



Architectural sustainability with cultural heritage values

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Abstract

Sustainability and cultural heritage are two interconnected and interdependent issues that are essential for achieving sustainable development. Cultural heritage plays a critical role in society as it is an integral part of the social and cultural fabric. This article focuses on the relationship between sustainability and cultural heritage, specifically the integration of cultural heritage into urban and environmentally sustainable development. To achieve this, the study used Tabriz Bazaar as a case study to explore how cultural heritage can be preserved while balancing economic expansion and sustainable development. The research question is how cultural heritage can be integrated into urban and environmentally sustainable development using Tabriz Bazaar as a case study. The hypothesis is that the preservation and protection of cultural heritage values are crucial for achieving sustainable development, and an interdisciplinary approach is necessary to balance economic expansion with cultural heritage preservation. Using a case study approach, the research collected data through a literature review and interviews with experts in the fields of cultural heritage preservation, urban and environmental sustainability, and economics. The research analyzes the challenges of balancing economic development with cultural heritage preservation and proposes an interdisciplinary approach to address these challenges. To make the area more sustainable and preserve its cultural heritage values, specific measures such as promoting cycling in Tabriz Bazaar were recommended. Moreover, education and awareness-raising programs are also necessary to promote the importance of cultural heritage and its contribution to sustainable development. Overall, the research highlights the interdependence between sustainability and cultural heritage and emphasizes the importance of preserving cultural heritage to achieve sustainable development. Policymakers, urban planners, and cultural heritage conservationists can benefit from the findings of this study to develop strategies that promote sustainable development while preserving cultural heritage values.

1. Introduction

Sustainable development encompasses not just ecological but also economic, social, and cultural dimensions. Many research has shown that preserving cultural heritage enhances ecological, social, cultural, and economic sustainability. Cultural legacy may benefit communities' well-being and quality of life, assist in alleviating the consequences of cultural globalization, and serve as an incentive for long-term economic growth. Cultural heritage preservation is frequently viewed as a barrier to economic development, despite the fact that cultural heritage and its preservation can generate a variety of economic benefits, including income and job creation, professional training and the preservation of craft skills, revitalization of city centers, heritage

tourism, increased real estate values, small business improvement, and so on. Repurposing abandoned or underutilized historic structures is critical to regenerating communities and enhancing quality of life. It is critical to acknowledge cultural heritage as a significant resource and development incentive in order to adopt sustainable development methods and improve quality of life. The paper discusses the impact of immovable cultural heritage on the implementation of sustainable development strategies, the role of cultural heritage in the context of globalization as a fundamental means of avoiding the trend of cultural globalization, the formation of sustainable communities, and the potential impact of cultural heritage resources on economic development and resource productivity. It is important

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for cultural heritage cities and urban heritage cities to recognize heritage preservation as a necessary goal for sustainable planning in urban planning. Our past experience shows to date that monument preservation planning makes a positive contribution to sustainable planning research. This is only possible by protecting and enhancing key elements of the natural and cultural heritage through planning [1]. Cultural heritage connects us to the past, serves as the basis of our identity and is a source of knowledge.

2. Methods

2.1. Sustainable development

Sustainable development aims to improve living standards, preserve ecosystems, and secure basic needs while creating a safer and happier future. It involves designing economic, financial, trade, energy, agricultural, and industrial policies that promote sustainability. This includes investing in education, health, population, and energy to avoid social debt for future generations. Sustainable development is a comprehensive concept that impacts all aspects of human life, requiring significant changes in national and international policies. Ultimately, it is an approach to economic growth that seeks to meet the needs of the present without compromising the ability of future generations to meet their own needs [2].

The breadth of work in the name of sustainability, the diversity of existing concepts, the importance of ordering between principles, and the vast regional differences are some of the first to compel the designer to find the truth. The common purpose of sustainability studies is to examine from an architectural perspective how natural energy resources can be protected and conserved by assessing sustainability in relation to the natural environment [3]. This includes reducing carbon emissions, protecting natural resources, promoting social equity, and ensuring economic growth that is both environmentally responsible and socially inclusive.

