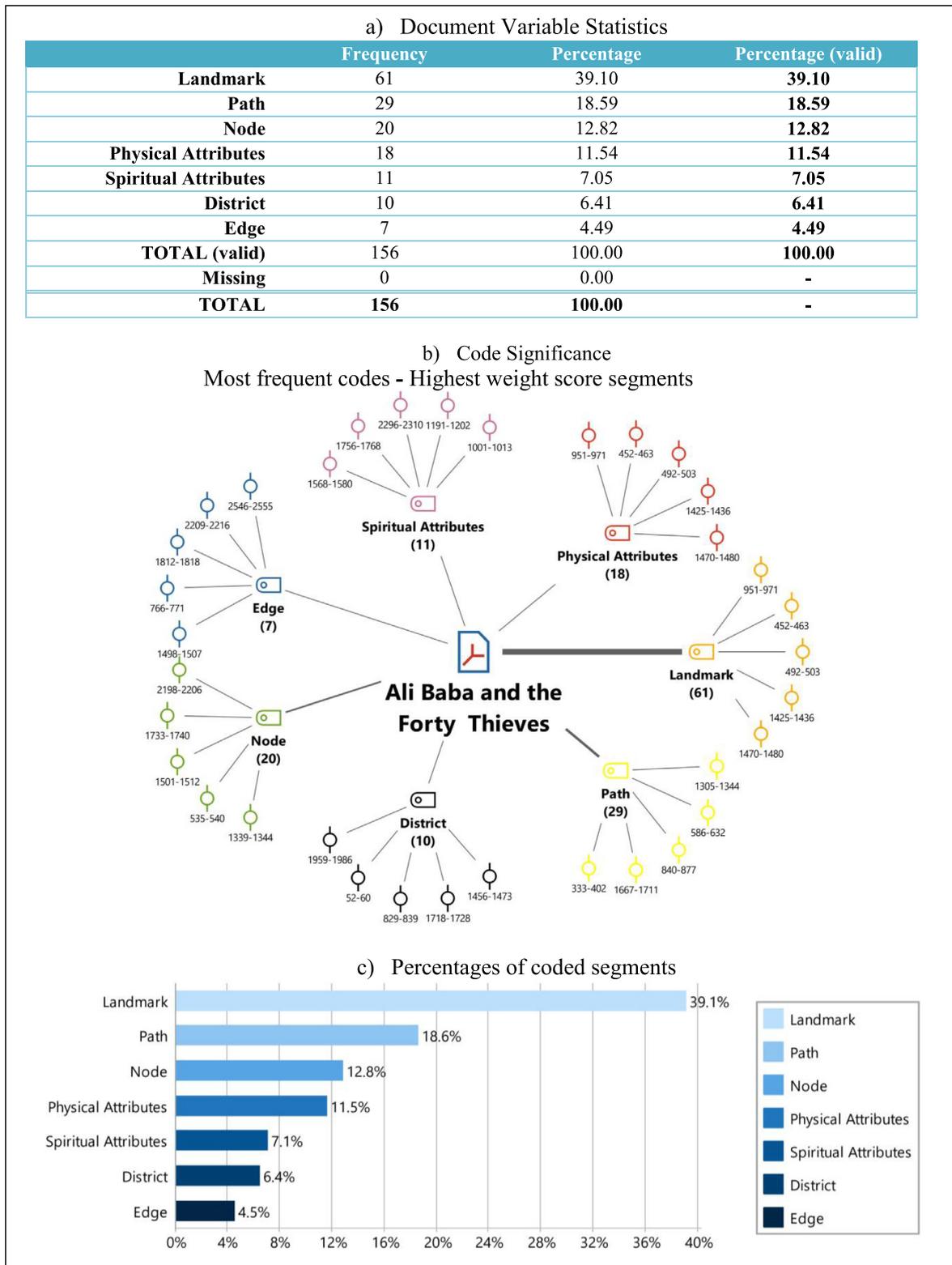


Fig. 6. Ali Baba and the Forty Thieves/Codes' Frequency and Significance.

Sindbad manages to blind the beast while he is asleep and escape to another island, where he retrieves merchandise that was thought to be lost at sea. After a series of adventures, he returns once again to Basrah then Baghdad.

“We walked towards this building and found that it was a tall square palace, surrounded by solid walls in which a double door of

ebony stood open. As no doorkeeper stood there, we entered and found ourselves in a hall as large as most courtyards, furnished only with kitchen utensils of unusual size and great iron spits. The floor was heaped with mounds of bones”, [60, p.196]. “Afterwards we went all over the island, hunting for some more secure shelter than that of the night before, and at last found a tree so high that its upper

