

EMERGENCY MANAGEMENT IN TAHFIZ  
INSTITUTIONS AT KAMPUNG JANDA  
BAIK, PAHANG

MUHAMAD SHAFIQ BIN JAMALUDDIN

BACHELOR OF OCCUPATIONAL SAFETY  
AND HEALTH (Hons)

UNIVERSITI MALAYSIA PAHANG

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---

(Supervisor's Signature)

Full Name : MOHAMAD EZUAN BIN ABDUL JALIL

Position : LECTURER

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---

(Student's Signature)

Full Name : MUHAMAD SHAFIQ BIN JAMALUDDIN

ID Number : PA15003

Date : 18 JANUARY 2019

EMERGENCY MANAGEMENT IN TAHFIZ INSTITUTIONS AT KAMPUNG  
JANDA  
BAIK, PAHANG

MUHAMAD SHAFIQ BIN JAMALUDDIN

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## ABSTRAK

Tesis ini berkaitan pengurusan kecemasan untuk memperbaiki aspek keselamatan dan kesihatan di Institusi Tahfiz di Kampung Janda Baik, Pahang. Latar belakang kajian ini menurut statistik yang dikeluarkan oleh Jabatan Bomba dan Penyelamat Malaysia membuktikan bahawa dari tahun 2015 hingga 2017 terdapat 211 kes kebakaran yang dicatatkan di institusi Tahfiz di seluruh Malaysia, jumlah kes telah menunjukkan bahawa masalah kebakaran yang terlibat Institusi Tahfiz berada pada tahap yang membimbangkan. Masalah ini berlaku kerana reka bentuk bangunan dan kegagalan kesan infrastruktur dari beberapa institusi Tahfiz. Dengan bahaya lain yang boleh berlaku seperti bahaya semula jadi adalah kebarangkalian yang tinggi seperti tanah runtuh, gempa bumi dan banjir kilat. Tujuan utama tesis ini adalah untuk menggunakan hasil kajian untuk meningkatkan pengurusan kecemasan ke arah utama peristiwa kemalangan dan pengetahuan tentang kesediaan kecemasan. Selain itu, matlamat pertama adalah untuk menentukan tahap kerentanan Tahfiz intitusi di Kampung Janda Baik. Objektif pertama diselesaikan dengan menjalankan penilaian kerentanan. Dari penilaian itu, untuk mengenal pasti potensi bahaya yang muncul di kawasan Tahfiz. Hasilnya menunjukkan terdapat dua jenis bahaya yang merupakan bahaya alamiah dan bahaya buatan manusia yang tinggi yang berpotensi terjadi di Tahfiz adalah tanah runtuh, gempa bumi, banjir kilat, dan kebakaran terbuka. Objektif kedua adalah menentukan pengurusan kecemasan di Institusi Tahfiz di Kampung Janda Baik, Pahang. Kaedah yang digunakan adalah pemerhatian dan senarai pemeriksaan. Dari pemerhatiannya, untuk mengenalpasti ketersediaan sistem pengurusan kecemasan setiap Tahfiz. Hasilnya menunjukkan beberapa Tahfiz mematuhi keperluan dan piawaian yang ditetapkan. Objektif ketiga adalah untuk mengukur tahap pengetahuan tentang kesediaan kecemasan di kalangan pelajar dan warden. Daripada sumber-sumber tersebut, telah dikenal pasti bahawa Institusi Tahfiz mempunyai kesedaran dan pengetahuan yang tinggi dan sederhana yang berkaitan dengan kesediaan kecemasan di kalangan pelajar dan warden. Kaedah ini diselesaikan dengan menggunakan soal selidik dan tinjauan. Untuk meningkatkan kesediaan institusi Tahfiz, beberapa cadangan telah dicadangkan seperti yang dilakukan oleh OSH dalam program Tahfiz yang mana ia dapat menyediakan pendidikan keselamatan untuk masyarakat Tahfiz, meningkatkan penglibatan pengamal keselamatan dalam memberikan maklumat mengenai keselamatan dan isu kesihatan juga dapat menyediakan peralatan keselamatan yang diperlukan untuk mematuhi standard keselamatan untuk Institusi Tahfiz. Dengan membangunkan sistem pengurusan OSH di institusi Tahfiz ia dapat mengenal pasti tahap pematuhan keselamatan dan terdapat beberapa senarai semak yang disediakan oleh PESSHA yang secara sistematik Program Peningkatan Pengurusan OSH (SOMEPEP) yang disediakan oleh PESSHA, kerana dengan meningkatkan SOMEPEP kepada Institusi Tahfiz, berdasarkan hasil senarai semak yang kita dapat mengklasifikasikan tahap Tahfiz yang berkaitan dan mematuhi keperluan. Dengan penguatkuasaan cadangan itu, ia dapat meningkatkan tahap keselamatan semasa bagi Institusi Tahfiz.

## ABSTRACT

This thesis deals with emergency management to improve aspects of safety and health in Tahfiz Institutions at Kampung Janda Baik, Pahang. The background of this studies are according to statistics that released by the Jabatan Bomba dan Penyelamat Malaysia it proved that from year 2015 to 2017 there were 211 fire cases recorded in Tahfiz institution throughout Malaysia, the number of cases has shown that the fire problem that involved the Tahfiz institution was at an alarming level. This problem occur due to the building design and the failure of infrastructural effect of the several Tahfiz institution. With the other hazard that can occur such as a natural hazard are high probability to occur such as landslide, earthquake and flash floods. The main objective of this thesis was to utilize the result of the study in order to improve the emergency management towards the major accident events and knowledge of emergency preparedness. Furthermore, the first objective is to determine vulnerability level Tahfiz intitutions in Kampung Janda Baik. The first objective was completed by conducted the vulnerability assessment. From the , assessment it was to identify the potential hazard emerges on the Tahfiz area. The result show there have two type of hazard which is a natural hazard and man-made hazard that are high potentially to occur in the Tahfiz are it is, landslide, earthquake, flash flood, structural fire and open fire. The second objective is to determine the availability of emergency management at Tahfiz Institutions in Kampung Janda Baik, Pahang. The method uses was walkthrough observation and checklist. From the walkthrough observation it to identify the availability of the emergency management system of each Tahfiz. The result show some of Tahfiz are comply with the requirement and standard that are given. The third objective are to measure the level of knowledge on emergency preparedness among student and wardens. From those sources it was identified that the Tahfiz Institutions had high and moderate awareness and knowledge regarding it to emergency preparedness among student and wardens. The method was completed by using questionnaire and survey. In order to increase the preparedness of the Tahfiz institution, some recommendation had been proposed such as by doing OSH in Tahfiz programs which is it can provide the safety education for the Tahfiz community, increase the involvement of the safety practitioner on providing information regarding to safety and health issue it also can provided the safety equipment that are needed to comply with the safety standard for the Tahfiz Institutions. By developing the OSH management system in Tahfiz institutions it can identify the level of safety compliance and there are some of checklist that are provide by PESHAs which Systematically OSH Management Enhancement Program (SOMEPEP) that are provide by PESHAs, it because by enhancing SOMEPEP to the Tahfiz Institutions, based on the result of the checklist we can categories the level of Tahfiz that related and complied with the requirement. By enforcement of the recommendation it can improve the current safety level for the Tahfiz Institutions.



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## LIST OF SYMBOLS

|          |   |
|----------|---|
| x        | Multiple  |
| N        | Equal to the number of items                      |
| c        | The average inter-item covariance among the items |
| v        | Equals the average variance.                      |
| $\alpha$ | Alpha   |

## **LIST OF ABBREVIATIONS**

|               |  |
|---------------|--|
| FEMA          | Federal Emergency Management Agency                          |
| UNISDR        | United Nations International Strategy for Disaster Reduction |
| NADMA         | Agensi Pengurusan Bencana Negara                             |
| BERNAMA       | Berita Nasional Malaysia                                     |
| JBPM          | Jabatan Bomba Dan Penyelamat Malaysia                        |
| NIOSH         | National Institute of Occupational Safety and Health         |
| NFPA          | National Fire Protection Association                         |
| JMM           | Jabatan Meteorologi Malaysia                                 |
| SIMPENI       | Portal Sistem Maklumat Pendidikan Islam                      |
| WHO           | World Health Organization                                    |
| MKN Arahan 20 | Majlis Keselamatan Negara Arahan 20                          |
| ICS           | Incident Command System                                      |
| PFA           | Psychological First Aid                                      |
| MSOSH         | Malaysian Society For Occupational Safety and Health         |
| PESHA         | Pahang Environment Safety Health Association                 |
| BCP           | Business Continuity Planning                                 |
| BCM           | Business Continuity Management Cycle                         |

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Introduction**

In recent years there have been numerous cases of accidents occurring in schools involving students and teachers, and are no exception in “Sekolah Pondok”. Most of the accidents that occur at school are due to factors such as negligence, treason and failure of equipment and utilities. Statistics that recorded by Jabatan Bomba dan Penyelamat Malaysia (JPBM) (2017) from 2012 to 2017 there were 31 cases of accidents has occurred at the school that caused injuries to students among them as students were hit by a goalpost while doing sports activities and ceiling fans. There are other incidents in school but the fact that the actual number of accidents in school is higher because there are schools that do not report because they consider the case quite small.

While the fire tragedy in a Tahfiz Darul Quran Ittifaqiyah Center, Kampung Datuk Keramat that has claimed 23 lives could be illustrated that the incident caused some of the factors previously described including treason and the structure of the dormitory building occupied by the victim. Therefore, awareness measures need to be balanced either by the flow of regular schools or religious schools to open the eyes of all parties that security in the religious school area must also follow the established guidelines to avoid the occurrence of undesirable events. April this year, according to National Institute of Occupational Safety and Health (NIOSH) they stated that 519 such schools are registered throughout the country, but many are believed to have not been registered. The Ministry of Education faces difficulties in monitoring and enhancing the safety features of the school of Tahfiz as well to the quantity of students it because most of school there are not registered. Referring to the occurrence of Tahfiz Darul Quran Ittifaqiyah Center, Kampung Datuk Keramat before the government had to take the initiative by obliging

every religious school in the country to register with the Ministry of Education or the state government to raise the safety level of the school. Besides, the government should also require a comprehensive security audit against a school and the facilities it provides to ensure existing facilities at the standard rate.

According to National Institute of Occupational Safety and Health (NIOSH) chairman, Tan Sri Lee Lam The this incident could be avoided if all schools practiced good KKP culture and conducted frequent security audits as organized by NIOSH (BERNAMA, 2011).

Accidents or dangerous incidents in schools cannot be denied and it is a serious matter if it is not taken into account and has the cooperation to prevent the occurrence of all parties. Hence, the school is encouraged to take the initiative to carry out routine workplace inspections to identify hazards and subsequently assess and control the risks inherent in the hazard to cultivate and create a safe and healthy school environment it is not the responsibility of teachers and school staff only but students and parents must also play a role to achieve the desired objective.

## **1.2 Background of Study**

Improprate planning and efficient handling in Tahfiz Institutions management is crucial to ensure that such an event has occurred which involves the loss of life and property, this is because some private establishments have established this Tahfiz Institutions without following the specified requirement from JBPM. In addition, due to the lack of priorities in safety and negligence are among them are the causes of accidents involving Tahfiz institutions in Malaysia, and based on previous events, most of them involve fires.

According to statistics that released by the Jabatan Bomba dan Penyelamat Malaysia it proved that from year 2015 to 2017 there were 211 fire cases recorded in Tahfiz institution throughout Malaysia, the figure has shown that the fire problem that

involved the Tahfiz institution was at an alarming level. This problem occur due to the building design and the failure of infrastructural effect of the several Tahfiz institution.

As a known with just a appropriated knowledge of the emergency management of students and wardens residents of Tahfiz institution is only able to try their best to save themselves in the event of an accident without being exposed to the actual emergency management. But with further exposure to the management of the accident they are able to control the situation more regularly and know how to handle the situation in the event of an accident and avoid doing activities that can lead to an accident. So every resident of Tahfiz institution must be responsible for maintaining safety and in accordance with all safety procedures set by the authorities in order to avoid any unexpected events.

### **1.3 Problem Statements**

Not all educational institutions are vulnerable and concerned with the importance of emergency plans and the need for facilities used in the cause of the fire, in this case the Tahfiz institution is also not excluded as statistically there are accidents involving fire at the institution, then precautionary measures and learning needs to be done in institutions to prevent such events not only the occurrence of fire that we should prevent as well as to ensure the school environment is on clean and orderly condition for the avoidance of exposed to students from danger as an example of heavy equipment always used in the kitchen side to cook because as we know there are some Tahfiz institution which are found to involve the students in cooking activities if the equipment is not kept in good condition it is able to carry there is an accident on the student..

While the fire tragedy in Tahfiz Darul Quran Ittifaqiyah Center, Kampung Datuk Keramat that has claimed 23 lives could be illustrated that the incident caused some of the factors previously described including treason and the structure of the dormitory building occupied by the victim. Based on the incident we can see the accidents that occur at school are due to factors such as negligence, treason and failure of auxiliary tools and utilities. That incident happen because the emergency facilities that are provide at the religious school are different between to daily school, based on the statement, it is as we

know that all emergency facilities at daily schools are provided by the government rather than religious schools such as Tahfiz institution, most of which are under the management of the private and certain parties despite the allocation provided by the government but the provision it is only given to the registered only, according to statistics from Malaysian Madrasah Tahfiz Al-Quran Society there are 941 Tahfiz institution in Malaysia and there are only 612 Maahad registered and the rest are still unregistered, it may be more than that statistic because every day there is an addition of religious schools in our country.

Therefore, awareness measures need to be balanced either by the flow of regular schools or religious schools to open the eyes of all parties that security in the religious school area must also follow the established guidelines to avoid the occurrence of undesirable events. April this year, based on “Portal Sistem Maklumat Pendidikan Islam” (SIMPENI) there are 519 such schools are registered throughout the country, but many are believed to have not been registered. It will be difficult to analyse and identify the facility that are provide in the Tahfiz Institutions if there are not registered. When the incident occur the Tahfiz Institution’s cannot be secure due to lack of facility and building structure, the important of this study are to ensure the level of fire prevention system are in a good condition. In term of awareness level some of Tahfiz Institutions already had the emergency training after the tragedy of the Maahad Tahfiz in Dato Keramat but there are no result of these training that can sure that the resident are completely understand and complied to the emergency training, it because the training only give once and by not proper training and follow up it can affect their knowledge and the effectiveness of emergency preparedness in a short time among of the resident.

## **1.4 Research Questions**

Research questions use as a guidance for the entire study, it help the study to be focused and cleared on the right path. The research question of this study are as follow:

- 1.4.1 How vulnerable the Tahfiz Institution to emergency threats at Kampung Janda Baik, Pahang?
- 1.4.2 What is the availability of the emergency management at in Tahfiz Institutions at Janda Baik, Pahang?
- 1.4.3 How much is the level of knowledge of emergency preparedness among wardens and students in Tahfiz Institutions at Kampung Janda Baik, Pahang?

