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### **External Knowledge Management in the Context of Architectural Conservation Organization**

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#### **ABSTRACT**

It is common in architectural conservation organizations that some conservation knowledge is not frequently provided. This calls for the necessity to access external sources of knowledge. This paper aims to investigate the current situation of managing the external knowledge in the context of the Management of Historical Cities Bureau in Tripoli, Libya, in order to develop a theoretical framework that can function as a procedural guide for acquiring external knowledge in such organizations. Qualitative research for collecting and analyzing data was adopted. Multiple methods were used for collecting data, including interviews, observations, and a review of organizational documents. The findings demonstrated that there is insufficient information regarding local experts and current interaction with consultants is based on an ad hoc method that does not ensure that technical experts respond in a timely manner. Also, there is insufficient knowledge exchange with relevant local organizations. Furthermore, legal, and political reasons obstructed the process of acquiring knowledge from foreign organizations. Finally, this research and the proposed framework for acquiring external knowledge in architectural conservation organizations provide a base reference for similar organizations in developing countries that intend to manage external knowledge that contributes to the process of conserving historic buildings and improving their performance.

#### Keywords:

Knowledge Management; Historic Buildings; Architectural Conservation; Organizations; Libya.

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### 1. INTRODUCTION

Historic buildings (HBs) have cultural values that are regarded as a national heritage for the cities and should therefore be maintained for future generations to reveal history and reflect the time periods that these buildings witnessed [1]. The management of HBs is a continual process that is predominantly conducted by responsible governmental organizations that are not-for-profit and non-competitive. In 1986 the Libyan government established the Management of Historical Cities Bureau (MHCB) in Tripoli, Libya, whose mission involved the conservation of HBs in the city of Tripoli [2]. In order to complete its mission, this organization deals with different types of knowledge: assessing and documenting the cultural value of historic buildings, technical knowledge for assessing the condition and to decide the required intervention in HBs and management knowledge. These aspects of knowledge are not frequently provided in the MHCB. This calls for the necessity to access external sources of knowledge. The specialists in the field of HBs conservation, Dann and Wood stated that "There should be an understanding of the limits of specialist knowledge within the organization" [3]. Also, Al-Allaf stated regarding information management in conservation organizations that "the local institutions are still far from the level of ambition supposed to reach it"

This paper aims to investigate the current situation of how external knowledge sources are managed in the MHCB, in order to develop a theoretical model work as procedural guide on how to acquire external knowledge for architectural conservation organizations in developing countries. The importance of this research resides in covering the gap of studying managing external knowledge in architectural conservation. Also, it guides the architectural conservation organizations in developing countries, towards acquiring proper external knowledge in proper time and cost.

#### 2. LITERATURE REVIEW

#### 2.1. Previous studies

Knowledge management (KM) can be defined as: "the management processes that enable organizations to identify available and required knowledge, capture and share it for effective use to achieve organizational objectives and create new knowledge" [5]. In the field of architectural conservation, the concept of KM was mostly studied recently. Chutinan in 2008 developed an integrated plan with a secondary general part for KM to optimize the structure of the organization that is responsible for the effective promotion of heritage property [6]. Also, Taghizadeh et al. in 2014 developed an applicable model for knowledge management implementation that works suitably in organizations involved in projects defined for a historic building [7]. Furthermore, Al-Allaf in 2014 studied digital information system for managing the heritage and historical properties [4]. Moreover, Tarhuni and Kamara in 2021 investigated the key factors that affect the management of knowledge and proposed a model for studying and understanding KM in architectural conservation organization [8].

All previous studies concentrated on managing knowledge of architectural conservation organization or projects without deep study on managing external knowledge. It is rare to find research that covers the two aspects (managing external knowledge & architectural conservation) together. Some authors studied the part related to acquiring foreign experiences such as, Farhan et al. who studied acquiring technical experiences from relevant foreign conservation organizations and projects [9].

#### 2.2. The knowledge sources for organizations

Knowledge sources for organizations can be classified according to their form or location.

### 2.2.1. Knowledge sources according to their form

The knowledge that is managed in organizations includes both tacit (subjective) and explicit (documented) knowledge [10].

The source of tacit knowledge is individuals, who are senior employees in the organization and other specialists. Tsoukas stated that "individual human agents have their own unique mental representation of the world" [11]. Also, Rowley stated that "Knowledge resides with individuals and may largely derive from experience. This embedded knowledge will only

be drawn out if those individuals reflect on, and are convinced by, the fact that they need to share their knowledge" [10]. In the field of architectural conservation, individuals such as experts and those with vast experience who have worked with and are interested in HBs conservation are sources of tacit knowledge. For instance, they have the capability to provide quick solutions to problems [12].