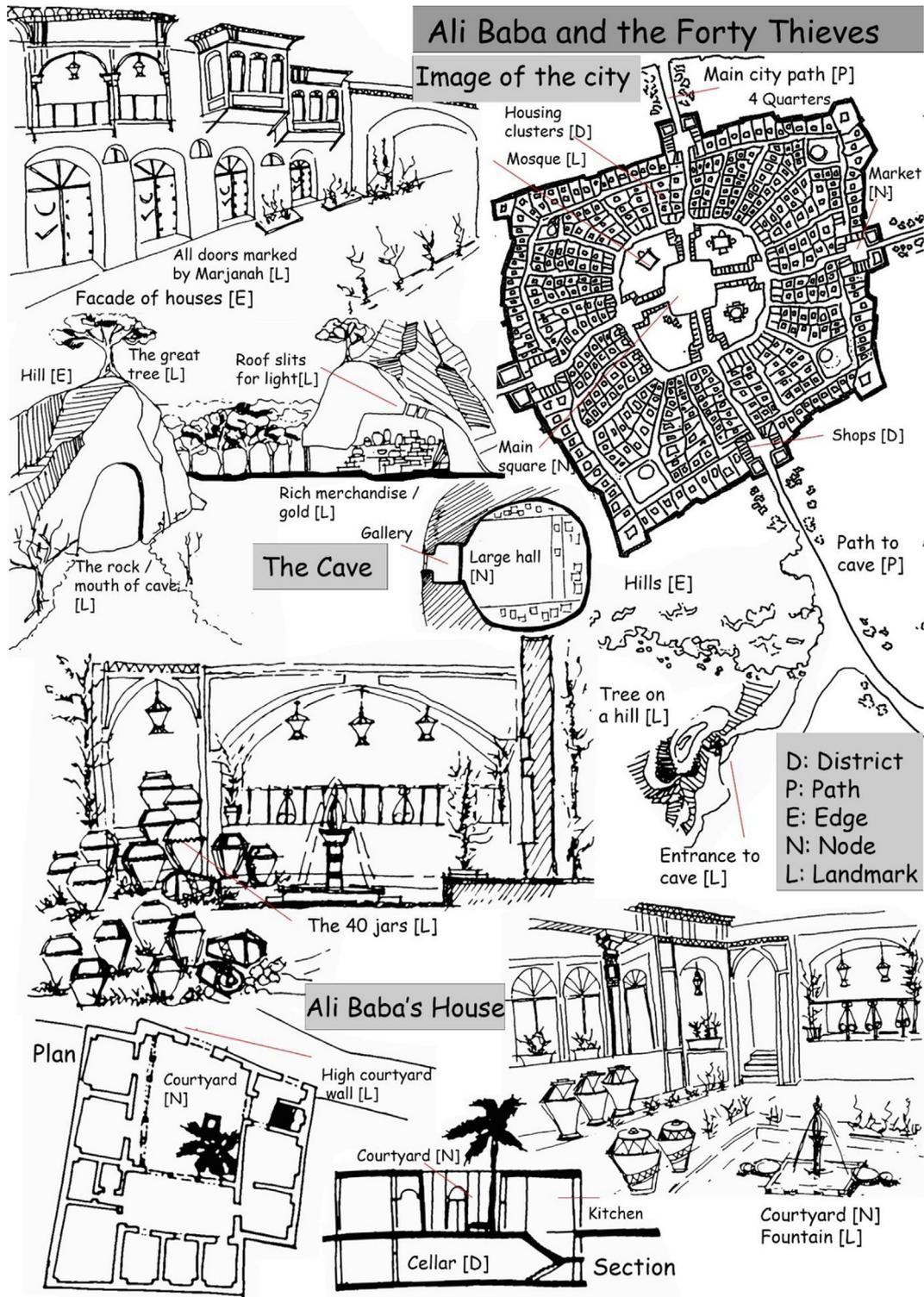


Fig. 7. Ali Baba and the Forty Thieves/Visualized Images [Authors].

branches appeared to be out of reach of any serpent in the world” [60, p.199].

(E) **The fifth voyage:** Sindbad sails again from Basrah, and starts his fifth voyage. He reaches an island where a big dome appears, and he soon recognizes it as an egg of a gigantic roc bird (rukh). As his mates are hungry, they try to destroy the egg, and are soon attacked by two roc birds that smash their ship. Sindbad clings to a piece of wood and reaches an island of paradise, but soon he finds

himself captured by the Old Man of the Sea, who enslaves him for weeks. He manages to escape to the City of the Apes, where he learns how to cope with them, and exploit them to pick fruits and coconuts which he sells, making fortune before he returns home to Baghdad.

“an uninhabited island, whose sole building appeared to be a large white dome. This I recognised as a rukh’s egg, I said nothing about it to my passengers; therefore, when they went ashore, they found no

better employment than to throw great stones at the shell of the egg" [60, p.212]. "garden of Paradise. On all sides before my delighted eyes were trees with golden fruit, cold silver streams, a thousand wings of birds, and close carpets of scented flowers" [60, p.213].

"After walking for some time, we came to a deep valley, covered with trees so tall that no man might essay to climb them. And the branches of these were heavy with apes and a large thick-skinned fruit called cocoanuts", [60, p.216].

4.4.3. Application of imageability conceptual framework

Fig. 8 illustrates MAXQDA results in respect to the three components of imageability: structure (path, edge, district, node, landmark), identity (physical attributes), and meaning (spiritual attributes). Fig. 9 represents the visualized images.

4.4. The extraordinary tale of the city of brass

4.4.1. The narrative storyline

Caliph Abd al-Malik hears of a strange tale of Solomon who used to incarcerate 'Afarit' (jinnis) and other evil spirits in old copper jars, that are sealed and thrown to the bottom of the sea, near a mountain. A city, known as the City of Brass, that no stranger has ever entered, is perched on top of that mountain. The Caliph sends his men to explore the mysterious city, and bring him the copper jars of Solomon. They reach the city of high walls, and build ladders to climb the walls. The story goes on exploring the strange empty city, where all inhabitants are dead, and describing its architecture; buildings of great opulence, gates, palaces with domes, towers, tombs, as well as surfaces covered in gold and jewels. The men take some of the treasures and twelve copper jars and return to the Caliph, telling him everything they have seen. The Caliph frees the jinnis from the jars, and divide the treasures among his men.

4.4.2. Structural narrative analysis

(A) The city of brass: high brass walls, 25 hidden doors, rounded city.

