



## RISK MANAGEMENT IN LIBRARIES, ARCHIVES AND MUSEUMS

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**Abstract:** Libraries, archives and museums around the globe are exposed to risks stemming from environmental conditions and human-driven potential hazards. Since an emergency/disaster immediately breaks out, the four key principles of disaster management, namely preparedness, damage reduction, intervention and improvement, should strictly be defined proactively, planned and necessary measures should be taken beforehand. In a well set-up Library, Archive ( information and documentation centers) and Museum Risk Management, it is important to define the hazards and prioritize them after the assessment of the risks that may be posed by such hazards. Again based on this management system, continuous improvement through Plan-Do-Check-Act (PDCA) cycles should be aimed. Risk analyses should be performed in consideration of the incidence frequency, severity and duration of emergency/disasters; number of collection, library and archive items; number of workers; number of users; building characteristics (structural quality, quality of non-structural elements, geological condition of soil, etc.) as well as the properties of hazardous facilities surrounding the building. Separate strategies to control each risk originating from hazards (aimed at controlling the risks in the short, medium and long term) should be defined. In this study, the importance of risk analysis and risk assessment for Libraries, Archives and Museums under the Occupational Health and Safety Law no 6331 has been emphasized, and a sample risk analysis based on the 5x5 risk matrix method is presented.

**Key Words:** Cultural Heritage Risk Management, Risk Analysis Methods, Risk Monitoring, Risk Management, Information And Documentation Management

### 1.INTRODUCTION:

Risk management in library, archive and museum buildings is a comprehensive study where potential hazards that may turn into risks if measures are not taken, risks that may give damage to building occupants as well as collection, library and archive materials in the building, and measures to mitigate such risks are regularly assessed. Many researchers have involved projects related with risk

assessment studies for reducing risks of library, archive and museum buildings. Institutions such The International Federation of Library Associations and Institutions (IFLA) developed some principles of for its members in library-related activities of disaster risk reduction and in times of conflict, crisis or natural disaster (IFLA's Key Initiatives 2011-2012 programme). IFLA aimed to encourage safeguarding and respect for cultural property especially by raising awareness

and promoting disaster risk management and to strengthen cooperation and participation in cultural heritage activities through UNESCO, the libraries, archives, museums, heritage buildings and sites group. Dowlin (2004) emphasized that the modern academic library building must set new standards for seismic mitigation, ventilation, heating, lighting and openness of the building, security of the staff, collections, and ability to provide a comfortable environment. One of the Risk Assessment Projects is carried out for digitising special collections (Ketzer, Marzo, Pimlott, 2012). Risk magnitudes are defined according to 3 parameters (A. For events, how often does the risk occur? B. How much value is lost in each affected object? C. How much of the collection is affected?). Oketunji (2014) examined occupational health and safety survey in public university libraries in South-West, Nigeria. Senyah, Y. and Lamptey B.L., (2011) carry out a study that critical examination of the personal and security risks to which Kwame Nkrumah University Of Science And Technology Library, Kumasi, Ghana (KNUST) Library staff are exposed to and measures to be put in place to deal with them. Abdul-Wahab (2011) also examined about “sick building syndrome” for Umman Sultan Quaboos University (SQU) library buildings and defined poor indoor condition adverse effect on library staff.

Most common risks for museum collections are: physical forces, (earthquakes, physical damage from staff, vibrations from drawers, repair work); fire (flame, soot); water (floods, plumbing or roof leak); criminal (robbery, isolated theft, vandalism), pests (rodents, insects); contaminants (dust, gasses); light and uv radiation; incorrect

temperature; incorrect relative humidity; custodial neglect (data loss, misplacement, sample mixing). Michalski (1992) defined nine agents as common deterioration problems for museum environments: 1. direct physical force, 2. displacers, vandals, 3. fire, 4. water 5. pests 6. contaminants, 7. radiation 8. incorrect temperature 9. incorrect relative humidity (RH). A basic equation is used for finding damage rate: Object damage rate per agent = object value x agent deterioration rate x susceptibility to the agent. Risk assessment is necessary to identify risks and a systematic review of premises and activities with the potential to cause harm and damage (Prideaux, 2007). For museum building risk assessment, Waller (2005) implemented Cultural Property Risk analysis Model (CPRAM) for collection of Canadian Museum of Nature. According to risk management approach it is aimed to identifying all risk which are effect to collections, assessing the magnitude of each risk (from significant to insignificant), identifying possible mitigation strategies. Risk matrix created on basis of frequency of occurrence and severity of effect. carried out British Museum Risk Management Policy (2013) promulgated due to risk management within the Museum is therefore to achieve an optimum response to risk, prioritised in accordance with an evaluation of the risks. British Columbia Museums Association also developed Best Practices Module of Risk Management (Hall, Duckles, 2005). It is aimed to evaluate and prioritize risks by sorting technique (risk matrix contains probability and impact parameters).

