CHALLENGES AND FUTURE PROSPECT OF ADAPTIVE REUSE AS POTENTIAL TO SUSTAIN THE AUTHENTICITY OF FACADE IN TOWER HOUSES IN OLD SANA'A

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ABSTRACT

The study aims to assess how adaptive reuse is applied in Old Sana'a, Yemen, to ensure that historic sites remain authentic. The prime focus of the study is on the traditional quarter (Hara) in old Sana'a. Based on the review of literature this study has highlighted the main challenges and future prospects from the bird eye view of theory and practice. Although old Sana'a have been recognized by UNESCO World Heritage Convention as UNESCO World Heritage Site after evaluated by the World Heritage Committee on 2008, there are still lack of researches or studies on old Sana'a, especially the research on adaptive reuse of Tower houses in Hara. Hence, it is recommended to study the authentic value of tower house in old Sana'a. It is further motivated to evaluate the existing building conditions after applying adaptive reuse, degree of intervention on the original facade of tower houses in old Sana'a.

INTRODUCTION

Heritage buildings are assets for every nation. Reuse of heritage buildings are beneficial for the nations, organizations, and people in terms of economy, culture, history, and sustainability. Adaptive reuse is one of the restoration strategies that preserves the building's heritage and conserves its identity. The conservation of the heritage building helps the future generation to understand the property identity (Shen & Langston, 2010)as architecture of heritage reflects special historical, artistic, social and political characteristics of a century. In order to preserve the maximum authenticity of historic buildings and add to the preservation of the community, sustainable reuse should be achieved in the correct manner. In some instances, adaptive reuse could compromise the authenticity to meet the needs for modern development (Aydin & Yaldiz, 2010). However, the changes should be minimal and the

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authenticity of the heritage building could be protected if stakeholders are to value, recognize and value cultural assets (Harun, 2011).

The approach of adaptive reuse has been recently criticized due to the eagerness of owners and local authorities that in return harms and has greatly affected the heritage sites (Haidar & Talib, 2015). Even though they preserve the historical assets but they directly or indirectly affect the authenticity of the site(Tikhonova & Alho, 2015). If a proper adaptive reuse approach is not put into effect, it may endanger existence, value and history of the precious heritage sites.

Prior researches have been carried out on the improper preservation of the heritage sites that reduces the authenticity of the patrimony. Stakeholders reuse and adapt all kinds of buildings without adequate planning (Plevoets & Sowińska-Heim, 2018). Recent studies show that most walls of a heritage building's adaptive reuse lose their material and design authenticity (Foster, 2020; Mısırlısoy & Günçe, 2016). In short, it showed that the lack of authenticity in the building of the heritage is a serious problem and should be addressed correctly because of the negative effects of the value and environmental importance. A large number of interrelated factors can affect the lack of authenticity from this issue. Most researchers agreed that, because of incomplete data and details on each component of the building elements relating to authenticity in an adaptive reuse approach, the authenticity in adaptive work for the buildings of heritage buildings and the participants could not follow most of the guidance(Shehata et al., 2015). In addition, previous researchers added to control, recycle and preserve activities, an effective authenticity control strategy should be introduced in order to maintain the historic value of sites. This includes a better control of the size of the facade openings, the colour of the façades and the use of constructions technique (Ismail, 2013). The mismanagement of the local conservation framework, strategies and procedures also raised challenges at Sana'a heritage construction, as improper procedures an strategies has affected the authenticity of the adaptive reuse of historic sites.(Akasah et al., 2011). Though there are a lot of studies has been conducted on the adaptive reuse of the heritage building, but still there is need of more research from the developing nations perspective. As, the loss to the heritage in the developing nations is more than the developed nations. To the best of authors knowledge, no such study has been conducted in the context of Hara heritage zone.

The study aims to assess how adaptive reuse is applied in Old Sana'a, Yemen, to ensure that historic sites remain authentic. The prime focus of the study is on the traditional quarter (Hara) in old Sana'a. The Old Sanaa is a UNESCO World Heritage Site and one of the oldest continuously populated cities in the world and has been selected for its highly planned context, historical and cultural value going all the way back 2500 years. This research tries highlight the importance adaptive reuse of and authenticity, in Sana'a heritage sites.