Furthermore, explicit knowledge is "knowledge that can be captured and written down in documents or databases". [13]. For instance, in the field of architectural conservation, technical and culture values studies, in addition to regulations, are documents that include explicit knowledge regarding HBs and their conservation in written or digital forms. These documents contribute to maintaining and disseminating knowledge among generations of relevant people in the field of architectural conservation [12].

Moreover, according to Mansfield, the products and services of an organization include the organization's knowledge [14]. Regarding the processes, Rowley mentioned that "the delivery of the business activities and processes of the organization, in addition to research and development activities, create knowledge" [10]. In the field of HBs conservation, a "structure can be read as historic evidence just like written documents and can aid the understanding of past conditions and of how society changes" [15]. In terms of historic buildings conservation processes, the current and previous conservation works are sources of lessons learned and knowledge that are essential for future conservation work in HBs [12].

Based on previous explanations of several scholars [10], [12], [13], [14], [15] knowledge sources in the organizational context can be categorized according to their form into individuals, documents and an organization's products or work processes (Figure 1).

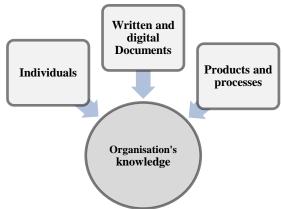


Fig. 1: Sources of knowledge in organizations according to their form

location

According to their location, knowledge sources are internal or external. Both are crucial for an organization's continuation. Goodman and Andrews stated that, organizational learning processes include sharing internal knowledge and adopting knowledge in terms of importing knowledge from an external source [16], [17]. Tarhuni [12] stated that, internal knowledge resides in individuals' minds, documents, and organizational processes or products inside organizations, whereas external knowledge is located outside the organization and might be in

local organizations or foreign/ international

organizations and experts who may or may not

belong to these organizations (Figure 2).

2.2.2. Knowledge sources according to their



Fig. 2: External knowledge sources for organizations

There are opportunities for acquiring or exchanging knowledge from individuals in agreement with their institutions. As Davenport and Prusak stated that "Fusion is knowledge created by bringing together people with different perspectives to work on the same project. The resulting projects represent more comprehensive expertise than possible if members of the team represented one perspective" [18].

Regarding the acquisition of foreign knowledge, Farhan et al. stated that international experiences and studies increase "awareness and understanding of the correct methods of dealing with and conserving historical buildings. That includes cooperation with international organizations in providing international expertise to identify the best means of rehabilitation" [9].

Knowledge acquisition is associated with "the contracting of knowledge from outside the company. This may includes the appointment of people, the purchase of reports or licenses, or the strategic alliances that involve the exchange of knowledge and competence" [10]. External knowledge is more difficult and expensive to obtain." [19] and requires "appropriate

outsourcing policies" [3]. Also, according to Egbu and Robinson "external knowledge sharing poses greater risks than internal sharing-rising complex issues, such as confidentiality, reliability, and copyright" [20]. However, regarding originality of external knowledge Davenport and Prusak noted that "originality is less important than usefulness in acquired knowledge" Furthermore, commercial or competition issues are not knowledge management advantages for HB conservation organizations; the advantages are mainly cultural [8]. Moreover, the value of architectural heritage transcends national boundaries, as evidenced by international heritage charters that emphasize the dissemination of knowledge [21].

## 2.3. Techniques and technologies for acquiring external knowledge

#### 2.3.1. Techniques

Facilitating the processes of acquiring external knowledge can be achieved through several techniques that have various features, such as greater focus on tacit knowledge and more involvement of people, being affordable to most organizations, and being easy to implement and maintain [19]. The main techniques regarding the acquisition of external knowledge that were mentioned by Rowley [10], Al-Ghassani et al. [19] and Murthy and Panchal [13] include training, presentations and recruitment.

Training could be defined as a technique that helps to improve staff skills and therefore increase knowledge [22]. Regarding training, Al-Ghassani et al. stated that:

"Its implementation depends on plans and strategies developed by the organization to ensure that employees' knowledge is continuously updated. Training usually takes a formal format and can be internal, [....] or external, where employees attend courses managed by professional organizations" [19].

In the field of HB conservation, training is complementary to education, undertaken conservators to become a professional and lead to the acquisition of conservation theory and practice knowledge, skills, and competencies [23]. Visiting sites and observing the work of craftspeople can be considered as a training that contributes with acquiring practical knowledge. For instance, the international center for the study of the preservation and restoration of cultural property (ICCROM) organizes regular architectural conservation courses. This organization provides visits to similar restoration projects in the countries in which these training courses are conducted [24].