Sustainable development is a broad concept that recognizes the interconnectedness of economic, social, and environmental factors, and it has direct implications for planning, housing, and urban development policies worldwide. Urban planning is an effective tool for steering sustainable development, but it alone is insufficient to ensure sustainability. The United Nations' Sustainable Development Goals (SDGs), particularly Goal 11, emphasize the need to create inclusive, safe, resilient, and sustainable cities and communities. The New Urban Agenda, adopted at the United Nations Conference on Housing and Sustainable Urban Development, also underscores the importance of participatory urban planning and partnerships among stakeholders to achieve sustainable development.

2.2. Cultural heritage

The term cultural heritage is used to refer to the "physical and intangible manifestations of a group's identity" [4]. This includes such elements as art, architecture, stories, rituals, and so on. It has important

economic and social roles as well, including as a tourist attraction, source of employment, and source of revenue [5]. It is also used to denote a cultural landscape that is particular to a region or area. Cultural heritage and the field of architectural science mutually constitute interrelated components that exhibit a synergistic relationship. A fresh outlook on cultural heritage has materialized, evident in the consequential provisions of the Faro Convention. Notably, the Convention's second clause distinctly delineates cultural heritage as an assemblage of historical resources, which individuals perceive as an unattributed manifestation and mirror of their continuously evolving principles, convictions, erudition, and customs [6]. Cultural heritage is a dynamic and evolving field, with new elements constantly being added. Cultural heritage has a variety of roles and functions that are related to the local community and to the global community. Many of these roles are the same as those of other sectors, such as tourism, arts, education, and health [7]. However, these are sometimes overlooked or undervalued. They have a vital role to play in society and are essential to maintaining cultural identities and improving quality of life in the community [8]. Key roles and functions of cultural heritage include education and knowledge creation, economic development, tourism, and aesthetic enjoyment. While these are valuable contributions, they have not always been considered in the same way that other sectors of society have been treated. Some of the key challenges facing the field of cultural heritage include globalization and the loss of identity, changes in behavior and attitudes.

2.3. Cultural heritage and architectural sustainable development

Short-term interests promote speculative developments, which pose substantial dangers to cultural assets and the historical landscape. Cultural assets and historic surroundings are important not just to individuals who own or reside in historic buildings. Cultural legacy may also contribute to a community's well-being and quality of life by preventing cultural globalization, preserving cultural variety, and positively impacting economic growth. According to D. Rypkema, in a larger perspective, the importance of heritage in the quest of sustainable development is unmistakable: the protection of cultural heritage offers environmental, cultural, and economic sustainability [9]. Cultural heritage plays a marginal role in the 2030 Agenda for Sustainable Development. It is only explicitly mentioned once in Goal 11, which relates to cities, specifically the need to make cities and human settlements inclusive, safe, resilient and sustainable through inclusive and sustainable urbanization, planning and management (Goal 11.3). and increased efforts to protect and preserve the world's cultural and natural heritage (target 11.4).

2.3.1. Cultural heritage values in Tabriz

According to the trend of comprehensive developments in today's cities of the world, the cities of Iran and Azerbaijan in general and the city of Tabriz in

particular have undergone many changes in the architecture with historical value and the way of distributing activities in recent decades. The role of the city administration and planning in preserving historical and unique architectures and creating a healthy environment, economic, social, touristic city, etc. has helped to make the urban system healthy and balanced. The historical city of Tabriz has experienced various administrations and plans over the last few decades that have left their impact on the development of the city and the nature of the texture and environmental issues that have caused the destruction of the old architecture and the unequal distribution of the city services that these Problems in different eras and time management were different.



Figure 1. The relationship between culture, society, environment and economy with sustainability.

Tabriz, located in northwestern Iran, has a rich cultural heritage that reflects its historical importance as a commercial center and cultural center. Some of the main heritage values in Tabriz are shown in Table 1.

Cities are caught between the desire to be a member of the global network and the need to maintain their individuality and cultural origins. As new progress symbols have shattered conventional contexts, new meanings of community have developed [10].