LITERATURE REVIEW

International conventions in authenticity

The idea of authenticity is to reveal the aesthetic, historical value or the true nature of a property based on authentic material and records (Charter, 1964). Authenticity cannot be replicated or rebuilt without innovation. For instance, Alivizatou (2012) has mentioned, "Authenticity does not mean blind perpetuation of traditions, but rather a more creative engagement with how to make relevant the traditions of the past in the present."Authenticity may be described in two ways: either as an entity, location, occurrence or tourism industry; or as to the human qualities of being true to one's self or true to one's fundamental existence. Wang (1996) drew on Heidegger's philosophy and proposed to differentiate between the reality of an object, its authenticity as perception and its definition of "existential authenticity" as well as the interpersonal and the intrapersonal origins of authentic perceptions of the travelers. The value of Authenticity in the restoration of historic buildings is the product of international conventions.

Table 1 Authenticity in the view of international conventions (Author).

The event			
Time	Convention name	Main content	Place
1964	The Venice Charter	- Historic values as the concept of authenticity - Expansion of the conservation scope from one building to surrounding space indicating the concept of integrity	Italy
1978	The First Session of the World Heritage Committee in Paris	- Authenticity based on the four criterions of design, material, workmanship, and setting	France
1994	The Nara Charter	- Authenticity based on tangible and intangible expressions - Authenticity as the key factor in determining value	Japan
1998	The San Antonio Declaration	- Assessment of authenticity based on reflection of the true value, integrity, context, identity, and use and function. Emphasizing on the authenticity of cultural landscape and its significance in conservation	The United States
1987	The Stockholm Declaration	- Respecting authenticity and cultural diversity of communities.	Sweden
1999	The Burra Charter	- Conservation of natural and cultural significance of heritage - Introducing cultural significance as aesthetic, historic, scientific, social and spiritual value for all generations.	Australia
2000	The Zimbabwe Expert Meeting	- Authenticity in African context - The importance of intangible authenticity specifically management system	Sothern Africa

2003	Convention for the Safeguarding of the Intangible Heritage	- The importance of recognition and conservation of intangible heritage	France
2004	The International Declaration of Bam	- The importance of authenticity and integrity in conservation of Bam Cultural Landscape.	Iran
2005	The International Declaration of Seoul	- The conservation of authenticity in historic environments	Korea
2005	Vienna Memorandum on 'World Heritage and Contemporary Architecture Managing the Historic Urban Landscape'	- The importance of authenticity and integrity in well-balanced approaches of conversation in the management system of Historic Urban Landscape	Austria
2006	The International Declaration of Jerusalem	- The values of tangible and intangible heritage - The significance of 'Sense of Place' in conservation process;	Israel
2011	ICOMOS Charter on the Preservation of the Spirit of Place (Quebec Charter)	- The values of tangible and intangible heritage - The role of historical-evidential, aesthetic and socio-cultural values in authenticity. - The relationship between authenticity and aesthetic, historical-evidential and social-cultural values - The role of authenticity and integrity in controlling the effects of development	Canada
2011	UNESCO Draft Recommendation on Historic Urban Landscape	- The significance of authenticity in conservation of urban landscape	

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The practice of adaptive reuse In Yemen

The residents of the old town of Sana'a use the sustainable reuse strategies to include places and construction materials. In the great Mosque of the old town Sana'a there were architectural, shafts, facts and columns from the existing heritage building (Lewcock, 1986; Shabbir et al., 2019). UNESCO has guided Yemeni government to create the General Organization to Conserve Older Sana'a in 1984, because of its international conservation. The principal role was to examine the origin and the explanation of the house of Sana'a's old town. From 1987, all ancient Yemeni cities were protected by this lens (GOPHCY).