Research groups focused on risks that could affect specifically collections, library materials or museum, library staff. Overall aim of the study



is to examine both risks to People (board, staff, volunteers and patrons) and to property (actual property, buildings, artefacts, library materials and equipment). It is aimed to increase awareness among library, archive and museum responsables and decision makers.

## 2. MATERIALS AND METHOD:

In this study, health and security risks in library, archive, museum buildings within the scope of Code on Occupational Health and Safety with the number of 6331 and relevant regulations such as Regulation on Risk Assessment for Occupational Health and Safety are evaluated and precautions in order to reduce current risks in acceptable levels are determined. With this aim, “5x5 Risk Assessment Table” method is used in the study. In order to provide that the application shall be operable for all of the library, archive and museum buildings and serve as a model, likely risks not at definite buildings but at any library, archive and museum buildings are evaluated. 5x5 Risk Assessment parameters contains probability and magnitude parameters. Rating the risk score is done by intolerable, significant, moderate, tolerable, insignificant risks scales.

In risk assessment study, risks that shall give harm to both staff and works are analyzed. 5 risk factors are determined diversely for the staff, workplaces and cultural heritage objects, library materials. Undoubtedly, it is possible to mention about hundreds of risk factors at library, archive and museum buildings. However, in this study it is focused on threats that are mostly met.

## 3. RISK CONCEPT AND RISK MANAGEMENT:

Definition of the risk may vary in the international literature and standards. This is because risk varies by the characteristics of the particular industry or the branch of science involved. While risk terminology relies upon the same rationale in myriad of fields such as engineering, banking, insurance, medicine, psychology and sociology, risk terminology (probability forecasting), there are some deviating aspects in practice. Applying the Chaos Theory renown for its slogan “The flap of a butterfly in the Amazon Rain Forests can lead to a cyclone in the States” to Libraries, Archives and Museums would imply that an emergency/ disaster that may break out in any site of the building may impact the whole building. This might further cause injury and death in workers and loss/damage in collections (destruction of the building, structural members inside the building, furniture and other fixtures/equipment). And this would culminate in primarily fatality and interruption of the operational activities of the library, archive and museum buildings. While describing the risk concept, the concept of uncertainty at the site where the risk is involved should not be neglected. Because, risk is an unwanted event that may take place at an unknown time. As definitions in Table 1 reveal, risk always ends up with damage and loss. Confrontation with risk at work sites such as Libraries, Archives and Museums poses social, environmental, technological, safety and security consequences as well as commercial, financial, social, cultural, political and prestige impacts. Risks leading to loss are characterized to be impeding desired targets for workplaces.

**Table 1. Risk Definitions**

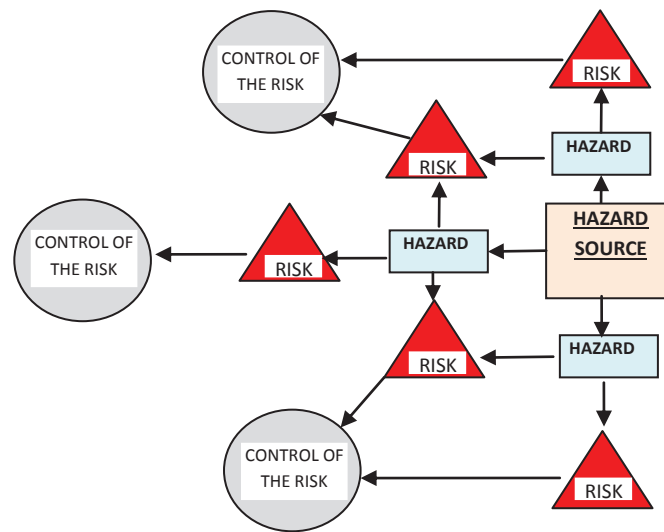
Definition provided by	Definition
AS/NZS 4360, 2004	Risk: The chance of something happening that will have an impact on objectives.
COSO, 2004	Risk: Events with negative effect creating a value and diminishing the existing value.
HSE (UK)	Risk: Chance (high or low) of harm to a person due to hazard and potential severity of that hazard.
ILO Guidelines, 2001	Risk: Combination of the probability of occurrence of a hazardous event and severity of the damage to human health or injury.
ISO/IEC Guide 51, 1999	Risk: Combination of the probability of harm with the severity of that harm in case of occurrence.
ISO/IEC Guide 73, 2002	Risk: Combination of the probability of an event with the severity of its consequences.
TS 18001, 2008	Risk: Combination of the probability of the occurrence of a hazardous event or exposure with the severity of the injury or the impairment of health that such event or exposure may cause.
Turkish Language Association	Risk: Threat of exposure to harm.
OHS Law no 6331 and Regulation on OHS Risk Assessment, 2012	Risk: Probability of occurrence of a loss, injury or other harmful result due to hazard.