## **1.5 Research Objective**

The objective of conducting research are as below:

- 1.5.1 To determine vulnerability level of Tahfiz Institution's at Kampung Janda Baik, Pahang.
- 1.5.2 To determine the availability of emergency management in Tahfiz Institutions at Kampung Janda Baik, Pahang.
- 1.5.3 To measure level of knowledge on emergency preparedness among wardens and students in Tahfiz Institutions at Kampung Janda Baik, Pahang.

## **1.6 Significance of Study**

The significance of this study are to determine the existing emergency plan is according to the specification that has been set. Other than that, to ensure the assigned warden already increase their knowledge about emergency procedures in the event of

undesirable circumstances, if necessary their must undergo a training course that be conducted by certificated agencies. This studies are to identify the high risk of hazard that can affect the occupant on this Tahfiz Institution by conducted vulnerability analysis, based on the result of this analysis it can show the higher potential risk that will face on the surrounding of Tahfiz Institution. Other than that, this study are conducted due to determine the availability of emergency management due to facilities and responds that are provided in a good condition, it to ensure there are aware and alert for done maintenance for the facilities that must be check and maintain for several times.

Other than that, this study also to measure level of knowledge on emergency preparedness among wardens and students at Tahfiz Institutions at Kampung Janda Baik, Pahang, later by the result of this study we can conclude and provide a suitable awareness program or training that can support the wardens at the Tahfiz Insitutions on how to aware the emergency preparedness that are must follow the guidelines and regulations.

### **1.7 Scope of study**

The study of emergency management are conducted at Tahfiz Institutions around Kampung Janda Baik, Pahang. The studies scope focused on Tahfiz Institutions, which take place in the area of classes, hostel, canteen, assembly area and also prayer rooms. This study also focus on vulnerable factor that can be found on this institution, Other than that, this studies also determine the availability of emergency management and also to level of knowledge on emergency preparedness among wardens and students in Tahfiz Institutions that are located in Kampung Janda Baik, Pahang. The method that are used for this studies are by conducting walkthrough observation, checklist and survey, because by using this method the future result are based on the knowledge from the occupants on this several Tahfiz Institutions in Kampung Janda Baik, Pahang.

- I. Tahfiz A
- II. Tahfiz B
- III. Tahfiz C
- IV. Tahfiz D



- V. Tahfiz E
- VI. Tahfiz F
- VII. Tahfiz G

## **1.8 Conceptual Framework**

Figure 1.1 illustrated the conceptual framework of this research related to the 4 phase of emergency management which is mitigation, preparedness, response and recovery this is for the references if the emergency occur. The potential hazard are included which were earthquake, fire, electrical, utilities outage, lightning strike and landslide. The vulnerability analysis assessment are conducted to identify the potential threat and hazard. The mitigation indicators are consisted of hazard identification and mapping, land use planning, design and construction applications, structural controls. The preparedness indicator were consisted of the preparedness cycle, preparedness programs, and education and training programs. The response indicator were consisted command, control and communication, life safety, federal response and incident command system. The recovery indicator were consisted the economic recovery, volunteer groups, recovery planning tools, business continuity plan and psychological first aid.

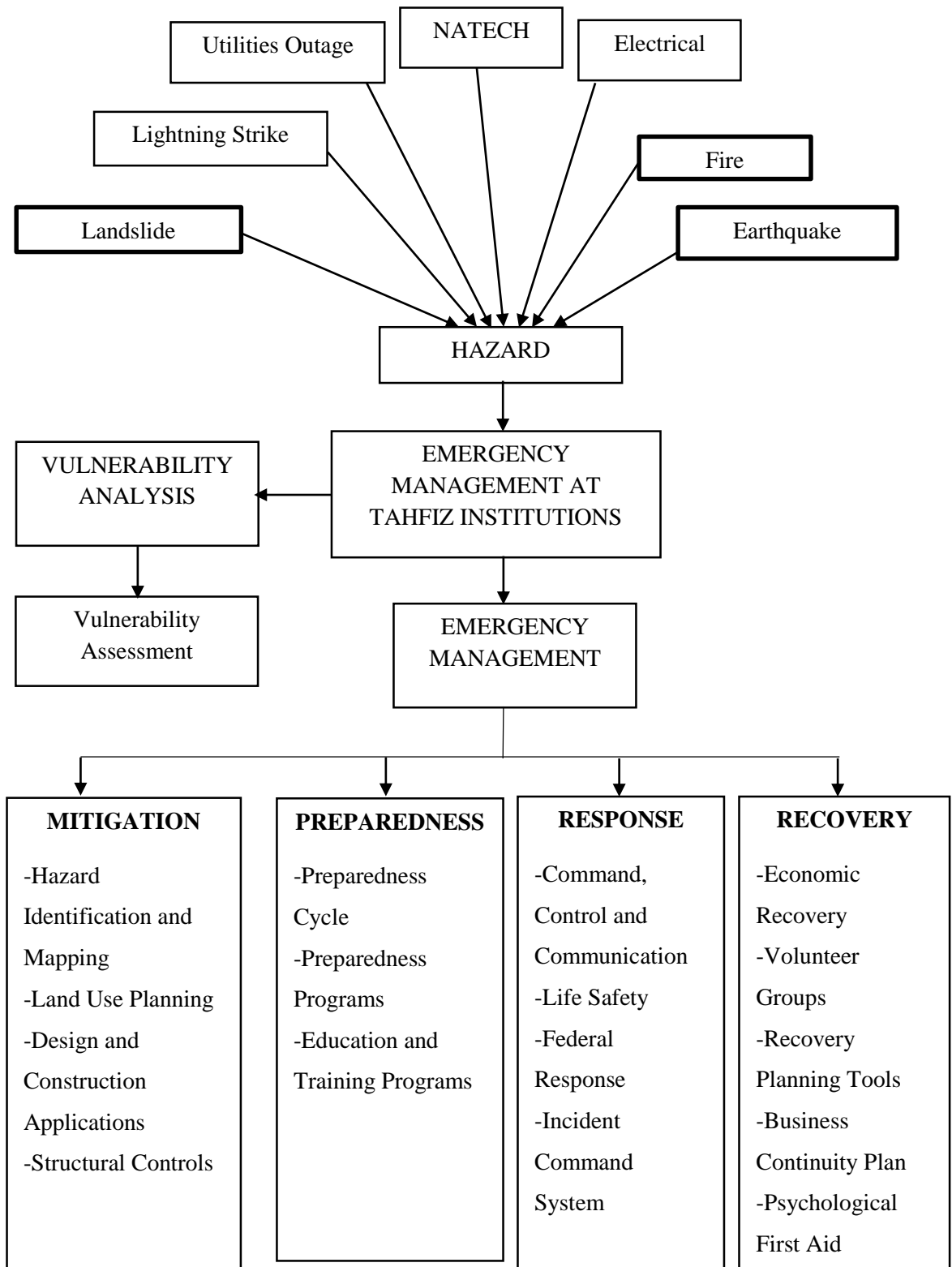


Figure 1.1 Conceptual Framework

## 1.9 Definition of Variables

- a) **Geological or geophysical hazards:** Geological or geophysical hazards originate from internal earth processes. Examples are earthquakes, volcanic activity and emissions, and related geophysical processes such as mass movements, landslides, rockslides, surface collapses and debris or mud flows. Hydrometeorological factors are important contributors to some of these processes. Tsunamis are difficult to categorize: although they are triggered by undersea earthquakes and other geological events, they essentially become an oceanic process that is manifested as a coastal water-related hazard (UNISDR, 2017)
- b) **Emergency:** Emergency is sometimes used interchangeably with the term disaster, as, for example, in the context of biological and technological hazards or health emergencies, which, however, can also relate to hazardous events that do not result in the serious disruption of the functioning of a community or society (UNISDR, 2017).
- c) **Emergency Management:** Emergency management is also used, sometimes interchangeably, with the term disaster management, particularly in the context of biological and technological hazards and for health emergencies. While there is a large degree of overlap, an emergency can also relate to hazardous events that do not result in the serious disruption of the functioning of a community or society (UNISDR, 2017)
- d) **Mitigation:** The adverse impacts of hazards, in particular natural hazards, often cannot be prevented fully, but their scale or severity can be substantially lessened by various strategies and actions. Mitigation measures include engineering techniques and hazard-resistant construction as well as improved environmental and social policies and public awareness. It should be noted that, in climate change policy, “mitigation” is defined differently, and is the term used for the reduction

of greenhouse gas emissions that are the source of climate change (UNISDR, 2017)

- e) **Preparedness:** Preparedness is based on a sound analysis of disaster risks and good linkages with early warning systems, and includes such activities as contingency planning, the stockpiling of equipment and supplies, the development of arrangements for coordination, evacuation and public information, and associated training and field exercises. These must be supported by formal institutional, legal and budgetary capacities. The related term “readiness” describes the ability to quickly and appropriately respond when required (UNISDR, 2017).
- f) **Response:** Actions taken directly before, during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected (UNISDR, 2017).
- g) **Recovery:** The restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster-affected community or society, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk (UNISDR, 2017).
- h) **Vulnerability:** The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards (UNISDR, 2017).

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Fire Accident in Tahfiz Institutions

On Sept 29, 1989, global attention turned to Malaysia when 27 female students of Sekolah Agama Rendah Taufikiah Al-Halimiah, Kampung Padang Lumat, Kedah, perished in their sleep when fire destroyed the school, including eight wooden hostels that were said to be firetraps. The fire was believed to have been caused by a lighted candle. According to Everard *et.al* (2004), quality, health and safety all depend on developing positive attitudes in both staff and children. He also mention all in the school need to be aware of where risks may lie and of the disciplines needed to identify and control the risks. Here the positive atattitude that mention by him was not clarify.

##### 2.1.1 Definition of Fire emergency

According to Gravley (2001) Emergency is any natural or man-made situation that may result in substantial harm to the population or damage to the property. .Emergency is common to everybody. Emergency is sometimes used interchangeably with the term disaster for example, in the context of biological and technological hazards or health emergencies, which can also relate to hazardous events that do not result in the serious disruption of the functioning of a community or society (UNISDR, 2017).

According to National Fire Protection Association (NFPA, 2014) fire is a rapid oxidation process, which is a chemical reaction resulting in the evolution of light and heat in varying intensities. Flames are typically classified as combustion of oil or fuel in the state of fire such as firecracker, or fire or fire place or a violent, destructive and uncontrolled burning such as in buildings or wild fire. (Martin *et al.*, 2016) study that fires

are adverse events with tangible costs to property and human life. (Martin *et al.*, 2016) stated that the quantification of costs can be provided in metric for understanding the social and economic impact of fire, which can be useful for assessing and influencing fire prevention and protection. Fires also can be inflict adverse consequences on the natural environment (Martin *et al.*, 2016). Fire accidents can result from a variety of factors that combine and influence human behaviour and from the environment that are capable of producing fire. Fire accidents can endanger to various parties because of the behaviour of a person is able to fatal to humans and damage property that will cause a very high loss.

### 2.1.2 Cause of Fire Accident

Fire accidents can result from a variety of factors that combine and influence human behaviour and from the environment that are capable of producing fire. Fire accidents can endanger to various parties because of the behaviour of a person is able to fatal to humans and damage property that will cause a very high loss. In Figure 2.1 National Fire Protection Association (NFPA, 2014) study found that the frequency reported home fires are limited to fires in the structures, all home structure fires and home fire deaths are shown in the top two rows for context on the Figure 2.1

| Type of incident  | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Totals  |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|
| <a href="#">All reported home structure fires 2007-2011</a>                                   | 11% | 9%  | 9%  | 8%  | 8%  | 7%  | 7%  | 7%  | 7%  | 8%  | 9%  | 10% | 366,600 |
| <a href="#">All home fire deaths 2007-2011</a>  | 14% | 12% | 10% | 8%  | 7%  | 6%  | 6%  | 6%  | 6%  | 7%  | 8%  | 11% | 2,570   |
| <a href="#">Home cooking fires 2007-2011</a>  | 9%  | 8%  | 9%  | 9%  | 9%  | 8%  | 8%  | 8%  | 8%  | 9%  | 9%  | 9%  | 156,600 |
| <a href="#">Home grill fires including outside fires 2007-2011</a>                            | 3%  | 4%  | 6%  | 9%  | 13% | 13% | 17% | 13% | 10% | 5%  | 4%  | 3%  | 8,800   |
| <a href="#">Home heating fires 2007-2011</a>  | 19% | 15% | 12% | 6%  | 4%  | 3%  | 3%  | 2%  | 3%  | 7%  | 10% | 16% | 60,420  |
| <a href="#">Home structure smoking-material fires 2007-2011</a>                               | 8%  | 8%  | 9%  | 10% | 10% | 9%  | 8%  | 8%  | 8%  | 8%  | 8%  | 7%  | 17,600  |
| <a href="#">Home electrical distribution and lighting 2007-2011 (not electrical failures)</a> | 11% | 9%  | 9%  | 8%  | 7%  | 8%  | 8%  | 8%  | 7%  | 7%  | 8%  | 11% | 22,600  |
| <a href="#">Home child play fires 2007-2011</a>   | 9%  | 8%  | 9%  | 8%  | 8%  | 9%  | 12% | 9%  | 7%  | 6%  | 8%  | 8%  | 7,100   |
| <a href="#">Outside child play 2007-2011</a>  | 8%  | 5%  | 9%  | 9%  | 8%  | 10% | 19% | 7%  | 7%  | 7%  | 6%  | 5%  | 37,400  |
| <a href="#">Lightning (all types of fires) 2007-2011</a>                                      | 1%  | 1%  | 3%  | 6%  | 11% | 23% | 23% | 21% | 7%  | 2%  | 1%  | 1%  | 22,600  |
| <a href="#">Home candle fires 2007-2011</a>   | 11% | 9%  | 8%  | 8%  | 7%  | 7%  | 6%  | 7%  | 7%  | 9%  | 9%  | 12% | 10,630  |
| <a href="#">Home Christmas tree fires 2007-2011</a>   | 39% |     |     |     |     |     |     |     |     |     |     |     | 230     |
| <a href="#">Brush, grass or forest 2007-2011</a>  | 6%  | 8%  | 13% | 13% | 9%  | 9%  | 11% | 8%  | 7%  | 6%  | 7%  | 4%  | 135,400 |
| <a href="#">Home intentional fires 2007-2011</a>  | 8%  | 7%  | 9%  | 9%  | 8%  | 8%  | 9%  | 9%  | 8%  | 8%  | 8%  | 8%  | 28,900  |

Figure 2.1 Fire Analysis and Research Statistical Reports 2014

Source: National Fire Protection Association (NFPA, 2014)

Jabatan Bomba Dan Penyelamat Malaysia (2017) also stated that based on 5,485 cases that are recorded against the building 4,456 cases occur because of other causes and 416 cases cause by electrical in the fire accidents on 2016. Other factors leading to the occurrence of fire inside the building are due to the environmental factor and the misconduct of the person other than damage and failure in the electrical part also leads to fire within the building.