With the assistance of UNESCO and UNDP, the conservation of the Old Town of Sana'a has been the object of GOPHCY, whose aim has been to construct risky buildings in to private sector homes, hotels or private construction houses An international organisation, collaborating with the local government, started the adaptive reuse campaign to support the artisanal art of the Caravanserai (Samsara) Al-Mansorah, which was turned into a craft store (Petzet, 1995; Shabbir et al., 2019). Throughout the historic centre, the sustainable reuse trend has extended to the private owners without much thought in terms of restoration or adaptation. Most random building and service modernization was carried out (UNESCO, 2008).

The adaptive reuse programs on the whole, has enhanced culture and society as well as urban facilities, but the adaptive reuse has been randomly carried out mostly for private ownership, in order to upgrade their profits owing to an economic downturn impacting the income of the shareholders.
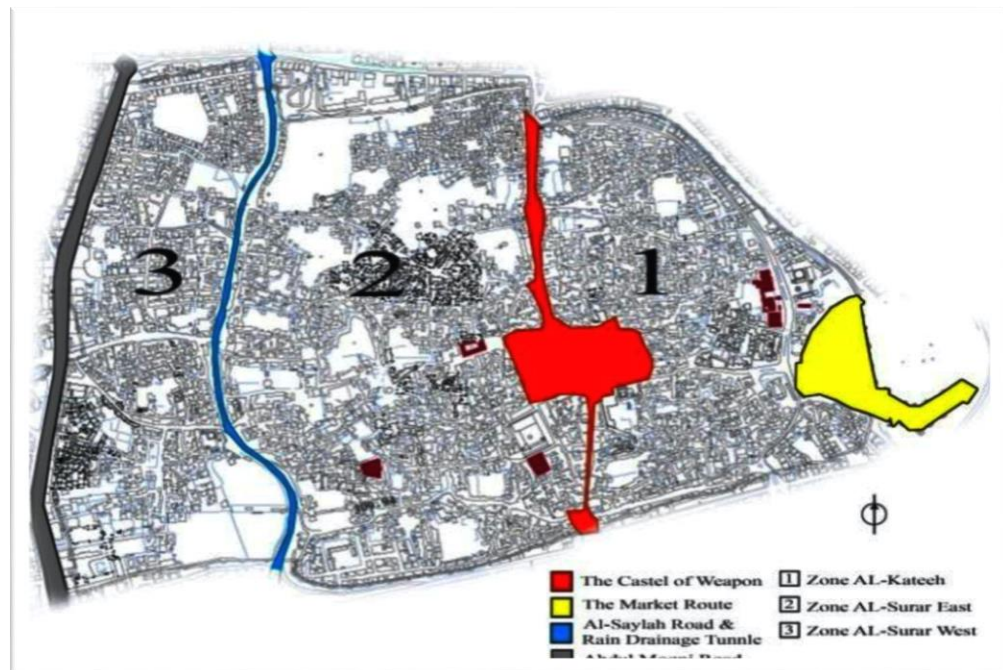
Historical background of traditional neighbourhood (HARA)

Sana's Old Town comprises of two major commercial and residential sections. The business area is a path that links shops to markets (Souq). It begins at Bab El-Yemen's main gate and enters the other end of the Bab-Shub town gate. The residential area comprises of three regions, respectively from west to east. Which ends at Abdul Mogni street. Each zone will differ in the number of quarters as shown in Figure1.
(1)Al-Kateh near the Palace of Weapon,
(2)Al-Surar East located on the west side of the city center market (Souq),
(3)Al-Surar West located on the west side of the rain drainage tunnel (Sailah)

The key component of urban formation is the traditional city (Hara). The old city of Sana'a has about 61 communities (hara). Bustan Al-Sultan, Al-Fulayhy, Al-Elmy, Al-Madrasah and Al-Tabri are among the largest. Muteer, Zabarah, Al-Maftoon and Al-Hasosah were the least of them (L. A. Haidar & Talib, 2018). The name of the community is chosen from the oldest mosque or the name of the esteemed person, based on the prestige of the business and/or the respected house within its community.