As the definitions suggest, there is a probability, namely a state of uncertainty surrounding the occurrence of a risk, therefore, Libraries, Archives and Museums as well as all other businesses need a risk analysis for forecasting such uncertainty. As a matter of fact, when the risk occurs, it would induce negative effects on the objectives of the business, therefore such risks should proactively be identified. To this end; risk has 2 major parameters, namely :

- The probability of occurrence of the risk,
- The impact of the occurring risk,

and should definitely suggest a result (such as damage/loss).

Hazard involves the potential of causing a damage. To identify the risks, what factors might adversely impact the health and safety of people and the environment in case of occurrence of foreseen hazards should be considered. Several hazards may originate from a hazard source, and several risks may originate from a hazard (Figure 1).



**Figure 1. Secondary Hazards And Risks By Hazard Source**

In brief, risk can be described as the probability for the hazard to turn into damage. Risk Analysis is the procedure of addressing and qualitatively and quantitatively interpreting all risks that may potentially arise. Hazards augment the potential severity of damage and the magnitude of outcomes once risk has occurred. The greater

the available capacity against the risks and the higher the capability of managing the risks (if the organization is capable of responding and producing a capacity), the higher the capability of diminishing the damage. Therefore, the following formulation may be developed:

$$R (\text{Risk}) = H (\text{Hazard}) \times S (\text{Severability of Damage})$$

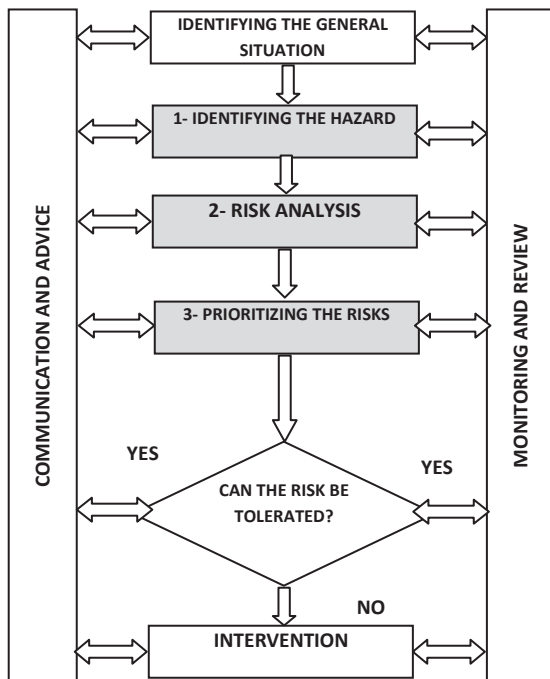
$$M (\text{Manageability/Capacity})$$

A risk analysis is a component of the risk management system. In general, management is fulfilling the set of managerial functions, namely planning, organizing, staffing, guiding and supervising. Turban introduces another definition suiting these functions. Turban describes management as: “achieving particular objectives by using particular resources”. The need to management arises out of the requirement to fulfil, through a teamwork, the objectives that persons cannot achieve by themselves. In this sense, management

is a group activity that should be performed to attain particular objectives (Altınöz, 2012). In all steps of the “Risk Management” cycle in Figure 2, a group study is of essence. As a matter of fact, in qualitative and quantitative risk analysis methods based on scientific numerical values, in assessing the risks (Step 1, 2 and 3 in Figure 1), in classifying the risk and deciding to act, monitoring the current situation through consistent communication and consultation with internal

and external stakeholders is totally based on a group study.

An archive building incorporates myriad of functions, complexes and sometimes contradictions. Such a huge facility ensures the preservation of documents and satisfies user demands. While making the calculations and designing the building, the engineer should meticulously address solutions for all problems and avoid new ones. For this reason, solutions to reduce both the investment cost as well as maintenance cost should be developed (Benoit & Neirinck, 1987). Furthermore, attention should be paid to the selection of non-structural materials to prevent injury, loss of limbs and death. Hence, both employees and users as well as collections are protected against damage.