Furthermore, presentations in forms of seminars or lectures in organizations or

conferences are techniques for transferring knowledge to attendees. ICA stated that presentations often short and include visual aids. They provide the opportunity for discussing cases and specific subjects in addition to lessons learned [25]. Also, knowledge could be transferred from seniors to others through storytelling (a type of lectures), which "can be used to create a good knowledge and judgment of personnel descriptive capability to do things effectively and skillfully in organizations" [26]. Moreover. attending conferences is a technique for exchanging knowledge, helps young researchers to develop their research work and skills and, provides a platform for networking among seniors [26].

This is supported by WABER, who stated that conferences help young researchers to develop their research work and skills through constructive face-to-face interaction with experienced academics and provide a platform for networking among seniors [27]. In the field of architectural conservation, conferences aim to generate conversation between conservators, theorists, practitioners, and historians [12].

Moreover, recruitment is a "method for acquiring external tacit knowledge, especially of experts, other employees can learn from the new recruits" [22]. One recruitment strategy involves: "Making knowledge requests of experts associated with a particular subject on an ad hoc basis. In such an instance, expert individual(s) can provide their insights to the particular person or people needing this" [28]. Also, it could be aimed at mentoring junior employees. The wider literature has identified and presented the importance of monitoring techniques for transferring knowledge. For instance, Al-Ghassani et al. stated that mentoring is a "process where a trainee or junior member of staff is attached or assigned to a senior member of an organization for advice related to career development" [19].

#### 2.3.2. Technologies

Information technology (IT) could be defined as "the use of electronic machines and programs for the processing, storage, transfer, and presentation of information" [29]. However, information communication technology (ICT) is the correct term for describing the technology that could be used for managing knowledge as Das (2019) stated that ICT stands for information and communication technologies and defined it as a "diverse set technological tools and resources used to communicate, and to create, disseminate, store, and manage information" [30].

Telecommunication tools enable people to communicate and exchange knowledge [22]. It

is considered as an enabler of knowledge sharing [13]. Scarbrough et al. [31], Gyampoh [32], Snowden [26], Sun and Howard [33] and Lucey [34] agreed that ICT became a main tool for managing external knowledge.

The selection of the most suitable ICT depends on the type of knowledge. For instance, "data mining technologies are suitable for searching within explicit knowledge, whilst expert system technologies are used for converting tacit knowledge to explicit" [19]. Also, ICT should "promote efficient capture of explicit knowledge and support knowledge sharing within and outside the organization by developing processes and systems that are easy to use." [35].

Finally, applying ICT for managing knowledge in organizations can be concluded in three main objectives:

- Facilitating processes of dealing with knowledge in organizations, and offering data/knowledge base [36].
- Supporting access to existing information and explicit knowledge) [19].
- Supporting people-based knowledge activities (linking of source and recipient of knowledge) [36].

#### 3. METHODOLOGY

This paper aims to investigate the current situation of dealing with external knowledge in the Management of Historical Cities Bureau (MHCB) in Tripoli, Libya, in order to develop a theoretical model for the acquisition of external knowledge. The research methodology for this research is based on interviews, observations, and the review of organizational documents.

Ten interviews with employees and others (their work relevant to HBs conservation) were conducted. Five of the interviewees were MHCB's employees in different levels in addition to two ex-technical employees. The remaining three interviewees were: a faculty member (consultant at the MHCB), the coordinator of the national Libyan group for protecting architectural heritage and a local contractor. Interviews with employees and the MHCB's consultant were conducted at the MHCB's head quarter with average 30 minutes each. The other interviewees were contacted in their work, after on-line contact via social media for managing an interview meeting. The semi-structured questions of the interviews concentrated on the need for external knowledge and how knowledge is acquired from outside the MHCB that helped them to perform their work. Also, what constrains faced this process in addition to questions about techniques

and technologies for acquiring and managing external knowledge.

Moreover, observations in the MHCB and its context were conducted. Also, the organizational documents, particularly, which include rules and governmental decisions, were reviewed.

#### 4. RESULTS AND DISCUSSIONS

#### 4.1. External knowledge sources

As mentioned in section 2.2.2, the sources of external knowledge according to their location are local experts, relevant local organizations and relevant foreign and international institutions.

#### 4.1.1. Local experts

The local experts (who may or may not belong to organization or consultant office) could be categorized as consultants, expert craftspeople, and senior previous employees. In the MHCB context, there is insufficient available information about the local experts who have knowledge regarding HBs conservation. They are scattered and there is no database of their CVs and contact details available. Most interviewees considered the consultants in the field of HB conservation to be a key source of knowledge. In the case of problems, technical employees often depended on themselves to identify and contact them informally. Current dealing with them in the MHCB is based on an ad hoc method which does not ensure timely responses from technical experts.