### **2.1.3 Fire Accident in Malaysia**

The statistics of fire accidents in 2016 are 49,875 cases are recorded by Jabatan Bomba Dan Penyelamat Malaysia (JBPM) 2016, which is 19,448 cases against the forest fire and 5,485 cases against the building were recorded due to high number of incident. Jabatan Bomba Dan Penyelamat Malaysia also stated that based on 5,485 cases that are recorded against the building 4,456 cases occur because of other causes and 416 cases cause by electrical in the fire accidents.

In January 2017, Dato' Wan Mohd Nor Ibrahim stated that the death rate due to fire in year 2016 is 107 victims and property loss of 2.9 billion, the rate has decreased from the previous year, in 2015 the rate of death was 153 victims and the loss rate was 4.4 billion, with the value of 34% has been reduced to the victim's loss of property value.

### **2.1.4 Religious School and Past Fire Accident**

A religious school is a private primary or secondary school with a religious with support from the organization. This school also have curriculum includes general religious education in addition to secular subjects, such as science, mathematics and language arts. There have several religious school based on the religious such as for Christian they have Parochial school and for Muslim and non-muslim they have Madrasa it for Islamic education means education in the light of Islam itself ,which is rooted in the teachings of the Quran. (Feldman,2006) studies this religious school will be describe themselves as non-sectarian institutions that emphasize a particular language Arabic and Hebrew, it respectively and both have been criticized on the assumption that they will be

organized around the distinctive cultures and thus religions associated with those languages.

In September 2017, the total of 25 people were killed, in a fire at Tahfiz Darul Quran Ittifaqiyah Center, Kampung Datuk Keramat and "The number of confirmed deaths was 23 students and two guardians," are stated by Khirudin Drahman, head of the Kuala Lumpur fire and rescue department (BERNAMA, 2017). According to JBPM fire tragedies in religious schools and frequent reconstruction of Tahfiz need to be addressed immediately as the records a total of 211 fires involving Tahfiz centers throughout the country between years 2015-2017. On December 1, 1958, the Our Lady of the Angels School in Chicago, Illinois was destroyed by fire, and the total of victims is 95 people were killed on the tragedy 92 of them are students and 3 of them are nuns, it happened due to faulty design and material of the buildings that led to this accident occurring.

## **2.2 Other Potential Hazards in Tahfiz Institutions**

According to UNISDR (2017) hazard is a process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation.

Hazards consist of two categories such as natural and man-made hazards include, for example, landslides, floods, fires, earthquakes and failures in building structures and in terms of electrical wiring that can bring harm to consumers. They have a significant social, environmental and economic impact as they will affect many parties in daily activities, as we know that daily activities will be related to environmental stability from any harm.

Landslides are geological events that include most of the earth's movements, such as falling rocks, slope failure, and shallow trash flow, see flow. Although gravity acting on steep slopes is the main cause of landslides, there are other additional factors erosion by rivers, glaciers, or sea waves producing steep slopes of rock or soil are weak due to



saturation by snow or heavy rain an earthquake that produces tensions causing weak slopes to collapse volcanic eruptions produce ash, heavy rain, and trash flow. Tremors from the machine, traffic, explosives, even the thunder may trigger the collapse of the weak slope. Extreme weight resulting from the accumulation of rain or snow, stacks of rock or ore, from garbage dumps, or man-made structures that put pressure on weak slopes to collapse and other structures. Groundwater pressure acts to make the slope unstable on shallow soils, deep-rooted plant felling that bind colluvium to base stones. According to the definitions given by (Varnes, 1984), the landslide hazard maps should also provide information of the probability of occurrence of landslides and their magnitudes.

Earthquake is a phenomenon of earth's surface movement due to sudden movement of rocky ground. Earthquakes occur when energy stored in the earth, usually in the form of rock friction, is suddenly detached. An earthquake is measured using a tool called the Richter scale. This earthquake can be graded one to nine based on its size based on the Richter scale. An earthquake can also be measured using the scale of the Mercalli Scale. Tremor often occurs but not all of the tremors are strong enough to allow us to feel. Earthquakes occur daily on earth, but most are small and do not cause any damage.

Small earthquakes will also accompany large earthquakes, and can occur either before or after the major earthquake. It is called a follow-up earthquake. Seismologists study the episodes of the earthquake such as friction on the longitudinal lines that result in earthquakes, anything happening on the surface of the earth, the way the energy moves from within the earth to the surface of the earth and this way of energy causes destruction. By studying the parts and processes of earthquakes, seismologists are aware of the effects and ways of predicting the emergence of their destruction. Tectonic earthquakes are caused by energy releases resulting from rock friction in elongated crack along the tectonic plate boundary. Energy generated by pressure between rocks is known as tectonic defects. This effect is like a pulled rubber band and is released suddenly.

Structural failure has a several factor actors that make a building last for a long time without any damage are due to several factors such as the building design as a building must be appropriate to the site and surrounding area to avoid such landslides and the design shall be complied with Code of Practice. Without proper design it can will lead to land failure to accommodate the building due to non-compliance standards. Otherwise, the building materials used must be non-combustible to prevent fires if they are in extreme heat that can lead to fire events. This must have proper maintenance to ensure the building condition are complied with the standard that are given.

### **2.3 Vulnerability Analysis**

According to Federal Emergency Management Agency (FEMA) vulnerability assessment are to evaluates vulnerability, or any weaknesses that can be exploited by an aggressor, of critical assets across a broad range of identified threats and provides a basis for determining mitigation measures for protection of people and critical assets. This is a systematic process of evaluating the probability and potential impact of each emergency threat. Vulnerability analysis also used a numerical system to assign probabilities, estimate impacts and assess resources. Vulnerability analysis is generally a three step of process of all risks or hazards are identified, the probability of the occurrence of each risk or hazard that are estimated also the severity of the consequences of hazard are also estimated.

FEMA describes any emergency that are unplanned event that can cause deaths or significant injuries to employees, customers or the public or that can shut down the business, disrupt operation, cause physical or environmental damage, or threaten the facility's financial standing or public image. Emergencies can create a variety of hazards for workers in the impacted area

Based on the vulnerability assessments is it is then possible to rank order the likely risks or hazards faced by a facility that reflects both the probability of occurrence and the severity of the consequences. This prioritization enables a facility to match resources and planning with those higher priority risks. To ensure the Tahfiz Institutions are in safe

schools environment there are several step that must be follow, according to FEMA it crucial to identifies the value of a school’s assets such as people, buildings, equipment, and processes that need to be protected, recognizing that students and staff will always be a school’s most vital asset requiring protection. This assessments are conducted to identify and define the critical threats and hazards that could be cause harm to a school. By combining the results of the asset value and threat in asset value assessment, vulnerability assessment can be achieved. Through vulnerability assessment, risk assessment can be performed to measure the risk level accident. The final step of the process is risk management decisions that are discussed to prioritize and decide on the best and most cost-effective mitigation measures to implement to achieve the desired level of protection on Tahfiz Institutions. In Figure 2.2 it shown the assessment model for the vulnerability analysis.

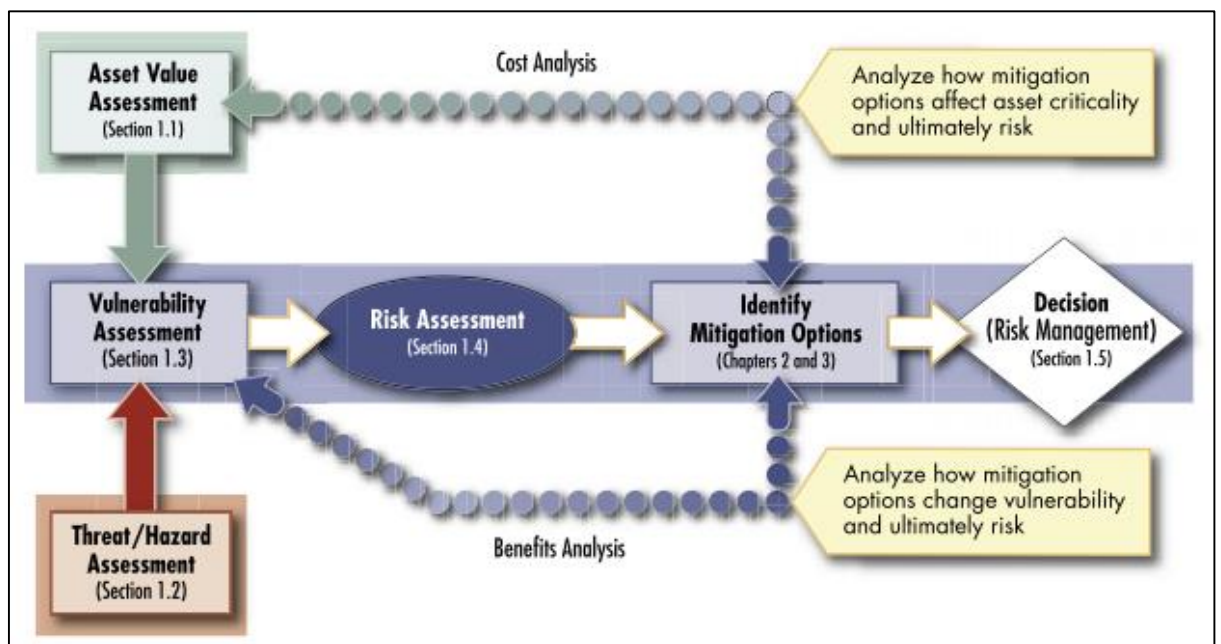


Figure 2.2 The assessment process model

Source: Federal Emergency Management Agency (2002)

## **2.4 Emergency Management**

In general, emergency management is the mitigation tool that are regulated by authority and enforcement bodies, it is the way of the prevention of the accident that can be occur anytime. Prevention campaign can be implement by the emergency management drill to all occupants that have the high risk of accident. Nowadays, the threatened by natural and manmade disasters and will be affected to the critical infrastructures and social structures ,but with all support from the other we can control emergency that will happen with the suitable ways and structured plan. Geographical factor are one of aspect that need to be taking serious because nowadays most of today's development is more concentrated in highland areas, it is based on temperature or weather and beautiful scenery without considering the risks the resident will be face. This is because the probability of risk that the resident will be face such as landslides and earthquakes as there will be instability of the land structure due to the rampant development activity, it will also slow down rescue operations in the event of an accident because the area is difficult to get into the rescue team and will take a long time to do the rescue mission. Therefore, internal quick respond is very important in the emergency because we need to ensure that the existing emergency equipment is in good condition capable of saving ourselves while waiting for help from authorities, but we should know the right authorities to contact if accident occur it is capable of expediting rescue operations

According to FEMA by conducting vulnerability analysis it can relate to 4 phase of Emergency Management that come up with proper recommendation due to the analysis. Table 2.1 shown the phase of emergency management.

Table 2.1 Phase of Emergency Management

| Emergency management | Justification  |
|----------------------|--|
| <b>Mitigation</b>    | <p>Preventing future emergencies or minimizing their effects</p> <ul style="list-style-type: none"> <li>• Includes any activities that prevent an emergency, reduce the chance of an emergency happening, or reduce the damaging effects of unavoidable emergencies.</li> <li>• Buying flood and fire insurance for your home is a mitigation activity.</li> <li>• Mitigation activities take place <b>before</b> and <b>after</b> emergencies.</li> </ul> |
| <b>Preparedness</b>  | <p>Preparing to handle an emergency</p> <ul style="list-style-type: none"> <li>• Includes plans or preparations made to save lives and to help response and rescue operations.</li> <li>• Evacuation plans and stocking food and water are both examples of preparedness.</li> <li>• Preparedness activities take place <b>before</b> an emergency occurs.</li> </ul>  |
| <b>Response</b>      | <p>Responding safely to an emergency</p> <ul style="list-style-type: none"> <li>• Includes actions taken to save lives and prevent further property damage in an emergency situation. Response is putting your preparedness plans into action.</li> <li>• Seeking shelter from a tornado or turning off gas valves in an earthquake are both response activities.</li> <li>• Response activities take place <b>during</b> an emergency.</li> </ul>         |
| <b>Recovery</b>      | <p>Recovering from an emergency</p> <ul style="list-style-type: none"> <li>• Includes actions taken to return to a normal or an even safer situation following an emergency.</li> <li>• Recovery includes getting financial assistance to help pay for the repairs.</li> <li>• Recovery activities take place <b>after</b> an emergency.</li> </ul>  |

Source: Federal Emergency Management Agency (2010)

## **2.5 Mitigation**

According to FEMA there are state that the practitioners are agree that the primary intent of mitigation is to ensure that fewer communities and individuals become victims of disasters and accident. The goal of mitigation is to create economically secure, socially stable, better built and more environmentally sound, communities that are out of harm's way. There are numerous tools available to accomplish this task. Other than that, FEMA also stated mitigation also can be define as "acting before a disaster strikes".

### **2.5.1 Hazard Identification and Mapping**

The most essential part of any mitigation strategy or plan is an analysis of what the hazards are in a particular area. The resources for hazards identification are numerous. The Federal government has extensive programs that map virtually every hazard and these products are available to communities.

The flood awareness program highlighted by the National Security Council (MKN) has provided a detailed study of the flood events that have occurred in the country, hence the MKN has provided guidelines for flooding for pre, post and post since the incident occurred, there are some flash floods occurring in the Janda Baik area as mentioned on (BERNAMA, 2015) due to the heavy rainfall and the river water level around Kampung Janda Baik is at a dangerous level and has been abundant in the surrounding area has caused flooding.



Figure 2.3 Several of earthquake cases

Source: BERNAMA (2015)

Meanwhile, the Malaysian Meteorological Department has provided floors maps and research on earthquakes around Janda Baik, and there are evidence of earthquakes occurring in the Janda Baik area in 2009, as indicated by the Malaysian Meteorological Department (JMM), around 2.2 scalar Richter has been recorded on this earthquake. In Figure 2.3 it shown the several earthquake case in Janda Baik. In addition JMM reported that in November 2007 until May 2009, there were 29 earthquakes recorded in the Bentong area. As stated by Datuk Seri G Palanivel, the Ministry of Natural Resources and Environment in (BERNAMA, 2015), government will start the intensify efforts to plant more trees this year after launching a campaign to plant over four million trees last year, in an effort to revive illegally explored areas and logging is rampant so that natural disasters such as bad floods and landslides are not repeated.

### **2.5.2 Structural Mitigation**

Structural mitigation have usually been used to protect existing development. In doing this, it will have a positive and negative impacts on the areas they are not protecting. By completely safe structures it can be designed if exact information is known concerning loads and strengths involved during the lifetime of these structures, and exact methods of structural analysis are available. In the real world uncertainties exist in this information as well as in the method of analysis. To account for these uncertainties, various factors of safety have been used in the design of structures. Probabilistic methods have been applied for the interpretation as well as determination of these factors of safety. Techniques in structural analysis are being refined continuously.