Scenes from inside the city: "the brass walls, which were so polished that they seemed to have come newly out of mould. They were so high that they had the appearance of being but the lowest range of the gigantic mountains which surrounded them", [60, p.296]. "while their eyes searched for some door by which to enter the city. This they could not find, so they began to walk round the walls, always hoping to discover some entrance. For many hours they continued their search, without seeing any door or breach whatsoever", [60, p.296]. "two towers joined by a double door of brass so perfectly made that even the point of a needle could not have passed into the crack of it" [60, p.298]. "travellers came to the entrance of the market and, finding all the doors open, walked into it. Amid a disdainful silence, the travellers walked on until they came to a great enclosed and vaulted market, where their footsteps echoed with a great noise because of the lack of all other sound. They visited the markets of the jewellers, silk-merchants, saddlers, cloth-merchants, cobblers, and sellers of spices and aromatic woods" [60, p.300].

Description of the city from the top of the mountains

"domes of palaces, the terraces of houses, calm gardens levelled in the living brass, moon-bright canals making a thousand wanderings in and out of the shadows of trees, and, lowest of all, a metal sea holding in its cold breast the drowned fires of the sky: so that the brass of the walls, the lighted jewels of the domes, the white terraces, the canals, and all the sea, together with the shadows which lay towards the west" [60, p.297].

(B) The Great Hall and the Palace:

Description of the great hall leading to the palace:

"They saw a gallery supported by prophyry columns which ran the whole length of the building and enclosed a court refreshed with basins of coloured marble. This gallery seemed to be an arsenal, for there

were fastened to all the columns and all the walls and to the ceiling admirable weapons of war, marvellously enriched with precious stones, and taken from all the countries of the earth" [60, p.301].

"a hall where a fountain of transparent marble threw its jet of water into the air. Above this fountain there spread out, as a ceiling of pleasing colour, a pavilion of silk and gold, whose shades were married with a perfect art. To come to the fountain basin, the water followed four canals, hollowed in the floor of the hall, with calculated meanderings" [60, p.302], "a larger door than all, worked with fine inlay of ivory and ebony and fastened by locks of solid silver with no trace of room for a key" [60, p.303].

"a miraculous chamber hollowed inside a polished marble dome, which had the appearance of a steel mirror, by a trellis of emeralds and diamonds across the windows" [60, p.305].

4.4.3. Application of imageability conceptual framework

Fig. 10 illustrates MAXQDA results in respect to the three components of imageability: structure (path, edge, district, node, landmark), identity (physical attributes), and meaning (spiritual attributes). Fig. 11 represents the visualized images.

5. Discussion

The research conducted a narrative –analysis approach to four selected tales of *The Thousand and one Nights*. The analysis included the structuring of each tale into basic cores, the application of conceptual framework using MAXQDA software, and finally the visualization of extracted data. The results of the analysis are as follows:

- 1- **Significance of elements:** Figs. 4, 6, 8, 10 show codes' frequency, percentages, and weight score segments of each tale. Fig. 12 provides a platform for comparison between tales, as it displays the code matrix, the code relations, and the code map that illustrates significant associations of codes in all tales. The results revealed that the information extracted from the tales filled into the three components of 'imageability': structure, identity and meaning, and that all elements contributed in the construction of each tale with relative salience. The landmarks acquired the highest score in all tales, as shown in the code matrix Fig. 12, confirming their role in shaping cognitive environments. The results emphasize the significance of landmarks (representing the Gestalt's figure-ground principle) as the most vivid elements that can act as anchors in environmental knowledge acquisition. This outcome is compatible with findings in previous studies [21,28,29,31] that highlighted the role of landmarks as pivotal and decisive clues in any physical setting.

Appendix A (1) displays the 'code cloud' for the most frequently mentioned landmarks in each tale, that worked as main references in the image visualizations, Figs. 5, 7, 9, 11. The spiritual attributes emerged as the second most significant element of "imageability" as shown in the code matrix in Fig. 12. The 'code cloud' in Appendix A (2) shows the most frequently mentioned spiritual attributes in the four tales. The supernatural elements gained the highest weight score, exemplified by the words "magic lamp, magic copper ring, ifrit (genie)" in Aladdin's tale, and the words "rukh (roc) bird", which is an enormous legendary bird popularized-with other mythical creatures-in Sindbad's tale, and the words "afarit & jinn (genie), magic copper jars" in the City of Brass tale, and finally the words "Open Sesame" in Ali Baba's tale. These elements contributed to the specificity and particularity of the settings in each tale. The findings are in line with previous studies [36,37] that