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A quarter part of the project consists of: (a) Housing Agency, (b) Mosque, (c) Open Room (Surha) (d) Water Fountain(Al-Sabil), (e) Fountain Fruit and Garden Vegetable (Megshamah) (f) and Hot Bath (Hamam) (Figure 2); People from other communities could share public facilities buildings even if they don't belong to that city. These experiences among the city's citizens have created social ties and helped eliminate social classifications and tribalism through the integration phase.

Figure1. The Old city of Sana'a Boundaries
Source: Adopted from Organization of Islamic Capitals and Cities. (2005)

Fig. 2. The prototype of quarter component

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Challenges for adaptive reuse and authenticity in sana'a heritage sites

The General Organisation for the Protection of Yemen's Ancient Cities and Antiquities (GOPHCY) was primarily responsible for the Yemeni mission. It was founded in the 1980s in order to preserve the old town of Sana'a as a UNESCO World heritage in 1984. GOPHCY offers four forms of restoration; wall clamping or advertisement removal, rehabilitation and restoration (L. A. Haidar & Talib, 2018; Shabbir et al., 2019). Furthermore, there are no conservation guidelines. However, all conservation work has stopped and GOPHCY does not have the resources to do any conservation work in Sana's old town. While heritage organisations have condemned the destruction of Sana'a and its valuable cultural sites, major measures must still be undertaken in order to reduce further destruction.

Currently, a conservation plan for Sana'a under UNESCO's policy is expected by the Yemeni government. Post-adaptation assessments are necessary to determine to what extent Islamic architectural heritage requirements have been met in Yemen and the objectives of adaptive reuse and to understand why problems exist (Aydın, Yaldız, & Sıramkaya, 2015; Hail Hakimi, Alaug, Kassim et al., 2019; Usak et al., 2019; Afify, El Nady, & Lashin, 2019). Hence a thorough evaluation process is necessary. Such an evaluation process is essential in order to inform law and policy making and to develop strategies for future adaptation projects. Due to contemporary social changes and improper development, the authenticity of the property has been destroyed. The effects of the recent worsening political, socio-economic and security situation have also worsened the preservation situation Combined with the progressive change and the deteriorating security of the property, a major threat to the property outstanding value (OUV).
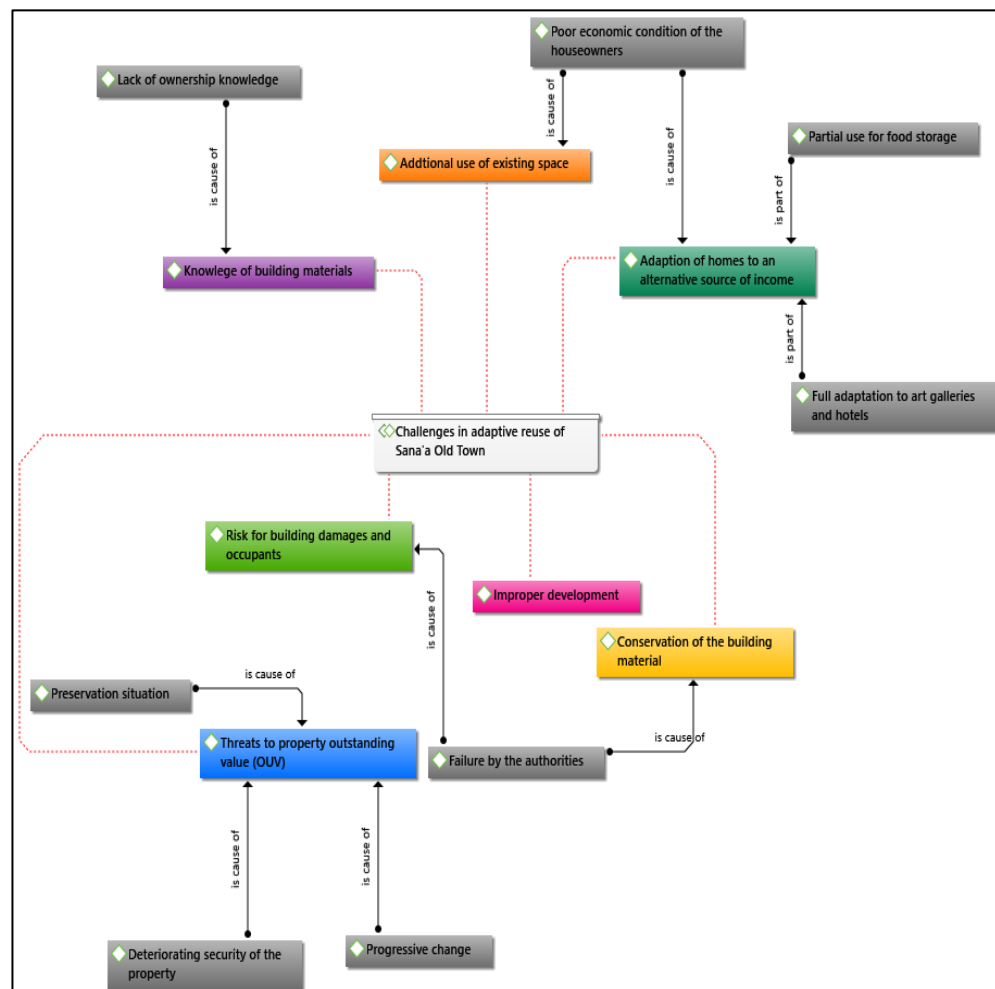
In the residential area of Sana'a Old Town, adaptive reuse is becoming very frequent. The 2008 inventory study by UNESCO has shown an increase in the rehabilitation of buildings which modified urban fabric in the residential area of households (UNESCO 2008). Private investors or owners set up numerous projects with a high level of intervention on the layout of space and the existing material.