Based on information that provided by JBPM (2017) only 80 out of 1,238 Tahfiz Institutions in the country are receive “Building Approval” from them. A total of 367 fire hazard notices have been issued to 83 Tahfiz Institutions and they are given a period of 90 to 180 days to comply with the prescribed standards. The 90-day period is given to the Tahfiz Institutions to comply with fire and fire extinguishing facilities and 180 days for major structures such as stairs, barrier walls and so on. Within, inspection on each Tahfiz Institutions from the JPBM it able to ensure that every Tahfiz Insitutions in Malaysia has a safe building structure and is endorsed by JPBM.

### **2.5.3 Design and Construction Applications**

Factors that make a building last for a long time without any damage are due to several factors such as the building design as a building must be appropriate to the site and surrounding area to avoid such landslides and the design shall be complied with Code of Practice. Otherwise the building materials used must be non-combustible to prevent fires if they are in extreme heat that can influenced to occur accident to happen.

Based on the statement by Datuk Abdul Wahab Mat Yasin (BERNAMA, 2017) director of the Jabatan Bomba dan Penyelamat Negeri Pahang every Tahfiz Institutions



must has to prepare a building plan approved by the Jabatan Bomba dan Penyelamat Malaysia (JBPM) and Pihak Berkuasa Tempatan (PBT).

This is because the design of buildings and electrical wiring systems that are not in accordance with the rules and regulations are set to be the main cause of the occurrence of fire incidents to the death and based on the examination done in most Tahfiz Institutions it found that there are many weaknesses that need to be rectified to ensure the unnecessary event is not is valid.

This is because based on a statement from the Dewan Bandaraya Kuala Lumpur (DBKL) (BERNAMA, 2017) the incident occurred in Darul Quran Ittifaqiyah shows that the owners and schools operators of Darul Quran Ittifaqiyah have no permission from DBKL and fire safety certificates to operate the school. The examination indicated that the school had violated the safety guidelines, as it only had one entrance and exit, not according to the needs of a school classroom and it was at high risk for accidents.

#### **2.5.4 Non-Structural Mitigation**

According to (Reeds, 2015) non-structural mitigation that involves in the emergency management are on the personal level that not structurally or physically evident as a protective defend such as storm shelter. In general, non-structural mitigation are focused by providing the insurance for the school and provide any preparedness programs, provide training and planning that can be considered as the item of non-structural mitigation.

In order to ensure this non-structural mitigation are covered on the Tahfiz Institutions, the Tahfiz management need to provide the emergency training and it need to conducting by JBPM to ensure the information that are provide are easy to understand by the Tahfiz residents. Other than that to ensure the resident of Tahfiz are aware and know about the hazard in Tahfiz the management need to organizing programs such as “5 minutes for OSH” for every week to ensure the student are fully aware on the hazard that can occur on their Tahfiz area. This program are also one of initiatives from National Occupational

Safety and Health Institute (NIOSH, 2017) in order to ensure the Tahfiz Institutions are providing the safety and health information.

## **2.6 Preparedness**

Preparedness in the field of emergency management can best be defined as a state of readiness to respond to a disaster, crisis, or any other type of emergency situation (Haddows, 2010). The other opinion from World Health Organization (WHO) emergency preparedness is a programme that will be long-term development activities whose goals are to strengthen the overall capacity and capability of a country to manage efficiently all types of emergency and to bring about an orderly transition from relief through recovery and back to sustainable development. According to (Bahn *et al.*, 2009) preparedness one of the strategy to informs the staff about on how to keep students safe in the event of an incident and develop and practice routines that can reduce the likelihood of panic during stressful situations.

By providing this kind of emergency preparedness training it can help the occupants in the Tahfiz Institutions are in a state of on how to control the situation if incident event occurs in their Tahfiz , such as they know how to response and know the procedure of communication during the emergency.

### **2.6.1 Preparedness Cycle**

Today we have to adopt this systematic approach as one of the functions of preparedness in emergency management, this is also a way to ensure all stakeholders in emergency management include the individuals involved in ensuring the emergency management system to be more organized and easy to be referred.

As demonstrates by FEMA in Figure 2.4 its show the planning process in a preparedness that needs to be emphasized, so that it becomes more organized, therefore it is necessary to begin by identifying the dangers inherent in the workplace so that we are able to provide a more systematic approach direction to create and improve readiness. In order to make this cycle a party must take action as it is not only in the government's

jurisdiction but it is the jurisdiction of all levels of individuals, non-governmental organizations or other entities.

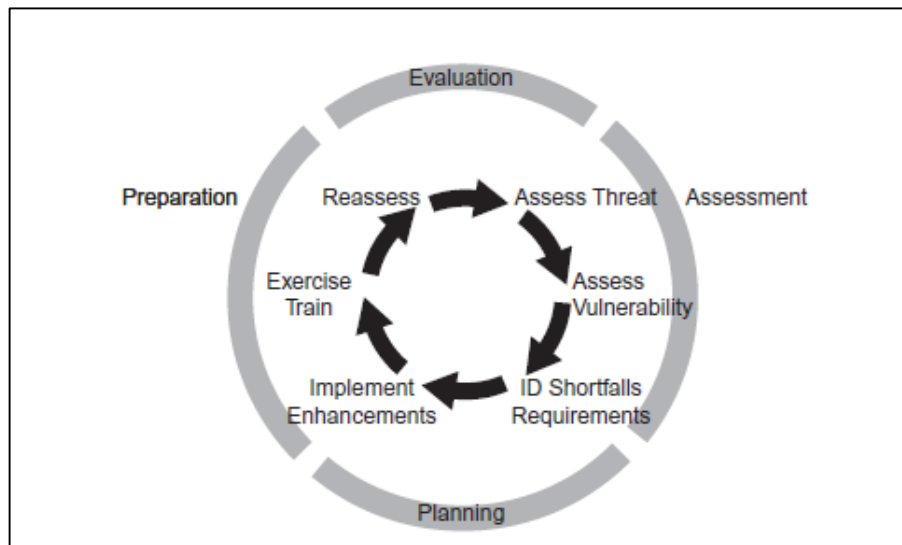


Figure 2.4 The preparedness planning cycle

Source: Federal Emergency Management Agency (2007)

There are several step that are the main operation on preparedness planning cycle which is

- i. Planning
- ii. Organization and Equipment
- iii. Training
- iv. Exercise
- v. Evaluation and Improvement

i. Planning

Figure 2.4, the preparedness cycle begins with the creation of various plans through which disaster response and recovery become possible.

Planning is one of the most important efforts, because it takes time and effort from many parties to achieve the goals set. It starts with the hazard risk assessment process that we need to do before proceeding with prevention and preparedness, this way is done to assess and identify the hazards that should be prioritized first. This is because the area of Kampung Janda Baik, is often exposed to natural hazards such as flash floods, landslides and earthquakes as a danger that we cannot afford when it will happen.

According to FEMA, there is an opinion that mention modern emergency management has created the most effective plan to deal with all the hazard risks involved, so in this way it is able for all parties to know the readiness to deal with the hazard more effectively by taking into consideration the factors that affects the possible dangers. As stated in the Guide For Developing High-Quality School Emergency Operations Plans (2013) to ensure the plan are suitable the management need to organize are table top exercise, drill and all of them need to review to ensure the result are on the positive result. Therefore, each Tahfiz Institutions should use the available funds to provide equipment, resources and trained staff so that they are ready for any potential hazard and provide this emergency exercise to make them are in a ordinary condition when it comes to danger.

ii. Organization and Equipment

Emergency management is a method that requires assistance from equipment readiness that reduces danger in the event of an emergency. There are several categories of equipment used in the emergency management profession including Personal Protective Equipment (PPE) as we know it is used really protecting respondents from being impacted from harm as well as communication tools such as walkie-talkie as well

as mobile phones allow respondents to interact with each other within and between different organizations within the use of different equipment. Besides that, the provision of special search and rescue equipment should be in a condition that allows the respondent to enter the building more easily by means of tools such as navigation and tools capable of detecting signs of life such as humans or animals, thus we are able to find victims in the event of stuck in the fire as we know there are so many Tahfiz Institution that are often exposed to fire and there are some victims who cannot be saved for not being able to detect where the victim was then.

As mentioned by FEMA most of the emergency equipment used is usually in the emergency operation plan, in the plan also states the existing hazard and the functions contained in the equipment. As we know to provide the best emergency equipment for some Tahfiz Institutions is impossible because the cost involved in purchasing and maintenance is very high, this cost is also incapable of being borne by the people themselves. However, we know it is quite difficult to reach all emergency equipment that should be in the Tahfiz Institution, but with the courtesy of the government as stated by Prime Minister Dato 'Seri Najib Tun Razak on (BERNAMA, 2017) the government has announced an allocation of RM30 million to upgrade all Maahad Tahfiz throughout the country, so with this provision it is able to assist Tahfiz Institution to provide emergency equipment according to the specification that are fixed.

### iii. Training

Emergency training must always be done regularly because this way it is able to ensure that Students and Warden at Tahfiz Institution know how to save themselves in the event of an undesirable accident. Therefore, the officer or warden at Tahfiz Institutions should undergo competency training in emergency management in order to ensure that they have been placed in the emergency department which should be taken care of if the accident occurs. As stated by Tan Sri Lee Lam Thye in (BERNAMA, 2017), the National Occupational Safety and Health Institute (NIOSH) will organize a nationwide security campaign to help create safety awareness at all Tahfiz institutions or

religious schools ensuring the effectiveness of the program by providing OSH guidelines that can be used by all central throughout the country .

Therefore, with this voluntary assistance it will assist the officers and warden of the Tahfiz Institution to identify the types of hazards as well as the necessary training to control the situation danger. In addition, there are also initiatives by the JBPM in each state, among them from Selangor Its director Azmi Osman said in the (BERNAMA, 2017), it would hold a fire safety seminar involving managers, principals and security guards at the state's central Tahfiz Institutions, this is a proactive step to educate and provide training on fire safety in the center of Tahfiz Institutions.

The effort was also resumed by Deputy Director of JBPM Terengganu Sharikan Bustaman, stated in (BERNAMA, 2017), it briefed and taught how to escape and fire extinguishers to all residents of the Tahfiz Institutions, besides that it will also monitor from time to time to ensure that Tahfiz students including warden and teachers get information and skills especially how to save themselves during an emergency. Therefore, he also mentioned to all Tahfiz Institutions whether they were registered or not immediately coming to the state-level security courses to be conducted soon. With such help it is possible for the Tahfiz Institutions to cope with possible problems in their area.

#### iv. Evaluation and Improvement

The final step in this cycle is the assessment and improvement that generally results from the training, with the plans, equipment, and trained staff as well as the response to the scenario envisaged that it is necessary for us to make the necessary improvements to this because it leads to planning to buy equipment more or better, and more comprehensive training should be used. In addition, Assessment and improvement are also the result of actual disaster experience. Changes in planning, the purchase of more or better equipment, and more comprehensive training should be used. Evaluation and improvement are also the result of actual disaster experience. Tan Sri Lee Lam Thye

stated in BERNAMA (2017) NIOSH will also provide a special manual and standard form to enable the audit process to be carried out quickly and accurately. This is capable of issuing accurate results on security at Tahfiz Institutions.

The readiness cycle is one that, as a cyclical nature of its cycle, continues. Besides, all the steps that take place at all times, in evolutionary conditions and continuous improvement as information, budgets, staff, political will, and perception changes.

### **2.6.2 Preparedness Program**

Preparedness program can be done such as getting fire drill training that can be conducted by JPBM this program also can prevent unwanted misfortune accident to occur. The initiatives that can be done is to create a “Skwad Bomba Pondok” and this matter was launched by Deputy Prime Minister Datuk Seri Dr Ahmad Zahid Hamidi on 6 May 2017 to increase readiness to prevent fires in Tahfiz Institutions (BERNAMA, 2017). Other than that, there also have some initiative by NIOSH in order to provide the safety framework to ensure the Tahfiz institution will be safe place to conduct learning session to the students which is provide the “Emergency Response Plan Program” with this indirect effort it able to protect Tahfiz institutions teachers, asatizah, staff and students in the emergency situations on the particular dangers such as fire and other natural disasters and this effort is due to cooperation from NIOSH Malaysia, relevant authorities and from the Tahfiz institution themselves (NIOSH, 2017).

### **2.6.3 Education and Training Programs**

Education and training are very important in the preparedness it is because without both these resources one cannot afford to carry out a thing or work properly. Just as can be done at Tahfiz Institutions as we know Tahfiz Institution is an Institute that practices Islamic religious education such as memorizing the Quran and hadiths. But based on the statement by Deputy Prime Minister Datuk Seri Ahmad Zahid Hamidi in BERNAMA (2017), insisted for Tahfiz Institutions management not to ignore the usual aspects such as ensuring the safety of his students, adding that even though our purpose is to go towards

the hereafter, safety features should be given priority. There some of initiative from NIOSH to provide some information about the awareness that can be known to avoid the accident occur such as “ 5 Minutes for OSH ” this program can provide the information to the students such as about the cause of the accident that happen, the type hazard and also how to control the risk of some of hazard, this program is very suitable for Tahfiz institutions because it can be conducted by their wardens at the Tahfiz Institution by this implementation and approach it will make the student feel ease to adapt the information that are given.(NIOSH, 2017)

## **2.7 Response**

As stated by UNISDR (2017) response are the some actions that are taken directly before, during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected. Meanwhile disaster response is predominantly that are focused on immediate and short-term needs and is sometimes it called as disaster relief. The effectiveness response that are relies on disaster risk-informed preparedness measures, including the development of the response capacities of individuals, communities, organizations, countries and the international community.

The institutional elements of response often include the provision of emergency services and public assistance by public and private sectors and community sectors, as well as community and volunteer participation. “Emergency services” are a critical set of specialized agencies that have specific responsibilities in serving and protecting people and property in emergency and disaster situations. They include civil protection authorities and police and fire services, among many others. The division between the response stage and the subsequent recovery stage is not clear-cut. Some response actions, such as the supply of temporary housing and water supplies, may extend well into the recovery stage.



### **2.7.1 Command, Control and Communication**

As stated on American Public Work Associations (2005) the command control and communication (C3) is are part on the Incident Command System (ICS), the C3 are usually are used on the part of response. The function of C3 is to managing the crisis of response in are well planned. The operation for command and control need to be clear so that the response can minimizes the loss of life, quickly restores critical lifelines and minimizes property damage. Meanwhile, Communications has become an increasingly critical function in emergency management. The dissemination of timely and accurate information to the general public, elected and community officials, and the media plays a major role in the effective management of disaster response and recovery activities (Haddow, 2010). Communicating preparedness, prevention, and mitigation information promotes actions that reduce the risk of future disasters and it to provide to the public notification, warning, evacuation, and situation reports on an ongoing disaster.

The Tahfiz Institutions need to adopt this C3 operation in order to improve the command, control and communication during the emergency response operating to ensure the operating are in systematic and smooth. Other than that, C3 can improve their knowledge about the emergency management by establish this C3 to the Tahfiz community.