**Figure 2. Phases Of Risk Management (ISO 31010, 2009)**

In this respect, the directors acting in capacity of employers at library, archive and museum

workplaces should conduct risk analyses within the risk assessment process on the basis of the provisions of Law no 6331<sup>1</sup>, and workers should contribute to such actions.

1 The Occupational Health and Safety Law no 6331 effective in Turkey requires as a legal obligation the workplaces to take serious measures proactively and analyse and assess all risks. The Occupational Health and Safety Law published in the Official Gazette no 28339 of 30 June 2012 emphasizes risk analyses and highlights the significance of analysing the risks. Appropriate provisions are referred to below:

Article 5- (1) The employer shall its obligations on the basis of the following principles:

- a) avoiding risks.
- b) evaluating the risks which cannot be avoided.
- c) combating the risks at source.

Article 16 - (1) The employer shall inform the workers and workers' representatives of the following issues taking into account the characteristics of the enterprise for the purposes of ensuring and maintaining the occupational health and safety:

- a) the safety and health risks that may be confronted at the workplace, and protective and preventive measures.
- b) their legal rights and responsibilities.
- c) Workers designated to handle first aid, extra ordinary situations, disasters, fire-fighting and the evacuation.

(2) The employer shall;

- a) as soon as possible, inform all workers who are, or may be, exposed to serious and imminent danger of the risks involved, and of the steps taken or to be taken as regards protection.
- b) ensure that employers of workers from any outside undertakings and / or enterprises engaged in work in his undertaking and / or enterprise receive adequate information concerning the points referred to in paragraph 1 which is to be provided to the workers in question.
- c) ensure that support staff and workers' representatives shall have access to the risk assessment, protective and preventive measures related to safety and health at work, the information yielded by measurements, analysis, technical controls, records, reports and inspections.

Also based on the provisions of Article 7 governing Phases of Risk Assessment under the Regulation for Risk Assessment in Occupational Health and Safety as published in Official Gazette no 28512 of 29 December 2012, all workplaces should monitor, starting from



#### 4. RISK MANAGEMENT IN LIBRARIES, ARCHIVES AND MUSEUMS:

The study involves a investigation that what may give damage to workers and users, building, objects and collections, and what measures have been / are to be taken against hazards that pose the potential of such damage should be explored across the whole scale of the building. Buildings, building fixtures, machines, equipment, substances, operation and disasters may give damage to museum objects as well as library and archive materials.

Archives and Record Storage Building should be equipped with safety measures against poor environmental conditions, insects, rodents, moisture and temperature fluctuations, fire, flood, theft and sabotage (Kathpalia,1990). All hazardous factors should be identified and prioritized. After such susceptibility analysis, an assessment should be made on identified risks that may be tolerated and on conditions for which immediate measures should be taken. All workers should be trained on hazards identified, emergency plans should be prepared and drills should regularly be maintained. Scenarios should be developed based on estimated disaster vulnerability of objects and library-archive materials, and such scenarios should address the use and enhancement of existing resources, intervention of workers and measures for the protection of objects. In scenario perspective, also documentation, conservation, preservation and transferral to safer storage are-

the design or incorporation phase, the processes of identifying the hazards, defining and analysing the risks, establishing risk control measures, documenting the process, updating and when necessary renewing the actions taken.

as of the objects damaged after the emergency/ disaster and subsequent secondary disasters in accordance with the intervention of conservators are of essence. Consistent review should be ensured in the Emergency Plans developed.

Cultural heritage is the property of not only the host country but also all people. For safe conveyance of this heritage to future generations, it is an essential responsibility to take measures against risks threatening the cultural heritage.

There are myriad of events held around the globe for risk mitigation and protection. ICOM's Museum Contingency Plan (MCP), UNESCO Cultural Heritage Conservation Plans, US Getty Museum training and implementation campaigns are some of these initiatives. In the Hyogo Framework adopted in the Global Risk Reduction Conference held in Kobe, Japan in 2005, 5 key areas were addressed:

- Governance: Corporate, legal and political frameworks
- Risk definition, assessment, monitoring and early warning
- Management of information and training
- Reducing underlying risk factors
- Effective intervention and preparedness for recovery (UN/ISDR, 2005).

Across these objectives, with a view to reducing the global cultural heritage risks, following efforts have been addressed: strengthening the contribution of local, regional, natural and international bodies; employing information, innovation and training to build up a culture for the prevention

of disaster risks on the global cultural heritage; identifying, assessing and monitoring disaster risks; and consolidating the groundwork for the reduction of risks.