As a result of the frequent civil war and weak economy, the owners have adapted their homes to an alternative source of income in whole or in part (Serageldin, 1982). The choice of new function is entirely based on the decision of the owner: partial use as food and food storage of the original rooms in the basement as food stores and foodstuffs, and full adaptation to art galleries and hotels (L. Haidar & Talib, 2015; Noreen et al., 2019; Shabbir et al., 2019). Their functions are based on the choice of their ownership. Any additional use of any existing space to generate revenue is the result of the poor economic condition of the house owners.

In most cases, construction work is started without consulting or approving the Building Area experts or architects (Adams, 1983). A major problem is the

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lack of ownership knowledge of the limitations for modification applicable to the building fabric which is associated with the need for intervention in the existing tower houses. Failure by the authorities to monitor the conservation of the building material also contributes to damage which can also pose a risk to the occupants. If the problem is viewed, improper evaluation guidelines among stakeholders may be difficult. The local authority obviously has to take action to ensure that a proper assessment of authenticity is carried out in adaptive reuse. Figure 3 highlights the important challenges discussed above.

Figure 3: Challenges in Adaptive Reuse
Source: Author

Therefore, it is vital to consider how to develop the assessment in authenticity of adaptive reuse to make sure that the stakeholder able to follow the guideline without overlooking the authenticity although need to change the building function in heritage buildings. This research's aim is to evaluate the potential of adaptive reuse in sustaining the authenticity of facade in traditional neighbourhood (Tower Houses) (Hara).

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Restoration strategies and its outcomes

Adaptive reuse is one of the restoration strategies that can maintain and replace historical structures with the current trends (Bertolini, Carsana, Gastaldi, Lollini, & Redaelli, 2011; Shabbir et al., 2020). The reuse of heritage buildings enables future generation to appreciate the identity of the building (Burke, 2007) as the heritage buildings represents unique architectural, aesthetic, political and social features of a different time (Rashid, 2016). The best way to maintain the minimal loss of the authenticity of heritage buildings and contribute significantly to the control of environmental burdens is therefore to apply adaptive reuse properly. However, this strategy was recently criticised for sacrificing authenticity with the willingness of the owner and municipal government to adopt the adaptive reuse approach in historic (Adams, 1983; Alivizatou, 2012; Bertolini et al., 2011; Burke, 2007; Foster, 2020) of the heritage buildings.