### **2.7.2 Life Safety**

As the built environment and risks evolve, it has are challenges to protect people from fire and related hazards. As mentioned by National Fire Protection Association (NFPA, 2016), life Safety Code is the most widely used source for strategies for occupant safety throughout the life of a building. It is vital for architects, engineers, building owners and building managers, hospital administrators, and AHJs, NFPA 101 covers it all such as egress, sprinklers, alarms, emergency lighting, smoke barriers, special hazard protection, and more. Moreover, warning, notifications and communications it are tool that can ensure everyone are alert on emergency if there occur, this tool system shall be reliable, redundant, and interoperable. Emergency warning, notification, and

communications protocols and procedures shall be developed, tested, and used to alert everyone due to the potentially at risk from an actual or impending incident (NFPA, 2016).

Based on NFPA (2016) planning and design process are important to develop strategies, plans, and required capabilities to execute the program and by providing strategic planning it shall can be define the entity's vision, mission, and goals of the program. Other than that, crisis communications and public information are important they are related on life safety, it because there need to develop a plan and procedures to disseminate information so that it can be respond to the requests information from the following audiences before, during, and after an incident Tahfiz Institutions need to ensure that the building is constructed with the water sprinklers, alarms, emergency lighting, smoke barriers and special hazard protection. Based on providing this kind of protection equipment in the Tahfiz Institutions if the emergency occur in the building the resident will notified by the alarm and if the fire accident occur the water sprinkler will activate and will reduce the fire emergency.

### **2.7.3 Federal Response**

Agensi Pengurusan Bencana Negara (NADMA) is the principal policy making and coordinating body for disaster management. The NADMA coordinates and plans all activities related to preparedness, prevention, response or relief operations and recovery or rehabilitation of disaster management. According to Majlis Keselamatan Negara Arahan 20 that are state the policy and mechanism for National Disaster and Relief Management is the main guideline for disaster management in Malaysia. The directive prescribes the mechanism on the management of disasters including the responsibilities and functions of related agencies under an integrated emergency management system.

This is achieved through the establishment of the Disaster Management and Relief Committee at three different levels (federal, state and district levels) pending the severity of the disaster. The federal response that are used are need suitable for the type of

emergency such as fire accident, according to Majlis Keselamatan Negara Arahan Nombor 20 there are several agencies that are involve in this incident such as local authorities, JBPM, Jawatankuasa Pengurusan Bencana Daerah, Negeri dan Pusat, Kementerian Kesihatan Malaysia (KKM) Polis DiRaja Malaysia (PDRM) and also Angkatan Tentera Malaysia (ATM).

Other than that by the statistical data that are provided on the NADMA Portal it shows in Figure 2.5 until April 2018 there are several accident that happen due to natural hazard in Malaysia such as earthquake, landslide, floods and hurricane and this accident are need critical respond unit to handling this accident ,there are special team that are need to control the emergency which is stated on Majlis Keselamatan Negara Arahan Nombor 20 , Angkatan Pertahanan Awam Malaysia , Kementerian Kesihatan Malaysia and supported from JPBM, PDRM and also ATM, by supportive from this authorities it easily to handling the accident that are happen.

Tahfiz Institution need to ensure they know the authorities that they need to contact if the emergency occur, it because in the previous studies it show in the area of Kampung Janda Baik there are several cases of the natural hazard such as landslide, flash flood ang earthquake. If this emergency are occur ,there are special team that are need to control the emergency which is stated on Majlis Keselamatan Negara Arahan Nombor 20. The Tahfiz institution need to familiar and know about the authorirties.

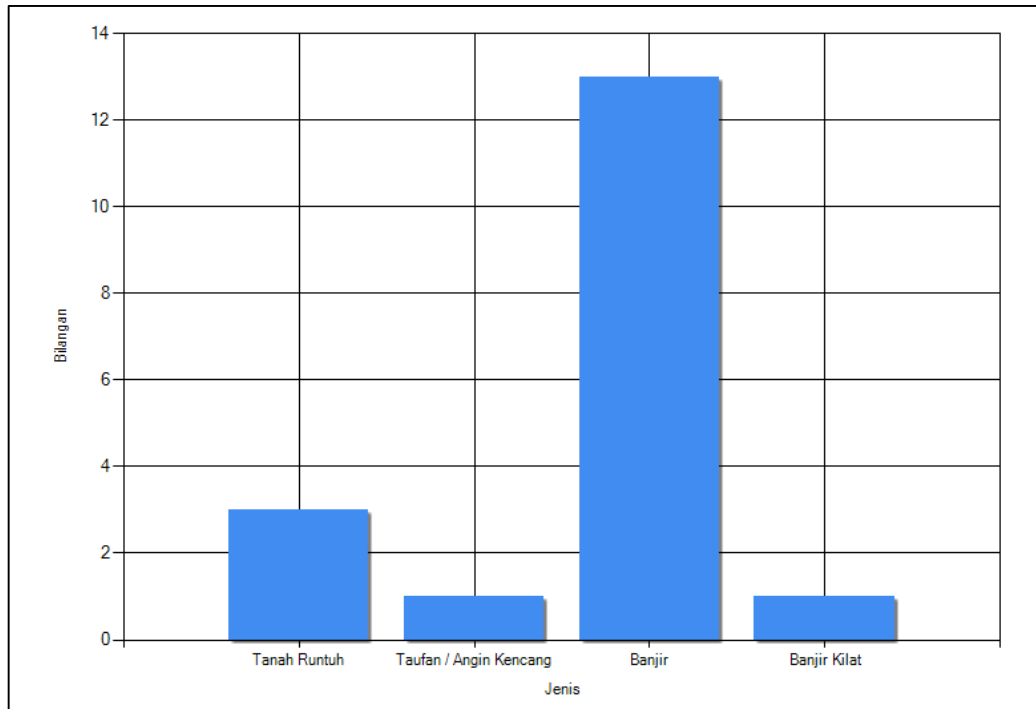


Figure 2.5 The incident cases due to natural hazard in Malaysia

Source: Portal bencana (NADMA) (2018)

#### 2.7.4 Incident Command System

According to Haddow (2010), the Incident Command System (ICS) was developed after the 1970 fires in Southern California. Duplication of efforts, lack of coordination, and communication problems hindered all agencies responding to the expanding fires. The main function of ICS is to establish a set of planning and management systems that would help the agencies responding to a disaster to work

In Figure 2.6 it shown the multiple functions in the ICS system. They include common use of terminology, integrated communications, a unified command structure, resource management, and action planning. A planned set of directives includes assigning one coordinator to manage the infrastructure of the response, assigning personnel, and deploying equipment, obtaining resources, and working with the numerous agencies that

respond to the disaster scene. In most instances the local fire chief or fire commissioner is the Incident Commander.

The Tahfiz Institutions are recommended to construct the Incident Command System in their Tahfiz, in order to manage their role during the emergency. They can plan the communication system in terms of emergency and provide information about the function of the role that are assigned.

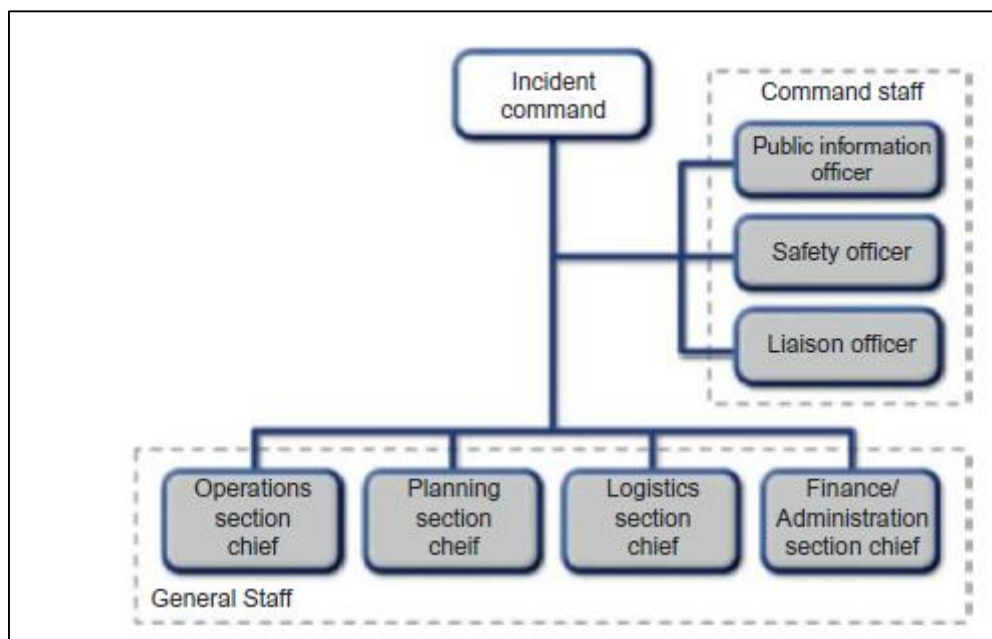


Figure 2.6 Incident Command System: the command staff and the general staff

Source: Federal Emergency Management Agency (2007)

There are five major management systems within the ICS: command, operations, planning, logistics, and finance.

Table 2.2 Five major management systems within the Incident command systems

| <b>Management system<br/>(Departments)</b> | <b>Description</b>   |
|--|--|
| Command                                    | Developing, directing, and maintaining communication and collaboration with the multiple agencies on site, working with the local officials, the public, and the media to provide up-to-date information regarding the disaster.                       |
| Operation                                  | Section that handles the tactical operations, coordinates the command objectives, and organizes and directs all resources to the disaster site.  |
| Planning                                   | This section provides the necessary information to the command center to develop the action plan to accomplish the objectives. This section also collects and evaluates information as it is made available.   |
| Logistics                                  | This section provides personnel, equipment, and support for the Command Center. They handle the coordination of all services that are involved in the response from locating rescue equipment to coordinating the response for volunteer organizations |
| Finance                                    | This section is responsible for accounting for funds used during the response and recovery aspect of the disaster. This section monitors costs related to the incident and provides accounting procurement time recording cost analyses.               |

Source: Federal Emergency Management Agency (2007)

## **2.8 Recovery**

Recovery is restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster-affected community or society, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk (UNISDR , 2017)

It mention on Pennsylvania Safe School Advisor Committee (2009) in the event of an incident, critical elements of recovery should be addressed. School management provide a team that can handle a short term interventions and long term solutions. That teams also need to address communication, psychological first aid, community crisis counseling response teams, administrative, and environmental. Based on the statements, the Tahfiz Institution need to establish a team that are focus on the recovery plan and this team need to undergo certain training to ensure they are qualified to perform the recovery task.

### **2.8.1 Economic Recovery**

The pre-disaster economic preparedness plan functions to prepare a community for disaster situations with a focus on the business community and the local economy. The plan defines roles and action steps for economic recovery stakeholders should a disaster occur. Having a plan in place before a disaster will enable a community to act more quickly and efficiently and spur the recovery process.

Planning for long-term recovery seems like a difficult task when there are pressing humanitarian, clean-up, and rebuilding needs to address. Recovery is the fourth phase of disaster and is the restoration of all aspects of the disasters impact on a community. By this time, the impacted region has achieved a degree of physical, environmental, economic and social stability. The recovery phase of disaster can be broken into two periods. The short-term phase typically lasts from six months to at least one year and involves delivering immediate services to businesses.

The long-term phase, which can range up to decades, requires thoughtful strategic planning and action to address more serious or permanent impacts of a disaster. Investment in economic development capacity building becomes essential to foster economic diversification, attain new resources, build new partnerships and implement effective recovery strategies and tactics. Communities must access and deploy a range of public and private resources to enable long-term economic recovery.

Tahfiz Institution are recommended to establish the long-term recovery planning for their Tahfiz it because, if the accident happen the Tahfiz institution are can still run as usual and the repairing work can be done quickly because the already have a sources to repair the minimum damage that happened in their Tahfiz .

### **2.8.2 Volunteer Groups**

Many voluntary organizations and nongovernmental organizations (NGOs) are involved in disaster recovery. These organizations help individuals to get back on their feet in the immediate aftermath of a disaster event by providing food, shelter, medicine, and clothing. These groups also provide long-term assistance in many areas such as housing repair and rebuild, child care, and assistance in accessing government relief. Other than that, there are several organization can provide safety services such as safety awareness to help the communities to know how the aware about the hazard that are surrounding themselves such as in Malaysia there have Malaysian Society For Occupational Safety and Health (MSOSH) this society give safety awareness that are related on Tahfiz institution. Moreover, this studies will be conducted on Kampung Janda Baik in Pahang there also have the society that can give input and inspection regarding to safety issue such as Pahang Environment Safety Health Association (PESHA) there are active to give training to Tahfiz institution in Pahang and there are also have Pasukan Bomba Sukarelawan Janda Baik that are the example of volunteer group that are active in Janda Baik, Pahang (Pasukan Bomba Sukarelawan Janda Baik, 2015).



### **2.8.3 Recovery Planning Tools**

This are involve by a several tool which is access, plan, implement, test and monitor. The first step are to access the accident by doing this step their will know the level of accident that are occur and can apply are proper response to avoid immediate risk. By access the accident their can start to plan are suitable planning on how built up after the accident, this step must be done properly and it take are lot of times to ensure the plan are suitable and can be used for a long-term period. By providing planning to ensure the planning are suitable for the people that are involve in the accident their must implement the planning to the people , by doing this step it will related to the test because by getting the result it need to ensure the people are start to apply this implementation in daily-life. This will be done to the selected person in several time that are providing to ensure the plan are stable. Lastly this planning must need are monitoring and inspection by scheduled to ensure this planning are not have any error.

The recovery planning tools need to plan properly from the Tahfiz management in order to ensure the recovery plan are suitable for use if emergency are occur. Because, the recovery plan need to clear and easy to understand from any kind of person in the Tahfiz, it because all person will be part on the recovery plan, to ensure all person are understand about their role, the Tahfiz management need to conducted the table top exercise to make the people on the Tahfiz are easily to understand the recovery planning that will used if emergency occurs.

### **2.8.4 Business Continuity Plan (BCP)**

Whenever disaster strikes, the most critical asset that every school must protect from sudden loss is their human resources (the people that occupy the building) and their data. No matter what happens, Tahfiz Institution must be capable of maintaining operations no matter how sudden or how severe the damage or loss is. By creating a BCP in Tahfiz Institutions it will increasing their level of preparedness and maintaining a continuity of operations that is a basic requirement of any effective educational facility. BCP is to restore critical systems and the restore the learning environment immediately.

Planning for the business continuity of a Tahfiz institution system of a disaster is a complex task. Preparation for response, and recovery from a disaster affecting administrative functions requires the cooperative efforts of many support organizations, in partnership with the functional areas supporting of Tahfiz Institution.

The method that are used for recovery action in Emergency Management is refer to the Business Continuity Management Cycle (BCM). In Figure 2.7 it shown the BCM Life cycle.