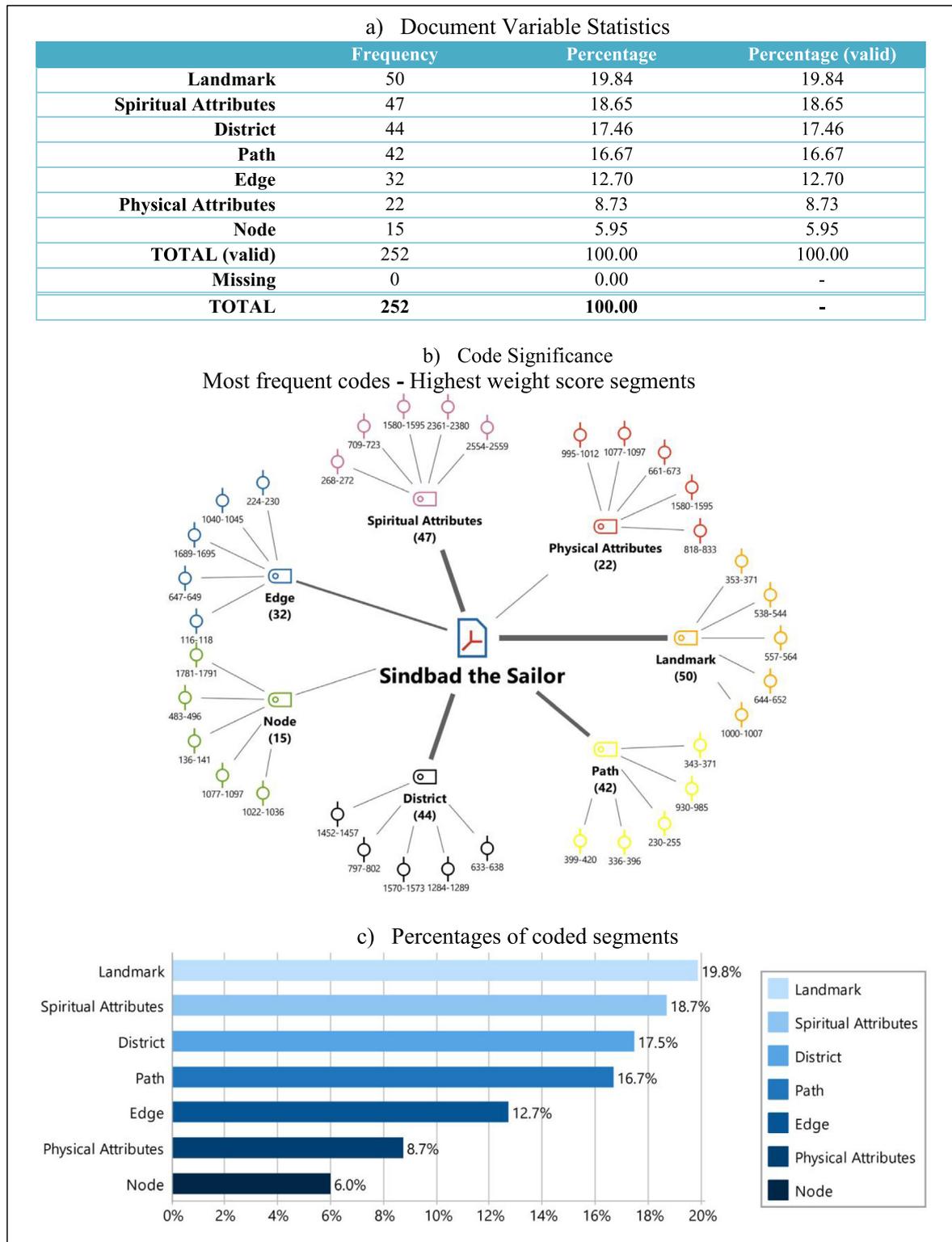


Fig. 8. The Tale of Sinbad the Sailor/Codes' Frequency and Significance.

stressed on the potentials of the supernatural in evoking the 'genius loci' of places.

The paths constituted the third significant element in the code matrix, Fig. 12, followed by the physical attributes, nodes, districts and edges respectively.

The 'code relations' and 'code map' in Fig. 12, show significant correlation between the landmark and the physical attributes, as the latter provides the former with distinctive character, followed

by a less significant relation between the landmark and the spiritual attributes (symbolic meanings). These findings are compatible with findings in previous studies [28,29,30] that investigated the role of the tangible and intangible factors in the formation of mental images.

2- The geographic setting: Aladdin's story is probably the most famous tale in *The Thousand and One Nights* or *The Arabian nights*, yet the opening sentence of the story referred to the setting as