The authenticity of the construction needs can be undermined by the adaptive reuse of historic structures (Aydin &Yaldiz, 2015). The importance of the research is therefore to establish a method based for adaptive reuse focused on the concept of authenticity in conservation, thereby increasing the authenticity percentage and raising knowledge in the area.

This research is expected to give a contribution in providing data in understanding the practices of adaptive reuse of tower houses in Hara in old Sana'a, Yemen and its impacts toward Authentic value. Further, this study contributes to the ration of intervention when it comes to use adaptive reuse to preserve the authenticity of historical buildings in old Sana'a which will benefits the policy maker, urban planners, architects, building conservators in future conservation toward authenticity.

RECOMMENDATION FOR FUTURE PROSPECT
Although old Sana'a have been recognized by UNESCO World Heritage Convention as UNESCO World Heritage Site after evaluated by the World Heritage Committee on 2008, there are still lack of researches or studies on old Sana'a, especially the research on adaptive reuse of Tower houses in Hara. Hence, it is recommended to study the authentic value of tower house in old Sana'a. It is further motivated to evaluate the existing building conditions after applying adaptive reuse, degree of intervention on the original facade of tower houses in old Sana'a and to find the correlation between adaptive reuse and authenticity of the façade in the tower houses in old Sana'a.

REFERENCES
Adams, K. B. (1983). Maryland Heritage: A Family History: KB Adams.
Akasah, Z. A., Abdul, R. M. A., & Zuraidi, S. N. F. (2011). Maintenance management success factors for heritage building: A framework. WIT Transactions on the Built Environment. https://doi.org/10.2495/STR110541
Alivizatou, M. (2012). The paradoxes of intangible heritage. In (pp. 9-21): The Boydell Press: Woodbridge, UK.

Aydın, D., Yaldız, E., & Sıramkaya, S. B. (2015). EVALUATION OF
        DOMESTIC ARCHITECTURE VIA THE CONTEXT OF
        SUSTAINABILITY: Cases from Konya City Center. ArchNet-IJAR,
        9(1).

Bertolini, L., Carsana, M., Gastaldi, M., Lollini, F., & Redaelli, E. (2011).
        Corrosion assessment and restoration strategies of reinforced concrete
        buildings of the cultural heritage. Materials and corrosion, 62(2), 146-
        154.

Burke, S. (2007). ICOMOS: Twentieth Century Heritage International
        Scientific Committee. Journal of architectural conservation, 13(2),
        143-150.

Charter, V. (1964). International charter for the conservation and restoration of
        monuments and sites. Paper presented at the IInd International
        Congress of Architects and Technicians of Historic Monuments,
        Venice.

Douglas, J. (2006). Building adaptation. Routledge.

Foster, G. (2020). Circular economy strategies for adaptive reuse of cultural
        heritage buildings to reduce environmental impacts. Resources,
        Conservation and Recycling, 152, 104507.

Haidar, L., & Talib, A. (2015). Adaptive reuse practice in tower houses of old
        city Sana'a Yemen. Procedia-Social and Behavioral Sciences, 202,
        351-360.

Haidar, L. A., & Talib, A. (2018). Traditional Neighborhood Adaptive Reuse
        in the Old City Sana'a, Yemen. Asian Journal of Environment-
        Behaviour Studies, 3(10), 187-197.

Hail Hakimi, M., Alaug, A. S., Afify, W. E., El Nady, M. M., & Lashin, A. A.
        (2019). Investigating gas resource potentiality from Late Jurassic
        Madbi Formation in the NW–Say'Un-Masila Basin, Eastern Yemen.
        Petroleum Science and Technology, 37(12), 1355-1362.