Also, the expert builders and craftspeople who apply traditional methods and materials in the field of conservation were considered by some interviewees as a source of knowledge according to their experiences, but their knowledge should be documented and explained scientifically. However, they are now very rare because of the age factor; some of them have transferred their career onto their sons. Furthermore, the author met some architects (interviewees) who had worked in the MHCB. It was noticed that their interest in HBs and their conservation remains active, and they were willing to provide their knowledge. For instance, some of them were members of the national group for protecting HBs.

The question was asked regarding how it is possible to benefit from experts? Some interviewees mentioned that the MHCB should recruit specialized experts, particularly for technical support, and should also invite them to produce lectures in addition to training. However, no criteria for hiring experts have been applied in the MHCB that ensure the response of experts and that they provide their services on time.

From a legal perspective, the MHCB's policies and local regulations do not prevent

establishing contracts with consultants. For instance, Article 3.17 of governmental decision number 125 regarding establishing the MHCB states that the MHCB can use individuals and consultancy institutions that have experience in the field of HB conservation [2].

#### 4.1.2. Relevant local institution

Some university faculties (architecture, civil engineering, fine arts, archeology, tourism, and historical studies departments), research institutions, archeology departments, and local scientific societies were mentioned interviewees as potential sources of knowledge (experts and documents) in the field of HBs conservation. For instance, some traditional courses in faculties of architecture help in the field of HB conservation, such as architectural restoration, history of architecture, Islamic architecture, and local architecture in addition to research that focuses on historic buildings prepared by postgraduate students. However, although the Libyan Governmental Decision number 125 regarding establishing the MHCB support co-operation with local organizations [2], there is no official co-operation with these institutions in the MHCB.

In addition to acquiring knowledge through relevant documents from relevant local institutions, knowledge can be exchanged by individuals from different organizations in agreement with their institutions, this will fuse the knowledge of individuals from different organizations [18]. Furthermore, the cooperation with local relevant organizations can contribute to the exchange of knowledge and the provision of publications, training courses and consultants in some fields of architectural conservation, in addition to collaboration in organizing symposia on special topics.

#### 4.1.3. Foreign and international organizations

Insufficient benefit from the international organizations and the experiences of other countries in the field of HB conservation were mentioned by many interviewees in the MHCB. This can be attributed to the Libyan governmental decision number 125 regarding establishing the MHCB which stated that "the MHCB [as a governmental organization] has to deal with the Ministry of Foreign Affairs as a mediator for any cooperation with foreign organizations" [2]. Indirect contact presented a constraint faced the **MHCB** when dealing with international organizations. Also, there are complex procedures for foreign training. However, despite these obstacles, the existence of some governmental decisions provides a base for appropriate outsourcing of policies to ensure that the organization has the required knowledge available.

Furthermore, the international heritage charters call for the dissemination of conservation knowledge [21]. This can facilitate the acquisition of knowledge from such organizations for countries that are members of these institutions. Regarding this subject Farhan et al. recommended taking advantage of important international experiences and studies to increase understanding of the correct methods of architectural conservation [9]. The opportunities for acquiring international knowledge from heritage organizations could include subscribing to their publications, attending conferences, training courses, and visits to heritage sites under restoration. Also, conferences can be arranged locally under the auspices of international institutions such as UNESCO; this will encourage the international specialists in this field to share their knowledge in such conferences. Moreover, consultations can be taken from the experts that are relevant to international institutions.

### 4.2. The extent of applying knowledge management techniques in the MHCB

Regarding the development of human resources' knowledge and skills in the MHCB, the article 3.7 of decision number 125 states that one of the MHCB's tasks is to contribute to the development of national skills in the field of conservation and the development of historic cities and buildings [2]. Also, it is responsible for preparing and conducting workshops and training courses for art crafts, technicians, engineers, architects, and owners in the field of HB conservation. However, according to numerous interviewees, external training, presentations, and recruitment techniques have not attracted sufficient interest in the MHCB.

The constraints faced in terms of training at the MHCB are that training courses are not programmed; there are limited local training courses in the field of HB conservation, and the training section suffers from a lack of knowledge regarding the details of required training courses and who provides them. The situation of insufficient training contradicts the conservation literature, which emphasizes that training is the complement of education and staff should be suitably trained [23]. Specialized conservation training courses are available internationally specifically, for who want to develop key practical knowledge and skills in the practice of conservation architecture. These courses are open to participants such as mid-career professionals and other decision makers in conservation from different disciplines, including

architects, archaeologists, engineers, planners, and site managers [24]. For instance, the ICCROM organizes regular architectural conservation courses, including visits to similar restoration projects [24]. However, the MHCB's technical staff has not benefited from such courses because of the local policies due to the complex procedures and lack of budget for foreign training courses.