Figure 2.7 Business Continuity Management Life cycle

Source: Adopted from BCM Institute Terminologies, (2014)

Table 2.3 BCM Life cycle description

| BCM Life Cycle           | Description   |
|--------------------------|---|
| Project management       | <ul style="list-style-type: none"> <li>• To understand the requirements of the project management phase.</li> <li>• To identify the BCM planning methodology, framework and its components</li> <li>• To understand the importance of leadership and management commitment</li> <li>• Stated the roles and responsibilities within the BCM organisation</li> </ul>  |
| Risk analysis and review | <ul style="list-style-type: none"> <li>• To conduct a comprehensive risk analysis for their organisation or department</li> <li>• Proposed solutions to manage the identified risks</li> </ul>  |
| Business impact analysis | <ul style="list-style-type: none"> <li>• To determine the critical business functions in their organisation</li> <li>• Established recovery windows, including time sensitive processes</li> <li>• To understand the impact to the organisation and critical business functions whether it be qualitative or quantitative</li> <li>• To identify the inter-dependencies and vital records relation to the critical business functions.</li> </ul> |
| Recovery strategy        | <ul style="list-style-type: none"> <li>• To understand the key concepts and requirements of the Business Continuity Strategy phase</li> <li>• To understand how to develop an organisation/corporate level as well as business unit BC strategy.</li> </ul>   |
| Plan Development         | <ul style="list-style-type: none"> <li>• To determine the critical business functions in their organisation</li> <li>• Established recovery windows, including time sensitive processes</li> <li>• To understand the impact to the organisation and critical business functions whether it be qualitative or quantitative</li> </ul>  |

- To identify the inter-dependencies and vital records relation to the critical business functions.

#### Testing and Exercising

- To understand the fundamentals of the Testing and Exercising phase
- To identify the guidelines and procedures to be followed in designing and documenting tests and exercises
- To understand how to conduct and execute tests and exercises

#### Program Management

- To understand the concepts and processes involved in the Program Management phase
  - To understand the processes involved in BC plan maintenance and document management
  - To understand the additional requirement needed, should an organisation be pursuing its ISO 22301 certification.
  - To understand on how tests, exercises and training are conducted in the BC process
  - To understand the Review and Audit and performance evaluation process
- 

Source: Adopted from BCM Institute Terminologies, (2014)

### **2.8.5 Psychological First Aid**

Psychological First Aid (PFA) is an evidence-informed modular approach to help children, adolescents, adults, and families in the immediate aftermath of disaster and terrorism. Individuals affected by a disaster or traumatic incident, whether survivors, witnesses, or responders to such events, may struggle with or face new challenges following the event (Brymer et.al, 2006). PFA is designed to reduce the initial distress caused by traumatic events and to foster short- and long-term adaptive functioning and coping.

As stated in FEMA (2013) this are provide the information on the psychological first aid for school, there are provide the intervention model in order to assist student and staff in immediate aftermath of the emergency. This guidelines are designed to reduce the initial distress that causing by the emergencies, it also assists the student in developing strategies and constructive action to deal with their fear.

The importance of the Psychological First Aid for the Tahfiz Institution it for ensure that the student are know how to control the emotion if the something bad are happen on their Tahfiz, based on the incident on Tahfiz Darul Quran Ittifaqiyah Center, at Kampung Datuk Keramat on 2017 some of the victim that are alive are still and trauma on the tragedies, in order to prevent this situation happen again. The Tahfiz Institutions need to provide this psychological first aid for the student and wardens to ensure they can control the emotion if accident that are happen in their Tahfiz.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 Introduction**

The purpose of this chapter is to discuss about the methodology of this research which carried out throughout this study. It is vital in order to obtain critical data to be analysed, This chapter includes research design, study sample, study area, sampling technique, process and procedures, data collection technique, research instrument and data analysis.

#### **3.2 Research Design**

Descriptive research is a study designed to depict the participants in an accurate way. More simply put, descriptive research is all about describing people who take part in the study.

According to Piaw (2016), the result of a research is determined by the research method and design. This study are conducted by using the qualitative method. To achieve that are stated in the objective, the studies are conducted by using the walkthrough observation, interview and provide a questionnaires. By conducted the walkthrough observation there are the best ways to identify the lack of the emergency management that are implement from the several Tahfiz Institution and the result of the observation are measured by review the checklist and this method it help to come up with proper recommendations. Other than that, by ensure the validity of report review we can done a monitoring at the highly incident happen at Tahfiz Institution. Beside that we, can conduct

an awareness programmes among the wardens and student to make sure they are always alert and must be known what will be done if incident happen toward them.

Based on the walkthrough observation, the interview has been conducted to get a response among the wardens about the probabilities of an incident that can happen to them during a daily day and the awareness level on emergency preparedness. This interview are conducted to ensure that the wardens are already and expose to the potential incident and how to prepare and conduct if the incident are occur. Besides that by conducted the interview it be a two way communications process and it are easy to provide a suitable answers if have problem that are happen on that place.it also are the best method to collect data.

The questionnaires given the data collection from the wardens and student of Tahfiz Institution to make a proven of the study. By the result of questionnaire we can make the conclusion by compare with the result the interview, observation and this questionnaire.

### **3.3 Study Area**

The study area for this research is Tahfiz Institutions that are located in Kampung Janda Baik,Pahang, Malaysia which is involve seven Tahfiz Institution that are conducting the learning of Islam The institution is located near to the highlands. The institution not had complete facilities and all student are staying at the hostel. According to the Malaysian Meteorological Department (JMM) has provided floors maps and research on earthquakes around Janda Baik, and there are evidence of earthquakes occurring in the Janda Baik area in 2009 , as indicated by the JMM, around 2.2 scalar Richter has been recorded on the earthquake. The potential of earthquake was very high at this area. By providing the information on how to manage the emergency if there are accident that occur on Tahfiz Institution it can improve their knowledge about the safety awareness that are needed to protect themselves.

### **3.4 Study Population and Sample Size**

The samples involve in this study a Tahfiz institution. The total population for the seven Tahfiz are 650 person. The sample 453 person was been selected according to Figure 3.1 for determine sample size by Krejcie and Morgan (1970). In general, sampling means selecting a particular sample or group to represent the entire population. The goal of this study is to obtain the highest potential hazard and also the level of emergency preparedness among wardens and student at the Tahfiz Institutions. 453 of person was randomly selected among student and warden to complete the questionnaire.



Table 1: Table for Determining Sample Size for a Finite Population

| <i>N</i> | <i>S</i> | <i>N</i> | <i>S</i> | <i>N</i> | <i>S</i> |
|----------|----------|----------|----------|----------|----------|
| 10       | 10       | 220      | 140      | 1200     | 291      |
| 15       | 14       | 230      | 144      | 1300     | 297      |
| 20       | 19       | 240      | 148      | 1400     | 302      |
| 25       | 24       | 250      | 152      | 1500     | 306      |
| 30       | 28       | 260      | 155      | 1600     | 310      |
| 35       | 32       | 270      | 159      | 1700     | 313      |
| 40       | 36       | 280      | 162      | 1800     | 317      |
| 45       | 40       | 290      | 165      | 1900     | 320      |
| 50       | 44       | 300      | 169      | 2000     | 322      |
| 55       | 48       | 320      | 175      | 2200     | 327      |
| 60       | 52       | 340      | 181      | 2400     | 331      |
| 65       | 56       | 360      | 186      | 2600     | 335      |
| 70       | 59       | 380      | 191      | 2800     | 338      |
| 75       | 63       | 400      | 196      | 3000     | 341      |
| 80       | 66       | 420      | 201      | 3500     | 346      |
| 85       | 70       | 440      | 205      | 4000     | 351      |
| 90       | 73       | 460      | 210      | 4500     | 354      |
| 95       | 76       | 480      | 214      | 5000     | 357      |
| 100      | 80       | 500      | 217      | 6000     | 361      |
| 110      | 86       | 550      | 226      | 7000     | 364      |
| 120      | 92       | 600      | 234      | 8000     | 367      |
| 130      | 97       | 650      | 242      | 9000     | 368      |
| 140      | 103      | 700      | 248      | 10000    | 370      |
| 150      | 108      | 750      | 254      | 15000    | 375      |
| 160      | 113      | 800      | 260      | 20000    | 377      |
| 170      | 118      | 850      | 265      | 30000    | 379      |
| 180      | 123      | 900      | 269      | 40000    | 380      |
| 190      | 127      | 950      | 274      | 50000    | 381      |
| 200      | 132      | 1000     | 278      | 75000    | 382      |
| 210      | 136      | 1100     | 285      | 100000   | 384      |

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

Figure 3.1 Krejcie & Morgan Table

Source: Krejcie & Morgan (1970)

### **3.5 Research Framework**

Figure 3.2 showed the illustration research framework regarding the objective of this study to determine vulnerability level of Tahfiz Institutions at Kampung Janda Baik, Pahang to determine the availability of emergency management at Tahfiz Institutions in Kampung Janda Baik, Pahang and to measure level of knowledge on emergency preparedness among wardens and students at Tahfiz Institutions in Kampung Janda Baik, Pahang. All methods and instruments in this study have been stated in Figure 3.2.

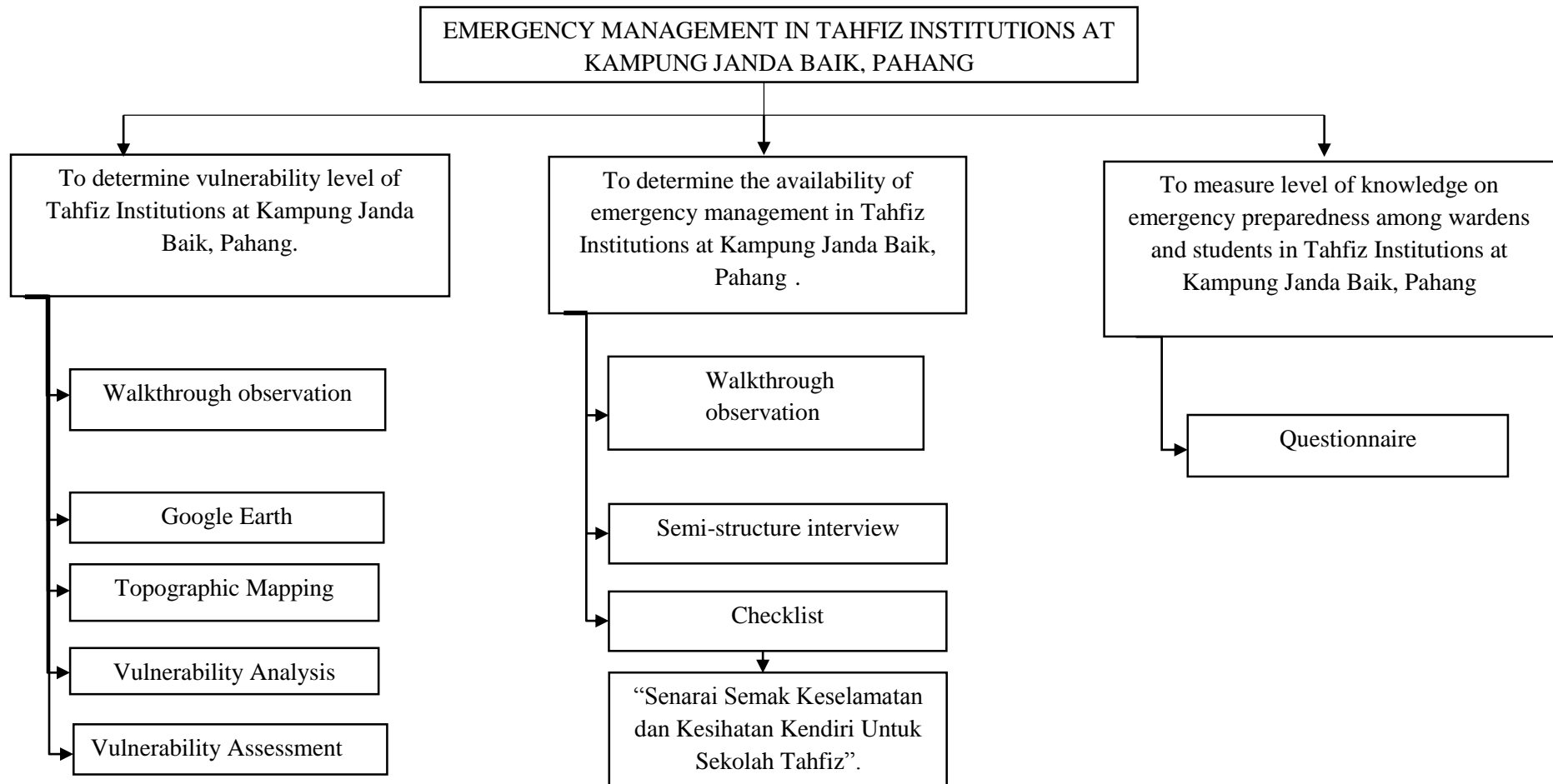


Figure 3.2 Research Framework

### **3.6 Research Instruments**

Research Instruments are measurement tool such as questionnaires or scales are designed to obtain data on a topic of interest from research subjects. Research instruments are important in order to obtain specific data of the study. There are several instrument that have being used to gain data which are interview, vulnerability analysis, and general questionnaire.

#### **3.6.1 Checklist**

The checklist, document review and question to the interviewer are used as an approach to gather information to measure level of knowledge on emergency preparedness among wardens and students at Tahfiz Institutions in Kampung Janda Baik, Pahang.

The purpose of the checklist is to observe the availability of emergency management at Tahfiz Institutions in Kampung Janda Baik, Pahang whether it are on the fully equipped or not. The availability of emergency management are based on the four phase of the emergency management which is mitigation, preparedness, response and recovery. The checklist are used for the hazard identification and the structural control on the Tahfiz Institution. Other than that, it also for the checklist of non-structural indicator that are consisted of electrical equipment, safety and security of people, service and utilities, communication and also for the information system and monitoring and evaluation. The checklist are adopted from “Senarai Semak Keselamatan dan Kesihatan Kendiri Untuk Sekolah Tahfiz” in Appendix A. For the documentation it refer for the all documents that are related with safety awareness were used as a source of evidences.

#### **3.6.2 Document**

The document it be the layout of the Tahfiz Institutions, safe shelter location and also evacuation routes. The photo were taken during the walkthrough observation as evidence by conducting the evaluation of the emergency management on Tahfiz institution. Document that has been reviewed in this research was the statistical information of student and staff on the Tahfiz Institutions.

### **3.6.3 Questionnaire**

Type of the questionnaire that will be for this study are close ended question which can be answered by a simple likert scale. Quantitative data will be obtained from the close ended question. As for the close ended questions, participant had a limited set of possible answers. For example, the respondent was given a score in the scale form from 1 to 5, as 1 represent poor while 5 represent very high. For close-ended question quantitative data will be get as it will be easy to analyse. The questionnaire has been contributed with the wardens and students from the Tahfiz Institutions. The questionnaire was consist of 22 question. The 22 questions are related to the knowledge of students and wardens towards emergency preparedness. The questionnaire was put at Appendix B.