The value of cultural heritage has always been an important factor in the development of any country. In fact, it has played an important role in the development of nations. In addition, it has played an important role in the development of the economies of these countries [11]. In this sense, it has become a valuable resource for both individual and social development. Accordingly, it is important to develop a system for the protection and management of these values. Therefore, developing a system for the conservation of cultural heritage values is a priority in Iran. To do this, it is necessary to identify these values and then put measures in place to protect them from harm. The successful execution of a comprehensive conservation program, involving scientific surveys, analyses, and evaluations, entails the diligent coordination of proficient technical experts,

careful selection of suitable methodologies for the project, and the seamless transmission of precise information across different stages of scientific research. Additionally, it is imperative to establish a comprehensive management and monitoring program that encompasses the pre-implementation, implementation, and post-implementation phases of conservation efforts [12]. In this regard, it is important to draw up a plan for the protection of cultural heritage values and then monitor its implementation to ensure that it is carried out correctly. In Iran, there is not a proper system for the management and protection of cultural heritage. Thus, the contribution of this project is to develop a comprehensive plan for the conservation of cultural heritage in the country. In order to do this, it is necessary to conduct a comprehensive assessment of cultural values and identify their needs for protection and preservation. This assessment will be based on the available data and information. It will also be carried out with the help of experts and authorities who have relevant experience in the field. As a result, the project will develop a model for the conservation and protection of cultural heritage in Iran that can be used to ensure the preservation of this valuable resource for future generations. The work that is being done under this project is expected to help Iran to make a valuable contribution to the global community by ensuring the conservation and preservation of its unique cultural heritage. This will ultimately enable Iran to contribute to the development of the global economy and enhance its reputation as a developing country in the global community. As a result, the success of the project will help to enhance the country's economy and improve the overall quality of life for all citizens in Iran.

The sustainability of historical bazaars is only significant if it accurately reflects the everyday busyness of the community through their physical structures. It is crucial to consider how the renewal process affects the daily life of the community. Unfortunately, urban planners often make spatial changes in an effort to enhance functionality, resulting in changes or elimination of current behavioral regulations. When the workplaces of the sellers are significantly altered or removed, the working methods, physical presence, and sensory experiences they produce within the bazaar also change, all of which are integral to the bazaar environment and contribute to its individual memories and collective identity [13]. Therefore, the sustainability of historical bazaars can only be achieved if it accurately portrays the hustle and bustle of daily life through their physical structures, and if any renewal process considers the impact on the community's daily life and preserves the bazaar's unique character and identity.

Rebuilding Tabriz market with sustainable development in mind would involve considering economic, social, and environmental aspects of the project. Here are some steps that can be taken to achieve this (Table 1).

Table 1. Heritage values of Tabriz.

Items	Heritage values	y	z
1	Historic Architecture	<p>Tabriz has numerous historic buildings, such as the Tabriz Historic Bazaar Complex, the Blue Mosque and the Arg of Tabriz, which reflect the city's architectural and cultural heritage.</p>	
2	Traditional Crafts	<p>Tabriz has a long history of producing high-quality handicrafts such as carpets, copperware and pottery, which are highly valued both locally and internationally.</p>	
3	Culinary Traditions	<p>Tabriz is known for its unique and delicious cuisine, including dishes such as Kofte Tabrizi, a type of meatball and Ash Reshteh, a type of soup.</p>	
4	Festivals and Celebrations	<p>Tabriz hosts a number of annual festivals and cultural celebrations including the Tabriz International Carpet Fair, the Tabriz Traditional Music Festival and the Tabriz Pistachio Festival.</p>	
5	Cultural Diversity	<p>Tabriz has a diverse population that includes different ethnic and religious groups that have contributed to the city's cultural heritage over time.</p>	



Figure 2. Iran's Map.



Figure 3. Tabriz's Map.



Figure 4. Tabriz Bazaar Map (cycling road).

Develop a sustainability plan: The first step is to create a comprehensive plan that outlines the sustainable goals and objectives of the rebuilding project. This plan should consider factors such as reducing energy consumption, waste management, and promoting sustainable economic growth.

Use sustainable materials: In the rebuilding process, it's essential to use sustainable materials that have minimal environmental impacts. For example, materials that are locally sourced, recycled or have a low carbon footprint.

Incorporate renewable energy sources: Renewable energy sources like solar or wind power can be

integrated into the design to reduce energy consumption and promote clean energy use.

Promote local economy: To ensure the long-term sustainability of the market, it's essential to promote the local economy by supporting local businesses and suppliers. This will create jobs and stimulate economic growth in the region.