Another technique for acquiring knowledge is presentations. The unique aspect in the field of heritage conservation is that interested people who know about HBs, local specialists, including architects and engineers who have left the MHCB after significant years of practice, are often willing to share their knowledge regarding the HBs, particularly older people. This is also the situation for civil society groups interested in architectural heritage. However, these specialists were rarely invited to attend and produce presentations or lectures in the MHCB. Also, few presentations or lectures have been conducted and only a limited number of specialized people attended and shared in the discussions. This contradicts the wider literature that presents the importance of lectures and presentation techniques for transferring knowledge [25], [26]. These activities provide the opportunity to discuss specific cases and subjects in addition to lessons learned [25]. The opportunity to practice such activities to collaborate with those who have the willingness to share their knowledge could be achieved through, for instance, inviting them to attend and/or provide lectures, mentoring junior employees and providing training courses in the MHCB.

Moreover, regarding organizing and attending conferences, although Libyan governmental decision number 125 regarding the establishment of the MHCB [2] supports the development of conservation knowledge in the MHCB through organizing and attending relevant conferences, the findings demonstrate that the MHCB employees attended very few conferences. This can be attributed to the lack of conferences conducted in Libya. Also, most employees are not interested in contributing to the preparation of conference papers.

Finally, recruitment. The current way of dealing with consultants for obtaining their insights on a particular subject in the MHCB is based on an ad hoc method. Although an ad hoc method is a recruitment strategy that can provide experts' knowledge to the particular person or people who require it [28], in the MHCB, this method does not ensure experts respond in a timely manner to solve technical problems. Furthermore, when the MHCB recruiting a specialist in the field

of conservation, its employees do not learn from them. This contradicts wide literature which has identified and presented the importance of monitoring techniques for transferring knowledge in terms of junior member of staff is attached or assigned to a senior member of an organization for advice related to career development [19, 28]. What can be add about this point, there is an opportunity for retired employees or external consultants with knowledge of the internal operations of the MHCB to be hired for this task.

### **4.3.** Information Communication Technologies (ICT) and Their Use at the MHCB

ICT facilities in terms of personal computers and database system, in addition to internet services, are provided in the MHCB. However, the software used mainly consists of general computer programs, which do not contribute effectively to the management of knowledge. Furthermore, the online discussion forum is rarely used and there is limited use of search engines for acquiring HB conservation knowledge. This is attributed to different contexts and the absence of technical support. The use of ICT facilities for managing knowledge in the

MHCB does not sufficiently comply with ICT's role as mentioned in the wider literature that ICT is required for effectively codifying, storing, and retrieving knowledge [5]. Also, ICT supports searching within the explicit knowledge and accessing existing information in addition to supports people-based knowledge activities in terms of linking of source and recipient of knowledge or connecting or directing a user that has a problem or question to knowledge repositories or experts [19], [36].

#### 5. A FRAMEWORK FOR ACQUIRING EXTERNAL KNOWLEDGE IN ARCHITECTURAL CONSERVATION ORGANIZATIONS

In order to support decision making regarding the acquisition of external knowledge in architectural conservation organizations, a framework that is derived from this research is developed. It includes identifying the required external knowledge, exterior knowledge sources, techniques, and technology for acquiring knowledge and capturing knowledge that is acquired.

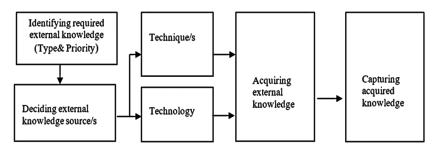


Fig. 3: A framework for acquiring external knowledge in HBs conservation organizations

The process of applying the framework is as follows:

- Identifying the required external knowledge, this process includes:
  - -Identifying the required exterior knowledge
  - -Identifying the knowledge type: HBs values knowledge, HBs conservation technical knowledge, or HBs conservation management knowledge. Also, this section includes a short description of the required work.
  - -Identifying the priority of the knowledge: urgent, necessary, or desirable.
- Identifying the sources of external knowledge in terms of
  - -Individuals, who include: self-employed experts (consultants), local interested people, experts who belong to local organizations and expert who belong to foreign/international organizations.