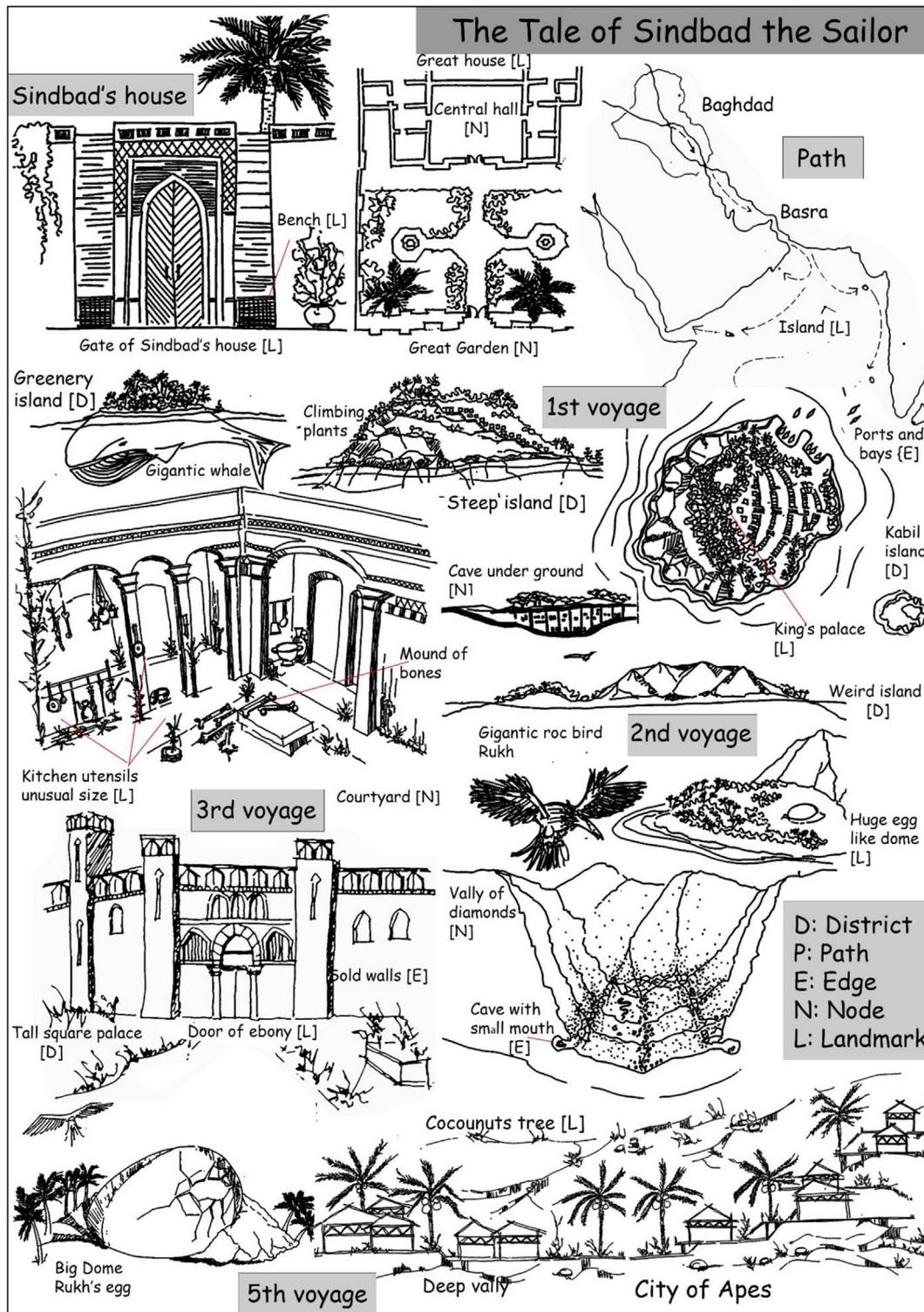


Fig. 9. The Tale of Sindbad the Sailor/Visualized Images [Authors].

one of the cities in China. This issue raised questions among critics [47,51]. The current study revealed there is nothing in the rest of the story that is inconsistent with a Middle Eastern setting, as the characters in the story are Muslims, the king is referred to as 'Sultan', and many other Arabic names and terms are used throughout the tale, such as 'ifrit & jinni' (genie), 'hammam' (Arabic bath), 'diwan' (hall), 'khan' (guest house), and 'dinar & dirham'

(Arabic monetary units). The discourse between the characters is filled with Muslim platitudes, and their behavior is consistent with Islamic faith. Also the jinn (genies) are only found in Arabic folklore [61]. Moreover, the descriptions of the urban scenes and the building types display characteristics of Islamic architecture and planning. Some critics argue that China, in early Arabic usage, was often just a symbol for a faraway land, or in an abstract sense to

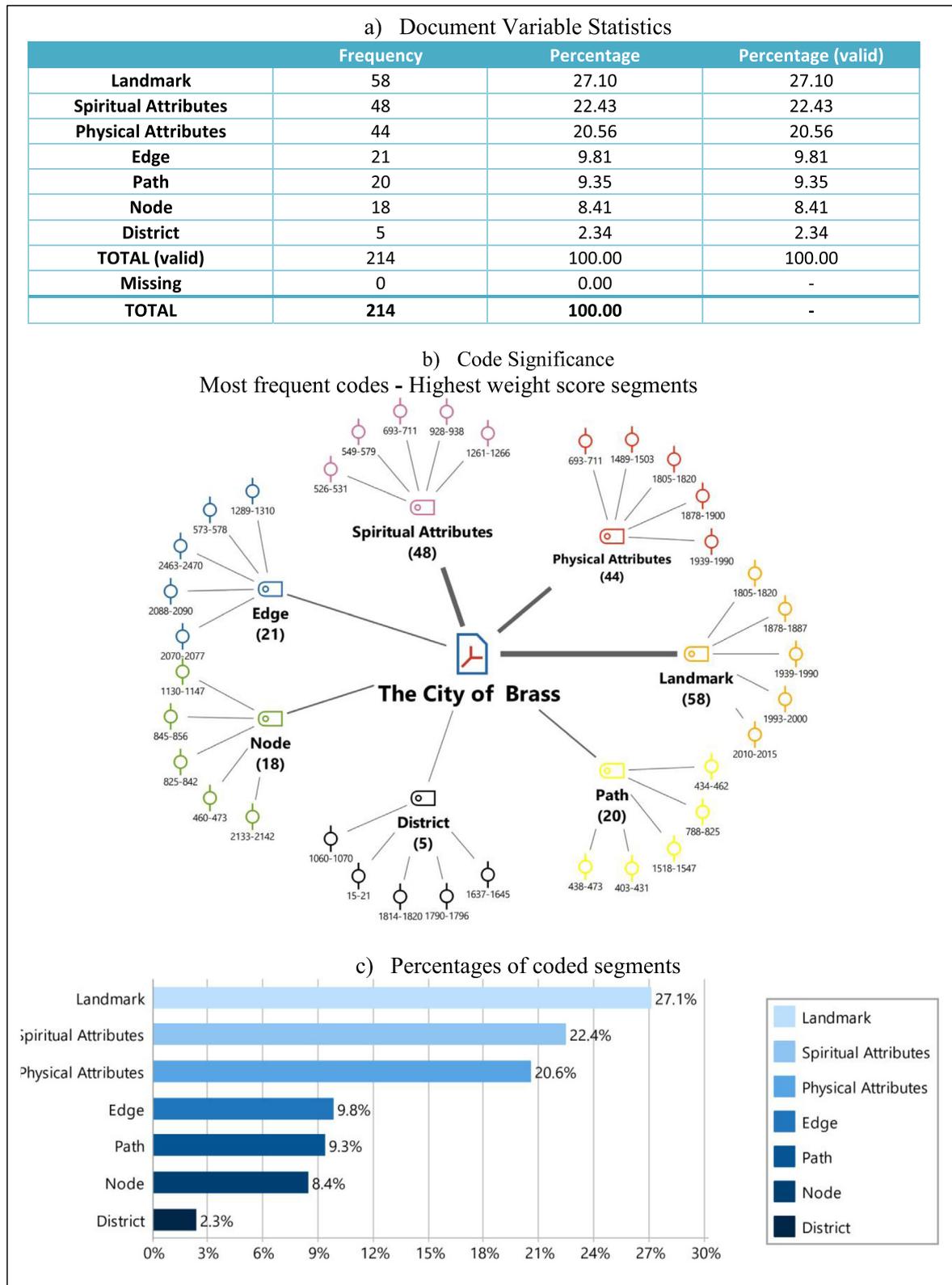


Fig. 10. The Tale of the City of Brass/Codes' Frequency and Significance.