Moreover, UNESCO’s Department for Information General Programme has launched a long-term programme for archive and document management for member countries called “Records and Archives Management Programme-RAMP). Within the scope of this project, the training of even the non-professional staff on conservation has been targeted through campaigns called “Guidelines on Best Practices in Basic Collection Management for Non Professional Staff and the Organization of Training Courses: A RAMP Study (Clements & Thomas, 1992). In addition, within the scope of initiatives launched by the International Federation of Library Associations and Institutions

(IFLA), principles for the conservation of Library and Information Resources were defined and standards were developed (Adcock, 1998).

According to the classification, by NACE<sup>2</sup> code, of workplaces active in Turkey based on the statistics of the Social Security Institution (SSI); library, archive and museum workplaces are in class 91 (activity code). Data for the period 2010-2012 relating to the number of workplaces, number of compulsory insured workers, number of fatalities and permanent total incapacity as a result of employment injuries have been extracted from SSI’s statistical yearbooks (Employment Injury and Occupational Disease Statistics). These are shown in Table 2.

2 NACE: Statistical classification of economic activities in the European Community (NACE); is a reference source for producing and disseminating statistics for economic activities in Europe.

**Table 2. Statistics Of Accidents That Occurred In Library, Archive And Museum Workplaces (2010-2012)**

Year	Number of employment injuries			N’ of Permanent Incapacity			N’of Death Cases			Standart employment injury rates
	M	F	T	M	F	T	M	F	T	%
2010	1	0	1	1	0	1	2	0	2	10.46
2011	1	0	1	1	0	1	5	0	5	7.97
2012	5	0	5	0	0	0	0	0	0	36.34

Abbreviations used in the table:

**M:** Male,

**F:** Female,

**T:** Total.

Standardized employment injury (%) has been calculated with the following formula:

Standardized employment injury rates (%)

= $\frac{\text{Number of employment injuries in the branch of activities in 2012} \times 100}{\text{Expected number of employment injury}}$

Expected number of employment injury





As the table reveals, like in all workplaces throughout Turkey, risks on workers at also library, archive and museum workplaces may result in the injury, incapacity and death of workers. While assessing the risks in library, archive and museum buildings, the process should be set up so that the overall risk is analysed rather than only the risks on objects, library-archive materials or workers.

### 5. RISK ANALYSIS:

In risk analysis, there are two types of methods, namely qualitative and quantitative methods. In the quantitative approach, mathematical and statistical methods are employed to identify and reduce the risk. In case of no available data on probability, the specialized qualitative methodology where risk is expressed in qualitative terms such as low, moderate and high may be used.

The objective of the risk analysis is to predict the severity of the damage that may the artwork may suffer. Risk can be formulated as the Probability of Occurrence of a Hazardous Incident x Impact of the Hazard. The risk analysis decision is made based on this prediction and accordingly protection strategies are developed. While developing these strategies, feasibility and costs should also be taken into consideration.

In the study, the 5x5 matrix method as a qualitative risk analysis method was employed. Risk scores yielded by the risk analysis are found by multiplying the probability of the risk with severity according to the formulation above.

Risk Assessment Criteria have been determined as follows:

**Table 3. Probability Of The Occurrence Of The Risk**

PROBABILITY	RATING FOR THE PROBABILITY OF OCCURRENCE
VERY LOW (1)	Almost zero
LOW (2)	Very rare (once a year), only in abnormal cases
MODERATE (3)	Rare (several times a year)
HIGH (4)	Frequently (once a month)
VERY HIGH (5)	Very frequent (once a week, every day), in normal work conditions

**Table 4. Severity Of The Risk On Workers And Users**

MAGNITUDE	RATING THE SEVERITY
VERY LOW (1)	No loss of work hour, no first aid required
LOW (2)	No loss of work day, no permanent effect, ambulatory treatment, first aid required
MODERATE (3)	Minor injury, inpatient treatment required
HIGH (4)	Serious injury, long-term treatment, occupational disease
VERY HIGH (5)	Death, permanent incapacity

**Table 5. Severity Of The Risk On Museum Collections And The Library And Archival Materials**

MAGNITUDE	RATING THE SEVERITY
VERY LOW (1)	No/very limited damage; no conservation required
LOW (2)	Slight damage; conservation required
MODERATE (3)	Moderate damage (snap, break), conservation required
HIGH (4)	High damage (snap, disintegration, etc.) , conservation required
VERY HIGH (5)	Very high damage (severe damage in the collection / material), conservation required