### **3.7 Data Collection**

Data collection is a body of technical methods use in research. There are several research technique that have been used in this study which are observation and interview. The third objective are to measure level of knowledge on emergency preparedness among wardens and students at Tahfiz Institutions and there will be the population on the Tahfiz Institutions on Kampung Janda Baik, Pahang. The sample is are the level of knowledge among the wardens at Tahfiz institution due to emergency preparedness, and there will be conducted are purposive sampling. A purposive sample is a non-probability sample that is selected based on characteristics of a population and the objective of the study. Purposive sampling is also known as judgmental, selective, or subjective sampling (Crossman, 2018).

This type of sampling can be very useful in situations when you need to reach a targeted sample quickly, and where sampling for proportionality is not the main concern. There are seven types of purposive samples, each appropriate to a different research objective. The sampling error cannot be estimated when a sample is selected because when the subjects are not chosen randomly, it is impossible to determine the sampling distribution which is required to estimate the sampling error.

### **3.7.1 Walkthrough Observation**

Walkthrough observation is conducted to ensure the validity of report review, based on that we can done a monitoring at the Tahfiz Institution. The function was to gather the layout of the area Tahfiz in Kampung Janda Baik or known as overview of the facility initially such as assembly point of the Tahfiz area. The objective of the observation was to collect data in a “natural setting” as mentioned by Schuh and Upcraft (2001).

### **3.7.2 Semi-Structured Interviews**

A semi-structured interview is a qualitative method of inquiry that combines a pre-determined set of open questions which mean questions that prompt into discussion with the opportunity for the interviewer to explore particular themes or responses further. For purposes of this discussion, interviews be defined as controlled conversations that the interviewer uses to obtain data required from the respondent by means of asking serious questions verbally (Akbayrak, 2000).

The interview session was conducted in a semi-formal manner and the interviewer was allowed to be more flexible. During the collection of data, the group interview was conducted. The respondents was allowed to discuss their opinion and answer among themselves. As it was a useful method in collecting information about specific issues.

Based on the walkthrough observation, by the result of interview session to it shown the response among the wardens and students about the probabilities of an incident that can happen to them. By conducted the questionnaire to it a step to get their response, and based on that result we can done a report about the highly probability of the incident and hazard that can happen to them it result of the walkthrough can be refer

### **3.7.3 Survey**

Survey are conducted in the seven Tahfiz Institution at Kampung Janda Baik. This survey are conducted to measure level of knowledge on emergency preparedness among students and

wardens at Tahfiz Institutions. This survey has been conducted by assign the questionnaire to the wardens and student and the result of this survey are refer on the mean score.

### 3.8 Data Analysis

#### 3.8.1 Descriptive Analysis using Statistical Package for Social Science

Quantitative data from the questionnaire will be analysed by the Statistical Package for Social Science (SPSS) software version 20.0. SPSS through various add on modules, it can cater to the more advanced needs of high end multivariate analysis, neural networks, conjoint analysis, etc. it offers the convenience of automating several tasks such as data cleansing and organizing, along with creating charts and other types of output. The findings was presented in the tables with calculation of mean score for the question that involved scale in order to measure the knowledge of the student and warden in the Tahfiz. Interpretation of mean scores or the tendencies are shown in Table 3.1. SPSS output was located at the Appendix C

Descriptive statistics are number that are used to summarize and describe data which can represent the entire population or a sample of it. In addition, it consists of the measures of central tendency and measures of variability, or spread. Measures of central tendency include the mean, median and mode, whereas measures of variability include the standard deviation or variances, the minimum and maximum variables and kurtosis and skewness. Furthermore, descriptive statistics help the researcher to describe and understand s specific data set’s features by summarizing the sample and measures of the data (Trochim, 2006)

Table 3.1 Interpretation mean scores for descriptive statistic

| <b>Mean score</b> | <b>Interpretation level</b> |
|-------------------|-----------------------------|
| 1.00-2.49         | Low                         |
| 2.50-3.49         | Moderate                    |
| 3.50-5.00         | High                        |

Source: Weirma (2000)

### **3.8.2 Qualitative Analysis**

The method of the data collection are qualitative research it are the primarily exploratory research. It is used to gain an understanding of underlying reasons, opinions, and motivations. It provides insights into the problem or helps to develop ideas or hypotheses for potential quantitative research. Qualitative Research is also used to uncover trends in thought and opinions, and dive deeper into the problem. Qualitative data collection methods vary using unstructured or semi-structured techniques. Some common methods include focus groups (group discussions), individual interviews, and participation/observations. The sample size is typically small, and respondents are selected to fulfil a given quota (Defranzo, 2011).

### **3.8.3 Vulnerability Analysis**

A vulnerability assessments is it is then possible to rank order the likely risks or hazards faced by a facility that reflects both the probability of occurrence and the severity of the consequences. This prioritization enables a facility to match resources and planning with those higher priority risks and identified threats and provides a basis for determining mitigation measures for protection of people and critical assets.

The assessment of any vulnerability of a Tahfiz Institutions building has been done within the context of the defined threats and the value of the school's assets. That is, each element of the school building should be analysed for vulnerabilities to each threat and a vulnerability rating should be assigned. They are same combination of linguistic scale and numerical scale used in the asset value and threat assessments can also be used for the vulnerability assessment as stated by FEMA in Table 3.2 and Table 3.3. It should be noted that a vulnerability assessment may change the value rating of assets due to the identification of critical nodes or some other factor that makes the school's assets more valuable.



Table 3.2 Vulnerability Rating Scale

| <b>Vulnerability Rating</b> |     |
|-----------------------------|-----|
| <b>Very High (VH)</b>       | 10  |
| <b>High (H)</b>             | 8-9 |
| <b>Medium High (MH)</b>     | 7   |
| <b>Medium (M)</b>           | 5-6 |
| <b>Medium Low (ML)</b>      | 4   |
| <b>Low (L)</b>              | 2-3 |
| <b>Very low (VL)</b>        | 1   |

Source: Federal Emergency Management Agency (2002)

Table 3.3 Vulnerability Rating Scale Justification

| <b>Vulnerability rating scale level</b> | <b>Justification</b>   |
|---|--|
| Very High                               | One or more major weaknesses have been identified that make the school's assets extremely susceptible to an aggressor or hazard    |
| High                                    | One or more significant weaknesses have been identified that make the school's assets highly susceptible to an aggressor or hazard |
| Medium high                             | An important weakness has been identified that makes the school's assets very susceptible to an aggressor or hazard.               |
| Medium                                  | A weakness has been identified that makes the school's assets fairly susceptible to an aggressor or hazard.                        |
| Medium low                              | A weakness has been identified that makes the school's assets somewhat susceptible to an aggressor or hazard                       |
| Low                                     | A minor weakness has been identified that slightly increases the susceptibility of the school's assets to an aggressor or hazard   |
| Very low                                | No weaknesses exist  |

Source: Adopted from Federal Emergency Management Agency (2002)

### **3.8.4 Vulnerability Mapping**

According to Edwards et.al (2007) vulnerability mapping are gives the precise location of sites where people, the natural environment or property are at risk due to a potentially catastrophic event that could result in death, injury, pollution or other destruction. This vulnerability mapping are made in conjunction with information about the different types of risks. Other than that, the vulnerability maps are most often created with the assistance of computer technology called geographic information systems (GIS) and digital land survey equipment designed for use in the field.

However, vulnerability maps also can be created manually using background maps such as satellite imagery, property boundaries, road maps, or topographic maps. To identify this kind of information the application such as Google Earth and Google Map also “Sistem Pemetaan Malaysia” can be used to get a precise result.

This vulnerability mapping can identify the contour scaling and also the type of slope that can be review on the Google Earth and “Sistem Pemetaan Malaysia”, and based on this application the information that are related on this mapping can be show for the seven Tahfiz Institution at Kampung Janda Baik, Pahang.

### **3.9 Reliability and Validity**

Reliability and validity are important concepts in research as they are used for enhancing the accuracy of the assessment and evaluation of a research work (Tavakol & Dennick, 2011).

Reliability refers to the consistency, stability and repeatability of results i.e. the result of a researcher is considered reliable if consistent results have been obtained in identical situations but different circumstances (Mohajan, 2017)

Validity is the extent to which any measuring instrument measures what it is intended to measure (Mohajan, 2017). It is possible for a measurement to be reliable but invalid, however, if a measurement is unreliable, then it cannot be valid (Mohajan, 2017)

For this study it will use qualitative research study and for reliability it referred to as when a researcher's approach is consistent across different researchers and different projects (Creswell, 2014). For the validity it when a researcher uses certain procedures to check for the accuracy of the research findings (Creswell, 2014).

### **3.9.1 Pilot Study for Survey**

The study is conducted in Tahfiz institution around Kuantan, Pahang. It conducted to test the research process and/or protocol. These are often referred to as feasibility studies because the pilot study tests how possible the design is in reality This test conducted to ensure the variable of the questionnaire that are provide are suitable for the occupant on Tahfiz Institution. It also can be the method that are use are suitable to implement for the Tahfiz Institution. By conduct this pilot study in can help the researcher to identify error before start to conduct the studies on the area that are stated. In order to know the reliability of questionnaire pilot test was conducted at the student and wardens at Tahfiz 1. There was 48 participant who answered the questionnaires. The cronbach's alpha test was done by using Statistical Package for Social Science (SPSS) software version 22.0. The data had been located in Appendix D.

### **3.9.2 Cronbach's Alpha Reliability Test**

Based on the questionnaire that will be given through survey method, the reliability of the questionnaire will be confirmed by using Cronbach Alpha. Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is considered to be a measure of scale reliability. A "high" value for alpha does not imply that the measure is unidimensional. Cronbach's alpha can be written as a function of the number of test items and the average inter-correlation among the items. Below, for conceptual purposes, Equation 3.2 shown the formula for the standardized Cronbach's alpha:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}}$$

Equation 3.1 Formula for the standardized Cronbach's alpha

Figure 3.3 shown that the internal consistency for the questionnaire that are provided it to ensure the questionnaire that are used at least on acceptable level.

| Cronbach's alpha        | Internal consistency |
|-------------------------|----------------------|
| $\alpha \geq 0.9$       | Excellent            |
| $0.9 > \alpha \geq 0.8$ | Good                 |
| $0.8 > \alpha \geq 0.7$ | Acceptable           |
| $0.7 > \alpha \geq 0.6$ | Questionable         |
| $0.6 > \alpha \geq 0.5$ | Poor                 |
| $0.5 > \alpha$          | Unacceptable         |

Figure 3.3 Cronbach's alpha rating scale

Sources: Tavokol (2011)

The value of cronbach's alpha test for the questionnaires was 0.728 so it is acceptable value for the reliability of questionnaires. Table 3.4 show the cronbach's alpha value with the internal consistency

Table 3.4 Reliability Statistics

| Reliability Statistics |            |
|------------------------|------------|
| Cronbach's Alpha       | N of Items |
| 0.728                  | 22         |

### 3.9.3 Triangulation Method for Qualitative Data

When collecting qualitative data by using the triangulation technique, a phenomenon is viewed from difference perspective, with each perspective detected by using a different method. Each method is separate line which is directed to the same destination and focuses on the same event or phenomenon (Piaw, 2016)

By conducted the survey and walkthrough observation of this Tahfiz Institutions it show the result this kind of method are generated the result that to identify the emergency management of this Tahfiz Institutions, based on the vulnerability analysis it found the highly probability of hazard that can occur at that area, other than that, by the walkthrough observation and by using checklist that are to identify the availability of the emergency management on this Tahfiz Institutions.

### **3.10 Research Planning**

A proper management and planning for this study has been constructed in order to ensure it will be completed within the time frame. The planning scheduled has been constructed as in Appendix E. This study was completed in two semesters. The first semester was the completion of the proposal, then this study was continued on the second semester for the data collection, data analysis and final report submission.

## **CHAPTER 4**

### **RESULT AND DISCUSSION**

#### **4.1 Introduction**

The results presented in this chapter are based on the vulnerability assessment, checklist and questionnaires completed by student and wardens of seven Tahfiz Institution in Kampung Janda Baik. The chapter starts with the presentation of results from the vulnerability assessment, checklist and questionnaires, followed by analysis of walkthrough observation and concludes by interpretation of the results.

#### **4.2 Vulnerability Level of Tahfiz Institutions**

In various countries of the world, Highland is an attractive area for tourism, recreation, agriculture and settlement. In Malaysia, the highland areas like Cameron Highlands, Genting Highlands, Fraser's Hill, Bukit Larut and Penang Hill is a major tourist destination. However, Highland in Malaysia is also a sensitive area in terms of environment and ecology. Highland has a steep slope, hilltop, flora and fauna endemic endangered and local communities rich in culture. As a result of rapid development and planning and management that are less effective, highland areas have experienced a negative environment change. Such as soil erosion, landslides, deforestation, destruction of water catchment areas, environmental pollution, sedimentation rivers and dams, and flooding in areas downstream of the river. Environmental management in Highland it is important to control the deterioration of the environment in order to ensure the sustainability.

### 4.2.1 Vulnerability Mapping and Analysis

According to Edward et.al (2007) the vulnerability map are to define and limiting the area that are affected by one or more risks, which is the area that are mapped needs to encompass the entire area where a risk can affect the natural environment to be protected or developed sites whether it be a city infrastructure, houses and apartments, or commercial sites and public facilities.

Based on the study area located in Janda Baik, Pahang, this is an area of settlement in the highland area. The purpose for the highland area is an area in excess of 300-metres above sea level. Janda Baik area position is around 400-metres to 1370 metres above sea level. While the position of study area about 400-metres to 500 metres above sea level. This vulnerability analysis are conducted in this seven Tahfiz Institutions:

i. Tahfiz A

Tahfiz A is a school that contains a complete facilities and security level recognized by PESHHA. However, according to the position and the structure of the building for Tahfiz A is a relatively hilly area surrounded. Figure 4.1 it show the contour scaling for Tahfiz A was 440 meter from a sea level. The inside position Tahfiz categories are relatively safe from any disaster. The structure of the soil in the area is still in the secure portion of any disaster such as landslides and flash floods. Conclusion, Tahfiz A is safe, but the probability for any disaster are still taken into consideration because Figure 4.2 shows the area quite a bit hilly. However, if any development is still under control in the area, the situation in the safe condition. Table 4.1 shown the vulnerability analysis of Tahfiz A.