denote an exotic place [62,63]. Fig. 4 shows the frequent mentioning of Arabic and Islamic terms (208 mentions throughout the tale). The code cloud in Appendix A (3) display the most frequent words used which indicate that the setting is an Islamic city, with no specification of any certain city.

The main argument of the present research is that although *The Thousand and One Nights* tales are associated with many cities in the Middle Eastern region like Cairo, Baghdad, Damascus, Basrah, cities in Turkey and Persia, etc., Baghdad is still widely known as "The city of the Arabian Nights" [64,65], mostly because the tales

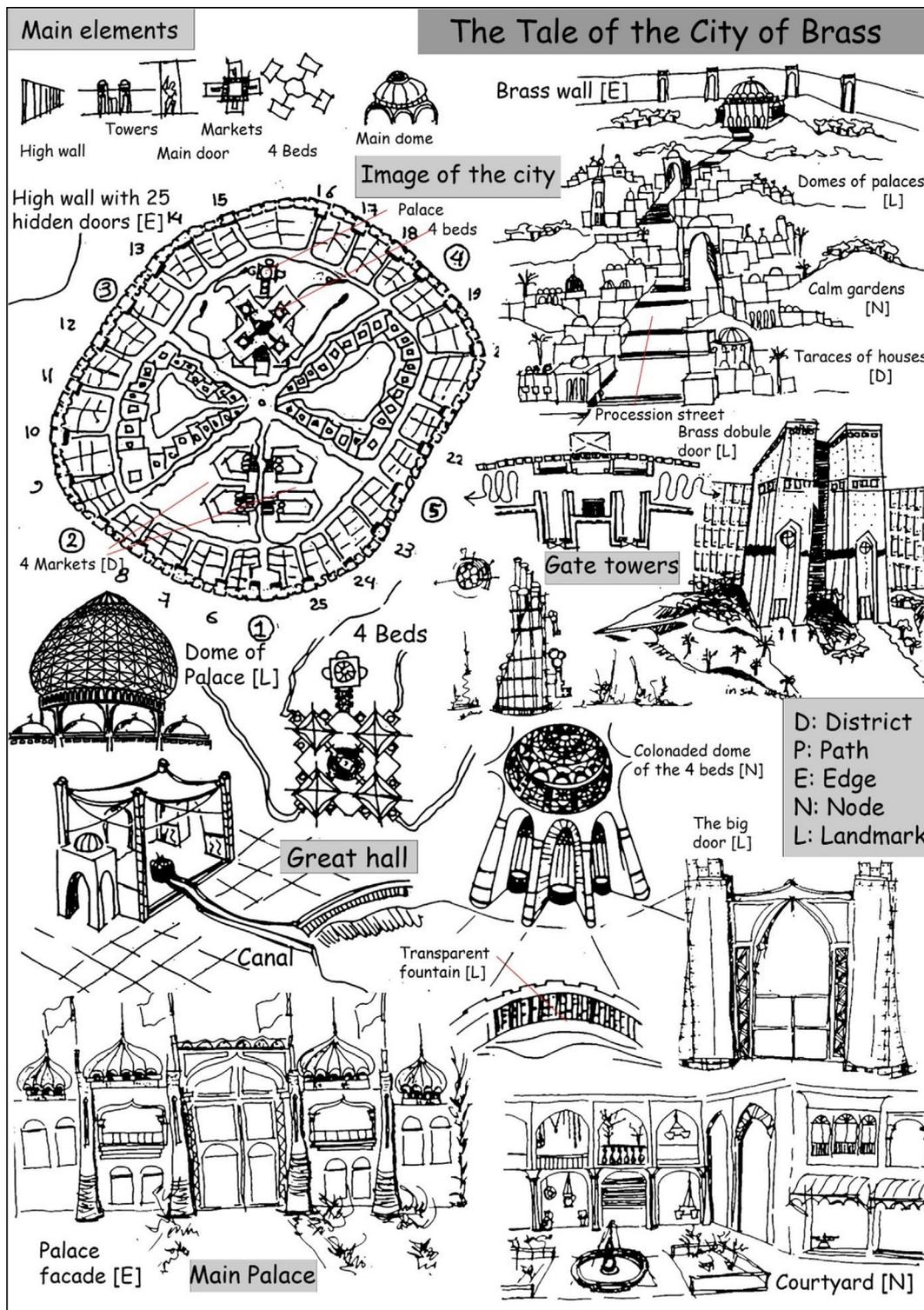


Fig. 11. The Tale of the City of Brass/Visualized Images [Authors].

were set at the time when Baghdad was an important cosmopolitan city and the capital of the Islamic Empire, reigned by Harun al-Rashid, who was the hero of many stories.