**Table 6. 5x5 Risk Matrix**

		RISK LEVEL				
		MAGNITUDE				
PROBABILITY		VERY SERIOUS 5	SERIOUS 4	MODERATE 3	WEAK 2	VERY WEAK 1
VERY HIGH 5		HIGH 25	HIGH 20	HIGH 15	MODERATE 10	LOW 5
HIGH 4		HIGH 20	HIGH 16	MODERATE 12	MODERATE 8	LOW 4
MODERATE 3		HIGH 15	MODERATE 12	MODERATE 9	LOW 6	LOW 3
LOW 2		MODERATE 10	MODERATE 8	LOW 6	LOW 4	LOW 2
VERY LOW 1		LOW 5	LOW 4	LOW 3	LOW 2	LOW 1

**Table 7. Rating The Risk Score**

CONCLUSION	RISK CATEGORY
Intolerable Risks (25)	The work should not be started or any running process should immediately be stopped until the identified risk is brought down to an acceptable level. If it is not possible to reduce the risk despite the actions taken, the activity should be avoided.
Significant Risks (15,16,20)	The work should not be started or any running process should immediately be stopped until the identified risk is reduced. If the risk is linked with the progress of the work, then immediate measures should be taken and decision should be made on the progress of the work based on such measures.
Moderate Risks (8,9,10,12)	Actions should be started to reduce the risks identified. Such actions should be applied in accordance with a specific plan.
Tolerable Risks (2,3,4,5,6)	Additional control processes may not be needed to eliminate the risks identified. However, existing controls should be maintained and such maintenance should be audited.
Insignificant Risks (1)	Planning control processes and retaining the records of actions may not be needed to eliminate the risks identified.

**Table 8. Indicating The Scores Based On The Matrix Method On The Risk Analysis Table**

NO	HAZARD SOURCES / HAZARDS	RISKS IDENTIFIED	DAMAGE	P	M	R	CORRECTIVE PREVENTIVE CONTROL MEASURES
1a	Cable insulations are worn out	Electrical shock / fire	E  Injury / death	5	4	20	Immediately replacing defective and worn-out cables not conforming to the standards  Undertaking periodical checks
1b	Cable insulations are worn out	Fire	C  Damage / loss	5	5	25	Additional measures should be taken to protect objects against fire, number of fire extinguishers should be increased.
2a	Electric leakage in electrical equipment	Electrical shock / fire	E  Injury / Death	4	5	20	Using uninsulated sockets  Insulating the electrical switchboards  Placing an insulated mat in front of electrical switchboards  Installing residual current relays
2b	Electric leakage in electrical equipment	Fire	C  Damage / loss	4	4	16	Fire measures should be extended.
3a	High concentration and disorganization of wiring	Tripping	E  injury/	3	4	12	Avoiding the potential electrical leakage and the resulting fire, all cables should be organized and arranged in conduits.

3b	High concentration and disorganization of wiring	Fall down of the artwork carried by the tripping worker	C Damage / loss	2	3	6	Handling the artworks not manually but in containers Avoiding manual overload
4a	Attaching labels and warning signs to the electrical switchboard	Electrical shock / fire	E Injury / death	5	4	20	Warning signs and labels indicating the hazard should be attached to electrical switchboards. Operating instructions for all devices should be prepared and hung.
4b	Attaching labels and warning signs to the electrical switchboard	Fire	C Damage / loss	4	4	16	Fire measures should be extended.
5a	Failure to take necessary fire-fighting measures	Fire	E Injury / death	5	5	25	1- printed instructions for a fire condition should be in place, fire trainings should be presented, fire-fighting equipment should undergo regular maintenance, warning signs showing emergency escape routes during a fire should be attached, and such routes should be kept clear (tables, chairs, cabinets, etc. should be removed).
5b	Failure to take necessary fire-fighting measures	Fire	C Damage / loss	5	5	25	Additional fire fighting measures should be taken in areas hosting the objects (exhibition, reading, storage areas).

**Abbreviations:**

Sections marked with (a):

Employees: E

Sections marked with (b):

Collections and library, archival material: C



Probability: **P**

Magnitude: **M**

Total Risk Score: **R**

On Risk Analysis forms; date of realization, validity date, location, person-department in charge of control measures against identified risks, and deadline for the correction of identified problems should be specified.