Harun, S. N. (2011). Heritage building conservation in Malaysia: Experience
        and   challenges.   Procedia   Engineering.
        https://doi.org/10.1016/j.proeng.2011.11.137

Ismail, W. H. W. (2013). Preservation and Recycling of Heritage Buildings in
        Malacca.   Procedia   -   Social   and   Behavioral   Sciences.
        https://doi.org/10.1016/j.sbspro.2013.08.386

Kassim, Normalini & Ramayah, T. & Shabbir, M. S. (2019). Investigating the
        Impact of Security Factors In E-business and Internet Banking Usage
        Intention among Malaysians. Industrial Engineering & Management
        Systems. 18. 501-510. 10.7232/iems.2019.18.3.501.

Lewcock, R. (1986). Wadi Hadramawt and the walled city of Shibam.

Mısırlısoy, D., & Günçe, K. (2016). Adaptive reuse strategies for heritage
        buildings: A holistic approach. Sustainable Cities and Society, 26, 91-
        98.

Noreen, Tayyba & Abbas, Mazhar & Muhammad, Shabbir, M. S., Muhammad
        & Al-Ghazali, Basheer. (2019). Ascendancy Of Financial Education
        To Escalate Financial Capability Of Young Adults: Case Of Punjab,
        Pakistan. 10. 1-11. 10.14456/ITJEMAST.2019.200.

Petzet, M. (1995). Die Restaurierung der Samsarat al-Mansurah als Beispiel
        internationaler Zusammenarbeit zur Rettung der Altstadt von Sana'a.
        ICOMOS–Hefte des Deutschen Nationalkomitees, 15, 9-17.

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Plevoets, B., & Sowińska-Heim, J. (2018). Community initiatives as a catalyst for regeneration of heritage sites: Vernacular transformation and its influence on the formal adaptive reuse practice. Cities. https://doi.org/10.1016/j.cities.2018.02.007

Rashid, R. (2016). Preserving Our Heritage. New straits times.

Shabbir, M. S., Shahid, K. (2019). Polish Journal Of Management Studies Holistic Human Resource Development Model In Health Sector: A Phenomenological Approach. Polish Journal of Management Studies. 20. 44-53. 10.17512/pjms.2019.20.1.04.

Shabbir, M. S., Siddiqi, A., Muhammad & Khalid, Faiza & Salman, Rabia & Farooq, Muhammad. (2019). A short comment on the use of R 2 adj in Social Science-7907. 1. 24-31.

Shabbir, M. S., Muhammad & Kassim, Normalini. (2019). Entrepreneur as an Individual Review of Recent Literature on Entrepreneurial Skills. Opcion. 35. 582-599.

Shabbir, M. S. (2019). Investment-Cash Flow Sensitivity in Family Owned Pakistani Firms. 8. 376-386.

Shabbir, Muhammad & Bait, Mohammed & Sulaiman, Ali & Al-Kumaim, Nabil & Mahmood, Arshad & Abbas, Mazhar. (2020). Green Marketing Approaches and Their Impact on Consumer Behavior towards the Environment-A Study from the UAE. Sustainability. 10.3390/su12218977.

Usak, Muhammad & Kubiatko, Milan & Shabbir, M. S., &Dudnik, Olesya & Jermsittiparsert, Kittisak & Rajabion, Lila. (2019). Health care service delivery based on the Internet of things: A systematic and comprehensive study. International Journal of Communication Systems. 33. 10.1002/dac.4179.

Wang, X. (1996). A View from Within: A Case Study of Chinese Heritage Community Language Schools in the United States: ERIC.

Shehata, W. T. A., Moustafa, Y., Sherif, L., & Botros, A. (2015). Towards the comprehensive and systematic assessment of the adaptive reuse of Islamic architectural heritage in Cairo: A conceptual framework. Journal of Cultural Heritage Management and Sustainable Development. https://doi.org/10.1108/JCHMSD-02-2014-0003

Shen, L., & Langston, C. (2010). Adaptive reuse potential. Facilities.

Tikhonova, O., & Alho, C. (2015). Authenticity criteria in castles of Ivano-Frankivsk Region. European Scientific Journal.