- -Documents, which include: local libraries/bookshop or online databases, local organizations, and international organizations
- -Processes, which include observing the repair work in: local conservation projects (including observing the work of old expert craftspeople), and similar conservation projects abroad.
- Identifying the proper technique/s for acquiring knowledge which include; training and workshops, lectures, and presentations, hiring and recruitment experts, mentoring juniors, and other techniques.
- Identify the proper information communication technology that can be used for acquiring external knowledge, which includes; searching within explicit knowledge, and/or supporting peoplebased knowledge activities.
- Capturing acquired knowledge in terms of the transfer of external knowledge into explicit shared internal knowledge

Finally, an example of the application of the suggested framework for acquiring urgent

technical external knowledge is illustrated below (Table 1).

Knowledge Type			Priority			Description	Techniques		ICT		
Technical	Management	HBs Values	✓ Urgent	Necessary	Desirable	Identifying the required treatment for a Historic Building under repair.	Training	Presentations	Recruitment	Searching within the explicit knowledge	Supporting people- based knowledge activities
Exterior Knowledge Source	Individuals	Local Self-employed expert						V	√		<b>V</b>
		Expert belong to a local organization						V	√		√
		Expert belong to an international organization									√
	Documents	Local libraries/bookshop or online								√	
		Local organization								√	
		Foreign/ international organisation								√	
	Processes	Local conservation projects						√			
		Foreign conservation projects									

Table 1: Applying the suggested framework for acquiring technical urgent external knowledge

#### 6. CONCLUSIONS

In the field of HB conservation, a diverse range of knowledge is important. External sources cover the shortage of internal knowledge and the international conservation charters call for the dissemination of knowledge. In the MHCB context, there is insufficient information about the local conservation experts and current interaction with consultants is based on an ad hoc method that does not ensure that technical experts respond in a timely manner. Also, there is no real co-operation with relevant local institutions. Moreover, legal reasons hinder direct contact with international institutions. However, the acquisition of external knowledge requires:

- Local regulations should be more flexible regarding contacting foreign organizations.
- Local specialists who are willing to share their knowledge should be invited to provide training courses, lectures, and mentor junior employees.
- To provide criteria for hiring experts.
- Conferences can be conducted in partnership with local universities and relevant organizations under the auspices of international institutions.
- To provide a database for local and international experts includes their experiences and contact details.
- ICT should be provided for facilitating processes of storing, retrieving knowledge, support access to existing information, and linking between source and recipient of knowledge.

Finally, this research covers the shortage of studying external knowledge management in architectural conservation organizations. Also, the proposed framework for acquiring external knowledge provides a base reference for such organizations in developing countries that contributes to improving their performance for conserving historic buildings. The limitation of this paper resides in its reliance on a single case study, which hinders the generalization of results. Further research in similar contexts can contribute to generalizing the results of such studies.

#### **REFERENCES**

- [1] S. Tarhuni "Evaluation of Historic Buildings Reparation in Tripoli, Libya", *Journal of Architectural Engineering*. Vol. 26, Issue 3, pp. 1-7. © 2020 American Society of Civil Engineers, Available at: https://ascelibrary.org/doi/pdf/10.1061/%28ASCE %29AE.1943-5568.0000427
- [2] GPC "Libyan Governmental Decision number 125 regarding establishing the MHCB", Government printers, Tripoli, Libya, 2006
- [3] N. Dann and S. Wood "Tensions and omissions in maintenance management advice for historic buildings", Structural Survey, volume 22, issue 3 pp. 138–147, 2004. Available at: https://doi.org/10.1108/02630800410549035
- [4] E. Al-Allaf "Preventive Conservation as a Procedure for Safeguarding Mosul Built Heritage". Diyala Journal of Engineering Sciences, Vol. 07, No. 02, pp. 89-198, 2014 available at:

- https://www.iasj.net/iasj/download/0be037805ad7dd48
- [5] S. Tarhuni "The Impacts of Technical Employees' Departure on Historic Buildings Organizations' Performance", *Universal Journal of Management*, Vol. 04, issue 6, pp. 367–374, 2016. Available at: http://www.hrpub.org/journals/article\_info.php?ai d=3833
- [6] S. Chutinan, "Cultural heritage interpretation, management, and promotion: phimai historical park," Ph.D. dissertation, Silpakorn University, Bangkok, Thailand, 2008. Available at: https://patricklepetit.jalbum.net/NAKHON%20RA TCHASIMA/LIBRARY/Phimai%20historical%20 park.pdf
- [7] K. Taghizadeh, E. Mokhtari, and M. Sari, "Practical approach to knowledge management implementation in historic buildings restoration," *Management Science Letters 4*, pp. 2555–2570, 2014 available at: https://www.growingscience.com/msl/Vol4/msl\_2 014\_311.pdf
- [8] S. Tarhuni & J. Kamara, "Knowledge Management in Historic Buildings Organisations," the 7th IEC (IEEE) conference in Erbil, KRG, pp. 101-106, 2021 DOI: 10.1109/IEC52205, available at: https://eprints.ncl.ac.uk/file\_store/production/2782 80/055C7586-C7E7-4143-9B0C-62A74AF2DC3A.pdf
- [9] S. Farhan, H Alyasari, H. Samir, S. Zubaidi and K. Hashim, "Conservation Approach as an Architectural Instrument to reviving Historical Cities; technical analysis for multi-international cases," *IOP Conf. Series: Materials Science and Engineering*, volume 1058, 2021. Available at: https://iopscience.iop.org/article/10.1088/1757-899X/1058/1/012071
- [10] J. Rowley "Knowledge management in pursuit of learning: the Learning with Knowledge Cycle", Journal of Information Science, volume 27, issue 4, pp. 227–237, 2001. Available at: https://journals.sagepub.com/doi/10.1177/0165551 50102700406
- [11] H. Tsoukas "The firm as a distributed knowledge system: a constructionist approach", *Strategic Management Journal*, 17, pp. 1-25, 1996. Available at: https://www.jstor.org/stable/2486988
- [12] S. Tarhuni, "An investigation into the management of knowledge in a historic building conservation organisation in Tripoli, Libya," doctorate's dissertation, School of architecture, planning and landscape, Newcastle University, UK, 2013. available at: https://theses.ncl.ac.uk/jspui/bitstream/10443/2314/1/Salem%20Tarhuni%2013.pdf
- [13] G. Murthy and S. Panchal "A presentation on a comprehensive project on knowledge management" 2011. Available at: http://www.scribd.com/doc/74667358/8/the-core-components-of-km#page=35
- [14] E. Mansfield, "How rapidly does new industrial technology leak out?," J. Indust. Econom., volume

- 34, issue 2, pp. 217–223, 1985. Available at: https://doi.org/10.2307/2098683
- [15] L. Wafa "Architectural heritage conservation: the purposes and the principles," *The 1st symposium under title: towards a general strategy of architectural and urban conservation for historical cities in Libya Ghadames- Libya*, 27-29/10/2007.
- [16] P. Goodman, and E. Darr, "Computer-aided systems and communities: mechanisms for organizational learning in distributed environments," *Management Information Systems Quarterly*, volume 22, issue 4, pp. 417–440, 1998. Available at: https://doi.org/10.2307/249550
- [17] K. Andrews and B. Delahye, "Influences on knowledge processes in organizational learning: the psycho-social filter," *Journal of Management Studies*, volume 37, issue 6, pp. 797- 810, 2000. https://doi.org/10.1111/1467-6486.00204
- [18] T. Davenport, and L. Prusak "Working Knowledge: How Organizations Manage What They Know," Boston: Harvard Business School Press, 1998. https://www.researchgate.net/publication/2290999 04\_Working\_Knowledge\_How\_Organizations\_M anage\_What\_They\_Know
- [19] A. Al-Ghassani, C. Anumba, P. Carrilo, and H. Robinson, "Tools and Techniques for Knowledge Management," in J. Chimay and C. Anumba, (ed.) Knowledge management in Construction. Oxford: Blackwell Publishing Ltd, pp. 83–102, 2005. https://onlinelibrary.wiley.com/doi/pdf/10.1002/97 80470759554.fmatter
- [20] C. Egbu and H. Robinson "Construction as a Knowledge-Based Industry," in J. Anumba, C. Egbu and P. Carrillo (ed.) Knowledge management, in Construction. Oxford: Blackwell Publishing Ltd, pp. 31-49, 2005. Available at: https://onlinelibrary.wiley.com/doi/pdf/10.1002/97 80470759554.fmatter
- [21] ICOMOS "the Burra Charter for the Conservation of Places of Cultural Significance," 1999. Australia. Available at: http://australia.icomos.org/
- [22] J. Bishop "Managing Technical Knowledge to Enhance Organizational Best Practice," Loughborough University [Online], 2009. http://www.lboro.ac.uk/cice/people/alumni.html
- [23] E. Consortium "Notes on the conservation-restoration of architecture (buildings, monuments, and sites)," 2007.
- [24] ICCROM "International center for the study of the preservation and restoration of cultural property," 2005. Available at: https://www.iccrom.org/resources/publications?se arch=&categories=all&languages=399&region=al l&button=submit&page=1
- [25] ICA "Presentations and lectures", 2005. Available at: http://www.ica-sae.org/trainer/english/p15.htm
- [26] D. Snowden "Liberating Knowledge," *in Reeves*, J.E. (ed.) Liberating Knowledge. London: Caspian Publishing, pp. 6-19, 1999.