## 6. RESULTS AND DISCUSSION:

Certainly, hundreds of hazards and resulting risks leading to loss may be defined for library, archive and museum buildings. In this study, 5 hazards only for workers and users, and 5 hazards for the materials and collections in the libraries and archives were identified followed by risk analysis. Risk indexes (magnitude table of the risk analysis) are created not only for library, archive and museum staffs /users (Severity of the risk on workers and users **Table 4**) but also for museum collections and library and archival materials (Severity of the risk on museum collections and the library and archival materials **Table 5**). Risks should be categorized based on risk analysis results for all risks at library, archive and museum buildings by means of particular risk analysis methods including control forms as the simplest basic risk analysis method, the 5x5 matrix method, Fine-Kinney method and the Failure Mode and Effects Analysis (FMEA). In such studies, all workers should be trained, and a behavioural change, namely a risk culture should be created throughout the facility. Scores yielded by the risk analyses should be decreased and minimized through regular reviews (within defined period).

Risk assessment studies should be focused on matters below:

- People (board, staff, users, visitors, volunteers and patrons)
- Property (actual property, buildings, artefacts, library and archival materials and equipment)
- Income (revenue sources from a variety of sources)
- Community Perception (officials, relevant associations, other cultural organizations, and the general public)

The goal of a collections, library and archival materials risk assessment is to determine:

- What is the probability of the occurrence of a risk in building scale?
- What is the probability of the occurrence of a risk in areas (key areas) which exist collection, library and archival materials?
- What will be the resulting loss?
- What is the probability of the event happening?
- What is needed in order to overcome this situation?
- What are institutional sources (interior and exterior level)?

All individuals and institutions should be involved risk management (include risk analysis and risk assessment) studies and should be prepared to respond appropriately to assure safety of personnel and collections and library and archival materials. Risk analysis should be maintained as overall risks assessment in order to reduce

likely risks to those assets that are critical to the museum. With this analysis;

- Identification of all hazards
- Identification of all risk related with these hazards
- Prioritisation of all risks (overall risks)
- Mitigation
- To ensure the security with sources in library, archive and museum workplaces.

The present work is aimed to deal with overall risks which threat to library, archive and museum workplaces and to develop a risk assessment method for library, archive and museum workplaces responsables and decision makers.

## 7. CONCLUSION:

According to study results each risk should be defined not only for collection and library, archival materials scale but also staff and users level. For a successful risk management in library, archive and museum workplaces;

- Occupational Health and Safety policy and objectives should be developed in library, archive and museum workplaces,
- OHS workplace unit should be created,
- Tools and activities such as written instructions and warning signs should be used to develop safe behaviours.
- Management should allocate resource and time for occupational health and safety, participate in the accountability of risk, and attend board meetings on safety,

- Employees and users should embrace, take an interest in and assume responsibility for practices on occupational health and safety,
- Physical, biologic, chemical, psychosocial and ergonomic risk factors in the workplace should be reduced to levels legally prescribed,
- Some promotional strategies should be established with a view to creating awareness on employees in protection against risks,
- Briefings on occupational safety, group meetings and training employees on occupational health, hygiene and job stress,
- Seminar programmes incorporating the Occupational Health and Safety week, emergency management, reporting and investigation of accidents, safety and environmental management systems should be held.

Such actions towards all risks in the building and its content should meticulously be implemented, risks should be eliminated in an descending order of significance and brought under control. It should be kept in mind that a successful risk management owes to a teamwork.