3- Visualization of Images: The most significant elements and their relations in the basic cores of each tale, together with their detailed descriptions in texts (some of which are presented in the selected quotations in the structure analysis of tales), promoted the authors' endeavors to produce figures that can best

reveal the imageability and genius loci of settings, Figs. 5, 7, 9, 11. The authors have carefully adhered to the texts especially in respect to details of architectonic and natural elements and their interrelations, as well as the spatial relations. For example, in Aladdin's story; the city is described as surrounded by gardens and edged by mountains, the procession street where the main activities take place ends up with the Sultan's court-yarded palace, and Aladdin chose to locate his palace - with its vast crystal

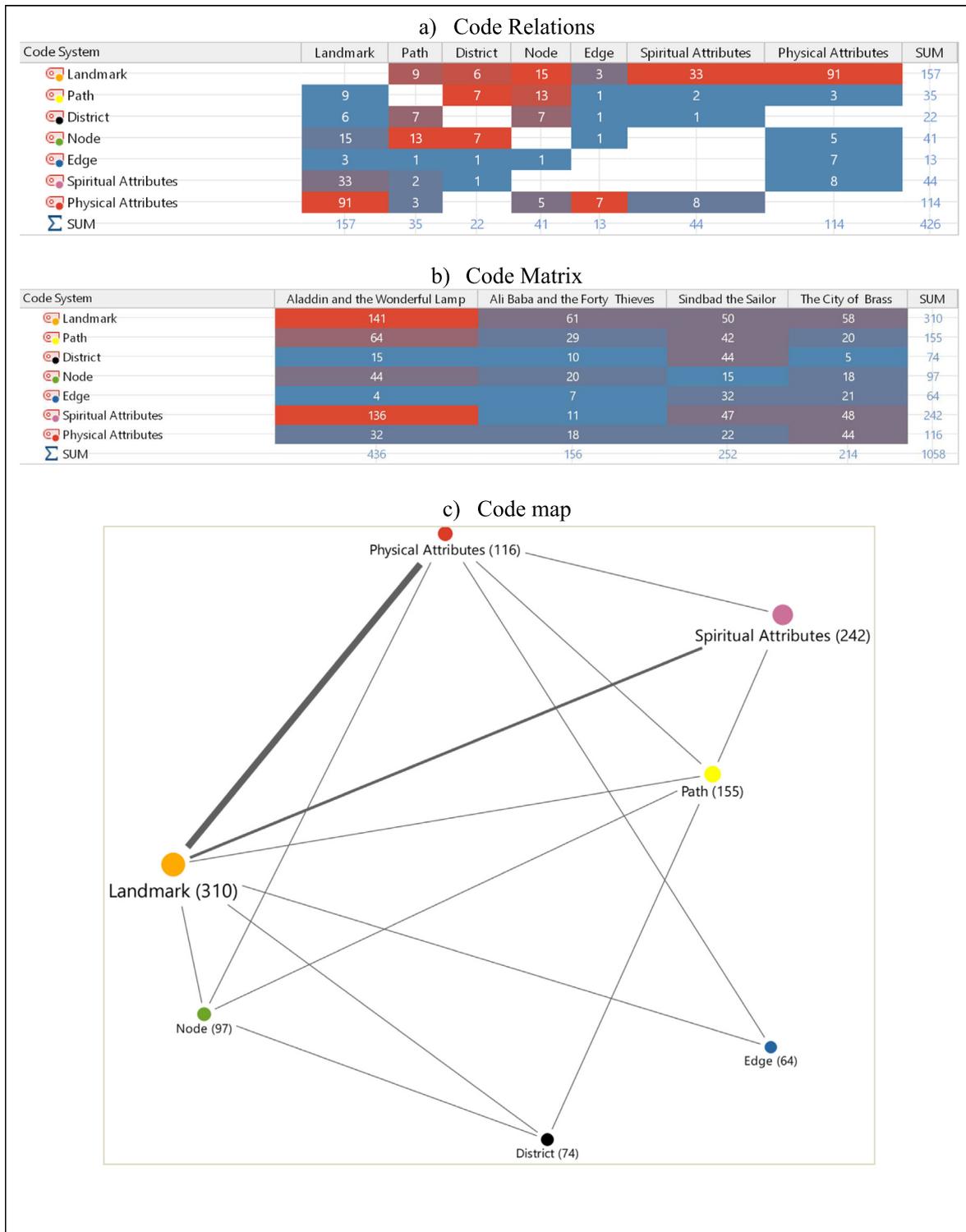


Fig. 12. The Four Tales/Codes' Relations, Matrix and Map.

dome – opposite to the Sultan’s palace, separated by a courtyard and a splendid garden with a velvet carpet extended between the two palaces so that the princess would pass across without wearying her feet, etc. All these details have been carefully depicted in Fig. 5. Nevertheless, developing an image from text involves multiple challenges, as one has to pass beyond the qualitative and quantitative descriptions to fill in the missing information from the stored architecture knowledge. Porada (1997) argues

that images cannot have precise manifestation nor stable localization, as they are vectors of instant expression and manipulating meanings [36]. Although the produced figures convey – to an extent – the essence and ‘genius loci’ of each tale, they are liable to alternative manifestations that can achieve the same aspiration. This is the main limitation of the present research. To the best of the authors’ knowledge, this issue has not been tackled in previous studies in architecture, though there are research efforts in other

fields to produce 3D scenes from natural language texts depending on spatial and graphical semantic primitives [66,67]. The case in architecture is far more complicated.