- [27] WABER "the West Africa Built Environment Research Conference," (24-26 July) Abuja, Nigeria, 2012. Available at: https://hub.hku.hk/handle/10722/185209
- [28] S. Vector "Knowledge Management," 2008 http://www.vectorstudy.com/management\_topics/ knowledge\_management.htm
- [29] B. Bjork "Information technology in construction: domain definition and research issues," International Journal of computer-integrated design and construction, volume 1, issue1, pp. 1-16, 1999. https://helda.helsinki.fi/server/api/core/bitstreams/b22abec9-0ff6-45d4-8dd9-03424f51e54e/content
- [30] K. Das "The Role and Impact of ICT in Improving the Quality of Education: An Overview, International Journal of Innovative Studies in Sociology and Humanities," (IJISSH), Volume: 4 Issue: 6, pp. 97-103, 2019. Available at: https://ijissh.org/storage/Volume4/Issue6/IJISSH-040611.pdf
- [31] H. Scarbrough, J. Swan, and J. Preston "Knowledge Management: a literature review," London: Institute of Personnel and Development, 1999.

- [32] R. Gyampoh, R. Moreton and D. Proverbs "Implementing information management in construction: establishing problems, concepts, and practice," *Construction Innovation: Information*, Process, Management, volume 3, issue 3, pp. 157-173, 2003. Available at: https://doi.org/10.1108/14714170310814918
- [33] M. Sun, and R. Howard "Understanding I.T in Construction," *London: Spon Press*, 2004. https://doi.org/10.4324/9780203645239
- [34] T. Lucey, (ed.) "Management Information System," 9th edt. London: Thomson Learning, 2005.
- [35] V. Anantatmula "Leadership role in making effective use of KM," *The Journal of information and knowledge management systems*, volume 38, issue 4, pp. 445-460, 2008. Available at: https://doi.org/10.1108/03055720810917705
- [36] M. Shin, T. Holden and R. Schmidt "From knowledge theory to management practice: towards an integrated approach," *Information Processing and Management*, Volume 37, no. 2, pp. 335-355, 2001. Available at: https://doi.org/10.1016/S0306-4573(00)00031-5

# إدارة المعرفة الخارجية في بيئة مؤسسة الحفاظ المعماري سالم مختار الترهوني\*

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#### الملخص

من المعتاد في مؤسسات الحفاظ المعماري أن بعض جوانب المعرفة لا تكون متوفرة عادة. هذا يدعو الي ضرورة الوصول الي المعرفة الخارجية لتغطي أوجه القصور بالمعرفة الداخلية. تهدف هذه الورقة إلى دراسة الوضع الحالي للتعامل مع المعرفة الخارجية في مؤسسة إدارة المدن التاريخية في طرابلس؛ لبيبا، من أجل تطوير إطار نظري يمكن أن يكون بمثابة دليل إجرائي لاكتساب المعرفة الخارجية في مؤسسات الحفاظ على المباني التاريخية. تم اعتماد البحث النوعي لجمع وتحليل البيانات. وتم استخدام طرق متعددة لجمع البيانات، بما في ذلك المقابلات والملاحظات ومراجعة وثائق المؤسسة. وأظهرت النتائج عدم وجود معلومات كافية فيما يتعلق بالخيراء المحليين وأن التفاعل الحالي مع الاستشاريين يعتمد على طريقة الغرض المخصص (Ad-hoc) التي لا تضمن استجابة الخيراء في الوقت المناسب. كما أنه لا يوجد تبادل كاف للمعرفة مع المنظمات المحلية ذات الصلة. كذلك أن أسباباً قانونية وسباسية أعاقت عملية اكتساب المعرفة الخارجية يجب توفير قاعدة بيانات لمصادر المعرفة المحلية والعالمية. وينبغي تحديد الخبراء وما هي المعرفة الخبراء المخبونة بالخبراء وما هي المعرفة بالخبراء عمايير للاستعانة بالخبراء علاوة على ذلك ابيون يتبغي أن تكون لديهم، والوثائق التي ينبغي توفيرها. أيضًا، يجب دعوة/تحفيز الخبراء المحليين لتقديم معارفهم ويجب وضع معابير للاستعانة بالخبراء علاوة على ذلك، ينبغي تغيير بعض القوانين المكومية لتسمح بعزيد من التواصل الخارجي. وأخيراء يوفر هذا البحث المهرفة الخارجية التي تساهم في عملية الحفاظ على المباني علاوة على المباني أدائها.

#### الكلمات الدالة:

إدارة المعرفة، المباني التاريخية، مؤسسات الحفاظ المعماري، ليبيا.