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## KÜTÜPHANE, ARŞİV VE MÜZELERDE RİSK YÖNETİMİ

**Özet:** Tüm dünyada kütüphane, arşiv ve müzeler, çevresel koşullar ve insan kaynaklı potansiyel tehlikelere bağlı risklerle karşı karşıyadır. Bir acil durum / afet ise aniden meydana geldiğinden afet yönetiminin dört ilkesi olan hazırlıklı olma, zarar azaltma, müdahale ve iyileştirme aşamalarının mutlaka önceden proaktif yöntemlerle tanımlanması, planlanması ve önlemlerin alınması gerekmektedir. Başarılı bir Kütüphane, Arşiv (bilgi ve belge merkezleri) ve Müze Risk Yönetiminde tehlikelerin tanımlanarak bunlardan kaynaklanabilecek risklerin analizinden sonra önceliklendirilmesi önemlidir. Yine bu yönetim sistemine bağlı olarak Planlama, Uygulama, Kontrol etme ve Gözden Geçirme (PUKO) döngüleriyle sürekli iyileştirme amaçlanmalıdır. Acil durum / afetlerin meydana gelme sıklığı, büyüklüğü, süresi, kütüphane, arşiv, müze binasının büyüklüğü, koleksiyon, kütüphane ve arşiv malzemesi sayısı, çalışan sayısı, kullanıcı sayısı, binanın özelliği (yapı kalitesi, yapısal olmayan malzemelerin kalitesi, jeolojik açıdan zeminin durumu vb.), bina çevresindeki tehlikeli tesislerin özellikleri de dikkate alınarak risk analizleri yapılmalıdır. Tehlikelerden kaynaklanan her bir riskin kontrolü amacıyla ayrı ayrı stratejiler (kısa, orta ve uzun vadeli olarak risklerin kontrolünü amaçlayan) belirlenmelidir. Çalışmada, Kütüphane, Arşiv ve Müzelerde 6331 sayılı İş Sağlığı ve Güvenliği Kanunu kapsamında risklerin analizi ve risklerin değerlendirilmesi konularının önemi vurgulanmış, 5x5 risk matrisi yöntemiyle uygulanan bir risk analizi önerisi sunulmuştur. Bu çalışmada 6331 Sayılı İş Sağlığı ve Güvenliği Kanunundaki mevzuat kapsamında kütüphane, arşiv ve müze binalarındaki sağlık ve güvenlik riskleri değerlendirilmiş, mevcut risklerin kabul edilebilir düzeye indirilebilmesi için alınması gereken önlemler belirlenmiştir. Bu amaç için “5x5 Risk Değerlendirme Tablosu” yöntemi kullanılmıştır. Uygulamanın tüm kütüphane ve arşiv binaları için kullanılabilir olması ve bir örnek teşkil edebilmesi için belirli bir bina yerine herhangi bir kütüphane, arşiv ve müze binasında karşılaşılabilecek riskler değerlendirilmiştir. Risk değerlendirmesi çalışmasında hem çalışanlara hem de koleksiyon ve kütüphane, arşiv malzemesine zarar verebilecek riskler değerlendirilmiştir. Çalışanlar ve koleksiyonlar için ayrı ayrı 5’er adet olmak üzere toplam 10 adet risk faktörü belirlenmiştir. Şüphesiz ki kütüphane, arşiv ve müze binalarına yönelik yüzlerce tehlike ve bunlara bağlı kayıplarla sonuçlanabilecek riskler tanımlanabilir. Ancak çalışmada en çok karşılaşılan tehlikelerden sadece 5’i üzerinde odaklanılarak bir modelin geliştirilmesi amaçlanmıştır. En basit risk analizi yöntemi olan kontrol formlarıyla, 5x5 matris, Fine-Kinney, Hata Türü Etki Analizi (FMEA) gibi risk analiz yöntemleriyle kütüphane, arşiv ve müze binalarındaki tüm risklere yönelik yapılacak risk analiz sonuçlarına göre risklerin kategorize edilmesi gerekir. Bu çalışmalarda tüm çalışanlar eğitilmeli, bina genelinde bir davranış değişikliğine gidilmesi yani bir risk kültürünün oluşturulması sağlanmalıdır. Risk analizleri sonucunda elde edilen skorlar sürekli gözden geçirmelerle (tanımlanan süre içinde) daha aşağı değerlere çekilerek riskleri minimize etme yoluna gidilmelidir. Ülkemizde yürürlükte olan 6331 sayılı İş Sağlığı ve Güvenliği Kanunu ve ilgili yönetmeliklerden İş Sağlığı ve Güvenliği Risk Değerlendirmesi Yönetmeliği, İşyerlerinde Acil Durumlar Hakkında Yönetmelik, Binaların Yangından Korunması Hakkında Yönetmelik gibi mevzuat hükümleri doğrultusunda kütüphane, arşiv ve müze binalarında öncelikle çalışanlar olmak üzere bina ve eklentilerinde bulunan koleksiyonlar ile kütüphane / arşiv malzemesinin güvenliklerinin sağlanması ile mevcut tehlikelerin belirlenerek, bu tehlikelere bağlı oluşabilecek risklerin en aza indirilmesi ya da tamamen ortadan kaldırılması sağlanmalıdır. Çalışma ile 6331 sayılı İş Sağlığı ve Güvenliği Kanunu uygulamalarının kütüphane, arşiv ve müze binalarında dikkate alınması vurgusu yapılarak, çalışanların çalışma koşullarının iyileştirilmesi ile müze



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koleksiyonları ve kütüphane, arşiv malzemesinin korunmasında binalarda alınması gerekli İş Sağlığı ve Güvenliği önlemlerine dikkat çekilmiştir.

**Anahtar Kelimeler:** Kültürel Miras Risk Yönetimi, Risk Analizi Metotları, Risk İzleme, Risk Yönetimi, Bilgi ve Belge Yönetimi