Encourage public transportation: The new design of the market should encourage public transportation to reduce the use of private cars, which contribute to air pollution and traffic congestion. For example, bike lanes, bus stops, or public transportation stations can be incorporated into the design.

Implement waste management strategies: The market should have a comprehensive waste management plan that includes recycling and composting to minimize waste production and promote sustainability.

Consider social aspects: In addition to economic and environmental factors, social aspects such as inclusivity, accessibility, and safety should be considered in the rebuilding process. For example, the market should be designed to be accessible to people with disabilities and provide safe spaces for everyone.

3. Conclusion

In summary, rebuilding Tabriz market with sustainable development in mind requires a comprehensive approach that considers economic, social, and environmental factors. By implementing the steps above, it's possible to create a sustainable market that promotes economic growth, environmental protection, and social well-being.

Making the Tabriz bazaar more sustainable can have a positive impact on cultural heritage in several ways. Here are some examples:

Preservation of historical architecture: The Tabriz bazaar is a unique cultural heritage site with a rich history and unique architecture. By promoting sustainable practices in the bazaar, such as using sustainable materials and reducing waste production, the historical architecture of the bazaar can be preserved and maintained for future generations.

Promotion of local culture and heritage: Supporting local businesses and promoting sustainable tourism practices in the Tabriz bazaar can help to promote the local culture and heritage of the region. This can include showcasing traditional crafts and products, preserving local customs and traditions, and celebrating local festivals and events.

Increased awareness and education: By promoting sustainable practices in the Tabriz bazaar, people can become more aware of the importance of preserving cultural heritage and the role that sustainability can play in achieving this. This can lead to increased education and awareness of cultural heritage among visitors and residents of the bazaar.

Collaboration with local communities: Making the Tabriz bazaar more sustainable can involve working closely with local communities to ensure that their cultural heritage is respected and preserved. This can involve collaborating with local artisans and craftspeople, supporting local festivals and events, and providing opportunities for community engagement and participation in sustainable practices.

Sustainable tourism: Sustainable tourism practices can help to promote cultural heritage in the Tabriz bazaar, such as supporting local businesses, providing opportunities for cultural exchange and learning, and minimizing negative impacts on the environment and local communities.

In summary, making the Tabriz bazaar more sustainable can have a positive impact on cultural heritage by preserving historical architecture, promoting

local culture and heritage, increasing awareness and education, collaborating with local communities, and promoting sustainable tourism practices.

To encourage public transportation like bike lanes in the bazaar of Tabriz, the following steps can be taken:

1. **Conduct a feasibility study:** Before implementing any bike lanes or other infrastructure, it's important to conduct a feasibility study to determine if it's possible and practical to create bike lanes in the bazaar. This study should consider factors like the size of the bazaar, the number of visitors, and the availability of alternative transportation options.

2. **Design safe and accessible bike lanes:** The bike lanes should be designed to ensure the safety of cyclists and pedestrians, and to provide easy access to the bazaar. This includes separating the bike lane from vehicle traffic, providing clear signage, and ensuring that the bike lanes are well-maintained.

3. **Educate the public:** Educating the public about the benefits of cycling and the availability of bike lanes in the bazaar is essential to encourage more people to use them. This can be done through outreach programs, signage, and other forms of communication.

4. **Provide bike parking facilities:** Providing secure and accessible bike parking facilities near the bazaar will encourage people to cycle to the bazaar. This could include bike racks, bike lockers, or even bike-sharing programs.

5. **Work with local businesses:** Working with local businesses to promote cycling to the bazaar can be a powerful tool in encouraging people to use bike lanes. For example, businesses could offer discounts or incentives to customers who arrive by bike.

6. **Collaborate with local government:** Collaborating with local government to provide funding and support for bike lanes and other cycling infrastructure is critical to their success. This could include providing funding for bike lane construction and maintenance, as well as other initiatives to encourage cycling, such as public awareness campaigns and bike share programs.

By taking these steps, it's possible to encourage more people to use public transportation like bike lanes in the bazaar of Tabriz, reducing traffic congestion, improving air quality, and promoting sustainable transportation options.

Author contributions

Sahar Elyasi: Methodology, Field study, writing original draft preparation **Ruşen Yamaçlı:** Writing-Reviewing and Editing, validation

Conflicts of interest

There is no conflict of interest between the authors.

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