4- Reviving the 'imageability' of Baghdad city: The increasing spread of the processes of modernization -led by the notions of industrialization and globalization- in cities around the world in general, and the city of Baghdad in particular, has caused a dehumanization of the urban context as a result of the loss of identity, creating a strong sense of 'placelessness' [18]. The aura of a place reflected by its 'genius loci' constitutes a significant criterion of how can processes of conservation, restoration, renovation or even reconstruction are concerned and oriented to evoke the spiritual message of a city with a long history like Baghdad. The UNESCO's quest for culture to be incorporated into sustainability and to be granted a pillar of its own, implicitly concedes the many failures that cities have encountered in their processes of development, and signifies the need for a more understanding and incorporation of the cultural heritage to evoke the 'genius loci' of places, and co-regenerate sustainable cities and stronger communities. The findings of the current research provided an insight on the potency of *The Thousand and One Nights* as a tool that fosters innovative ideas to revive the 'imageability' of Baghdad city by means of creating what is known as "urban planning narratives", or the planning of urban projects (cultural or entertainment) that tell stories inspired from the essence of the tales and their perceptual and cognitive implications. This helps in keeping past events alive in the memory of citizens through the physical representations in the urban context. The Opera House by Wright represents an early reflection of this approach. The narrative-based urban planning enhances the sense of belonging among citizens, while increasing the touristic and economic value of urban projects [68]. This is in line with the term "fictional urbanism" introduced by Matthey in (2011); the urbanism that is based on storytelling originated from myths of culture as a prescriptive model for planning practices [69], coinciding with Ashworth's phrase "*History forms heritage, and heritage creates identity*" [70]. The structure analysis of the tales and the visualization of images highlight the significant impact and the rich potentials of the physical, spatial, and spiritual attributes in evoking the 'imageability' and 'genius loci' of settings. This also promotes the establishing of an urban design strategy that reveals ideas of artistic city building based on the authenticity of cultural elements that can be located in unique public spaces in Baghdad such as plazas, urban parks, city nodes, etc. This helps in recovering pride in folk heritage, contributing to the growth of socio-cultural identity, as well as the sense of fundamental uniqueness and the feeling that the nation is an integral unity. The sculptures of Mohammed Ghani Hekmat are examples of this approach, (Fig. 3). "*City planning and design is the monumental expression of civic spirit, the soil that nurtures true patriotism*" [71].

Previous studies conducted in European cities [72,73] emphasized the adopting of innovative design attempts to create new forms of spaces in regard to 'genius loci' and conservation of cultural heritage, that can efficiently work as a place identity generator, as well as a factor to synchronize different ethnic/cultural/social groups by offering them a new common terrain for interactions.

The findings and discussion of the current study are also consistent with findings in recent studies [74,75] conducted to conserve urban heritage of three Egyptian cities (Rosetta, Rashid & Fouh). These studies emphasized the role of cultural heritage as a strong indispensable resource, a tourist attraction, and an identity element as well as a motive for social unity. Another study [76]

conducted to assess the quality of life in Egyptian cities, recommended the consideration of the socio-cultural factors in the urban redevelopment plans, as one of the potential actions for elevating the 'spirit of place', enhancing the quality of life, and promoting the sense of pride within the urban communities in Egypt. In line with the present study, a study conducted in Kyrenia, Samsun, and other cities in Turkey [44], concluded that the most powerful elements that contribute in reviving the urban identity of cities, are the natural and the social-cultural environment. The current study also accords with the recommendation presented in a previous study [77] that community awareness of the value of heritage conservation should be raised and considered in future endeavors to enhance the local character over modern artificial ones, in order to promote sense of belonging and identity.

In keeping with the above analyses and discussion, we can put forward that architects and urban planners should be looking for new insights in understanding and approaching the city to enhance its local character and reinforce its identity. The legacy of the past offers rich potentials, and provides a worthwhile starting point for redevelopment.

6. Conclusion

The article introduces an innovative attempt of integrating interests of the local community in intangible cultural heritage preservation, through the revival of the memories of the indigenous folktales "The Thousand and One Nights" that bring forth new insights in sustaining cultural assets, and afford new pathways to urban development. The research developed a theoretical framework for the concept of "imageability" and 'genius loci' by which the structure of selected tales, as well as their physical, spatial and spiritual attributes are explored. The findings highlighted the perceptual and cognitive implications of the tales in defining the structure, identity and meaning of the urban context, thereby accentuating their potential role as a dynamic and ever-lasting resource -based on the heritage of the past- that can revive the imageability of Baghdad city, maintain its essence, and sustain its cultural identity.

Perhaps the main conclusion to be drawn at this stage is that the current study points the way to a theoretically-driven rich approach to folktale interpretation and visualization research. Clearly, more research needs to be undertaken to develop and refine the concept of imageability. The framework also needs to be tested further with larger samples of tales; as certain types of tales may induce a stronger sense of imageability. Finally, the article outlines the urgent need for systematic research and powerful techniques and methods to develop a more verifiable 'text-to-image synthesis' approach.

CRedit authorship contribution statement

Huda S. Fakhruddin: Conceptualization, Methodology, Visualization. **Hoda A.S. Al-Alwan:** Conceptualization, Methodology, Writing – review & editing, Supervision. **Amal Fadhil:** Conceptualization, Methodology, Visualization, Software.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A

MAX QDA results

1. Landmark Code Clouds: The most frequently mentioned landmarks in the 4 tales

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| <p>a. Aladdin and the Wonderful Lamp</p> | <p>b. Ali Baba and the Forty Thieves</p> | <p>c. Sindbad the Sailor</p> | <p>d. The City of Brass</p> |

2. Spiritual Attributes Code Clouds: The most frequently mentioned spiritual attributes in the 4 tales

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| <p>e. Aladdin and the Wonderful Lamp</p> | <p>f. Ali Baba and the Forty Thieves</p> | <p>g. Sindbad the Sailor</p> | <p>h. The City of Brass</p> |

3. Arabic and Islamic terms Code Cloud: The most frequently mentioned terms in Aladdin's tale

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| <p>a. Aladdin and the Wonderful Lamp</p> |

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