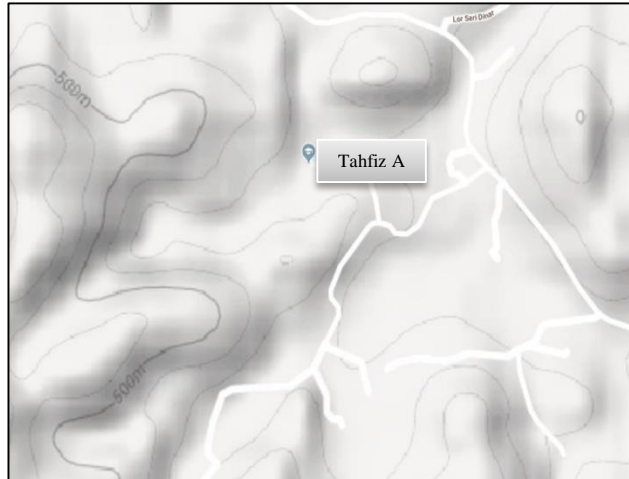


Figure 4.1 Contour scale at Tahfiz A

Source: Adapted from Google Earth



Figure 4.2 Position and view of slope at Tahfiz A

Source: Adapted from Google Earth



Table 4.1 Vulnerability analysis of Tahfiz A

|  | Threat /hazard       |    |                         |    |   |    |                       |    |  |    |
|--|----------------------|----|-------------------------|----|---|----|-----------------------|----|--|----|
|  | Landslide            |    | Flash flood             |    | Structural fire                         |    | Open fire             |    | Earthquake   |    |
|  | Soil erosion         |    | Heavy rain continuously |    | Electricity hazard due to short circuit |    | Open burning by human |    | When rock underground suddenly breaks along a fault. |    |
| Asset  | Vulnerability rating |    | Vulnerability rating    |    | Vulnerability rating                    |    | Vulnerability rating  |    | Vulnerability rating                                 |    |
| Student  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Staff  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Main school building                           | MH                   | 7  | M                       | 6  | H                                       | 10 | H                     | 10 | MH   | 7  |
| IT/Communications System                       | ML                   | 4  | MH                      | 7  | M                                       | 6  | M                     | 6  | ML   | 4  |
| Utility Systems (gas, electrical, sewer/water) | M                    | 6  | MH                      | 8  | H                                       | 9  | H                     | 9  | M  | 6  |
| School/Student Records                         | M                    | 6  | M                       | 6  | M                                       | 6  | 6                     | 9  | M  | 6  |
| Transportation (buses and parking)             | MH                   | 7  | H                       | 8  | MH                                      | 7  | H                     | 8  | MH   | 7  |
| Administrative Functions                       | M                    | 6  | M                       | 9  | MH                                      | 7  | M                     | 6  | M  | 6  |
| Food Service (cafeteria/kitchen)               | H                    | 8  | H                       | 8  | H                                       | 8  | H                     | 8  | H  | 8  |

ii. Tahfiz B

Tahfiz B is in an area of ground level and surrounded the sloping hilly area. However, building and Recreation Centre for the Tahfiz quite far from rugged. Figure 4.3 shows the contour scaling for this Tahfiz are 400 meter from sea level. Based on the statement, the risk for any landslide disaster are far away and need to be taken into consideration in the event of flash floods because the area contains water lines such as rivers. In the event of rain, the river flood probability will happen a bit. Based on the position of the land in the area, the soil structure for the area is still in good condition and safe to the occurrence of any act of God. In conclusion, the area of this Tahfiz is safe, but should take into consideration the Figure 4.4 shows the

current situation are relatively little area surrounded by risky. Table 4.2 shown the vulnerability analysis of Tahfiz B.

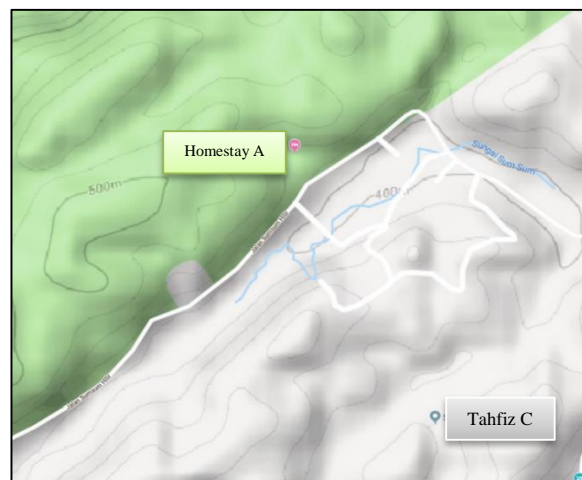


Figure 4.3 Contour scale at Tahfiz B

Source: Adapted from Google Earth

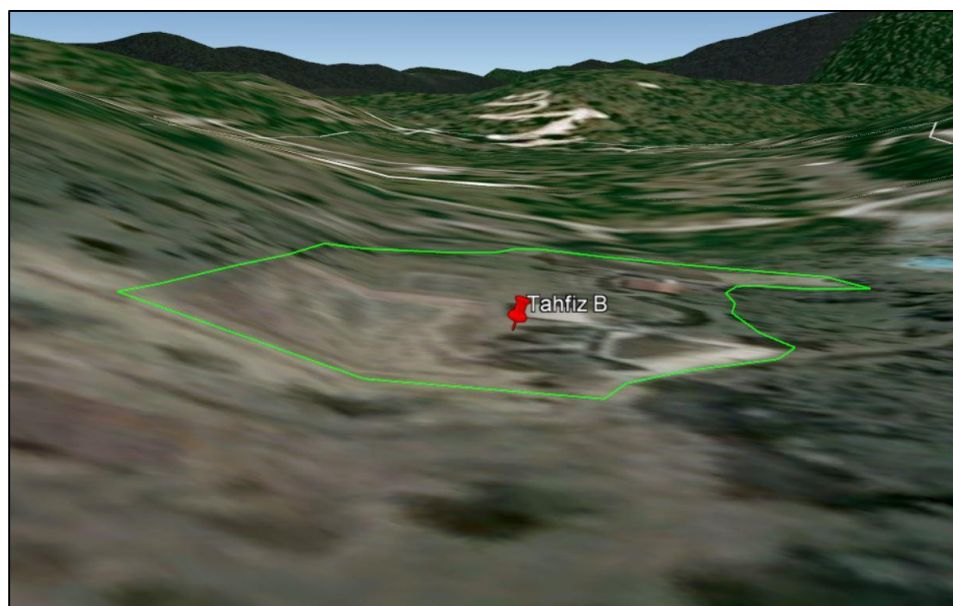


Figure 4.4 Position and view of slope at Tahfiz B

Source: Adapted from Google Earth

Table 4.2 Vulnerability analysis of Tahfiz B

|  | Threat /hazard       |    |                         |    |   |    |                       |    |  |    |
|--|----------------------|----|-------------------------|----|---|----|-----------------------|----|--|----|
|  | Landslide            |    | Flash flood             |    | Structural fire                         |    | Open fire             |    | Earthquake   |    |
| Asset  | Soil erosion         |    | Heavy rain continuously |    | Electricity hazard due to short circuit |    | Open burning by human |    | When rock underground suddenly breaks along a fault. |    |
|  | Vulnerability rating |    | Vulnerability rating    |    | Vulnerability rating                    |    | Vulnerability rating  |    | Vulnerability rating                                 |    |
| Student  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Staff  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Main school building                           | MH                   | 7  | M                       | 6  | H                                       | 10 | H                     | 10 | MH   | 7  |
| IT/Communications System                       | ML                   | 4  | MH                      | 7  | M                                       | 6  | M                     | 6  | ML   | 4  |
| Utility Systems (gas, electrical, sewer/water) | M                    | 6  | MH                      | 8  | H                                       | 9  | H                     | 9  | M  | 6  |
| School/Student Records                         | M                    | 6  | M                       | 6  | M                                       | 6  | 6                     | 9  | M  | 6  |
| Transportation (buses and parking)             | MH                   | 7  | H                       | 8  | MH                                      | 7  | H                     | 8  | MH   | 7  |
| Administrative Functions                       | M                    | 6  | M                       | 9  | MH                                      | 7  | M                     | 6  | M  | 6  |
| Food Service (cafeteria/kitchen)               | H                    | 8  | H                       | 8  | H                                       | 8  | H                     | 8  | H  | 8  |

iii. Tahfiz C

Tahfiz C also not consider dangerous place. But the position spaces of this Tahfiz is in a relatively safe compared to some Tahfiz stated. This Tahfiz is placed on flat and surrounded by settlements such as housing and village. In addition, the probability Tahfiz to occur to any act which is based on natural disaster is less. Figure 4.5 it shows the contour scaling for this Tahfiz are 460 meter from sea level. Figure 4.6 shown position and view of slope at Tahfiz C. Table 4.3 shown vulnerability analysis of Tahfiz C.

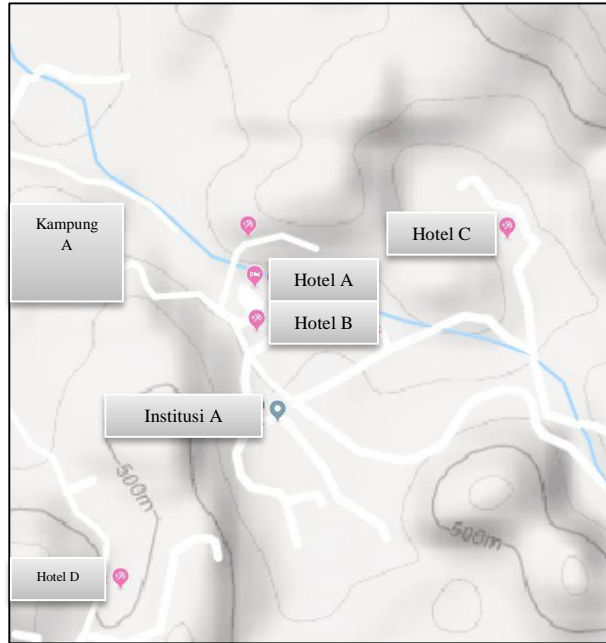


Figure 4.5 Contour scale at Tahfiz C

Source: Adapted from Google Earth

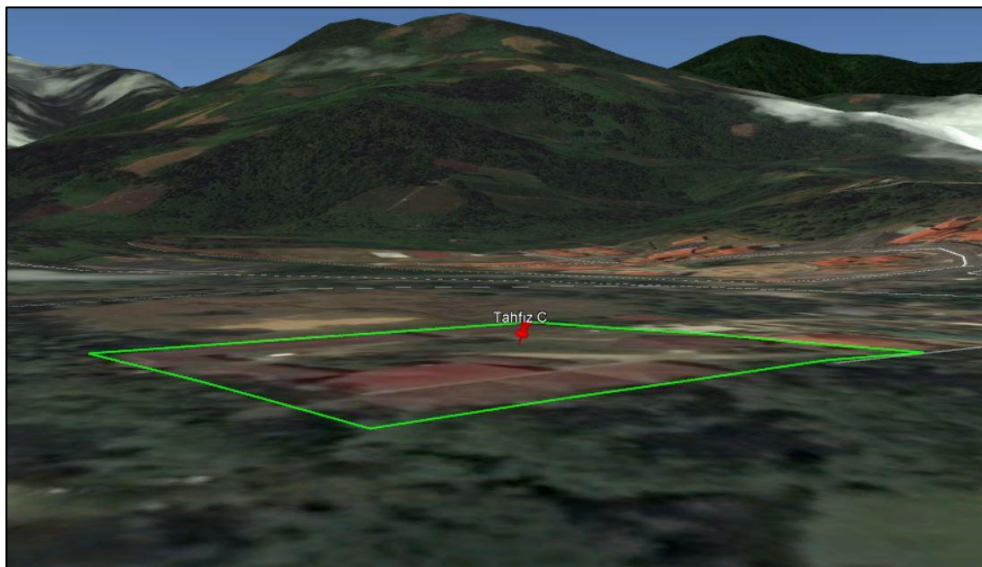


Figure 4.6 Position and view of slope at Tahfiz C

Source: Adapted from Google Earth

Table 4.3 Vulnerability analysis of Tahfiz C

|  | Threat /hazard       |    |                         |    |   |    |                       |    |  |    |
|--|----------------------|----|-------------------------|----|---|----|-----------------------|----|--|----|
|  | Landslide            |    | Flash flood             |    | Structural fire                         |    | Open fire             |    | Earthquake   |    |
| Asset  | Soil erosion         |    | Heavy rain continuously |    | Electricity hazard due to short circuit |    | Open burning by human |    | When rock underground suddenly breaks along a fault. |    |
|  | Vulnerability rating |    | Vulnerability rating    |    | Vulnerability rating                    |    | Vulnerability rating  |    | Vulnerability rating                                 |    |
| Student  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Staff  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Main school building                           | MH                   | 7  | M                       | 6  | H                                       | 10 | H                     | 10 | MH   | 7  |
| IT/Communications System                       | ML                   | 4  | MH                      | 7  | M                                       | 6  | M                     | 6  | ML   | 4  |
| Utility Systems (gas, electrical, sewer/water) | M                    | 6  | MH                      | 8  | H                                       | 9  | H                     | 9  | M  | 6  |
| School/Student Records                         | M                    | 6  | M                       | 6  | M                                       | 6  | 6                     | 9  | M  | 6  |
| Transportation (buses and parking)             | MH                   | 7  | H                       | 8  | MH                                      | 7  | H                     | 8  | MH   | 7  |
| Administrative Functions                       | M                    | 6  | M                       | 9  | MH                                      | 7  | M                     | 6  | M  | 6  |
| Food Service (cafeteria/kitchen)               | H                    | 8  | H                       | 8  | H                                       | 8  | H                     | 8  | H  | 8  |

iv. Tahfiz D

Tahfiz D also no exception placed in not dangerous area. There are house and village located around this Tahfiz. It also show that this Tahfiz has low probability for natural disaster to happen there. Figure 4.7 it shows the contour scaling for this Tahfiz are 440 meter from sea level. Figure 4.8 shown position and view of slope at Tahfiz D. Table 4.4 shown vulnerability analysis of Tahfiz D.

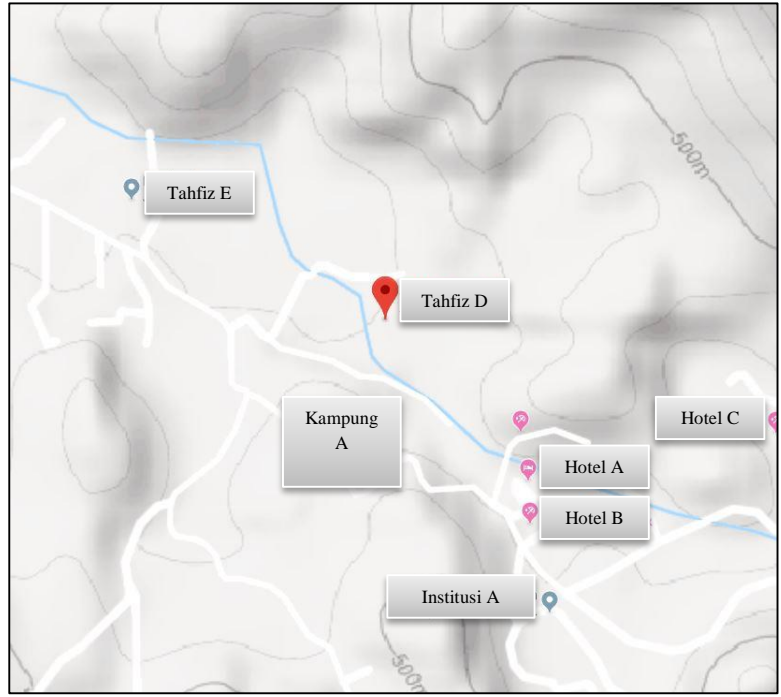


Figure 4.7 Contour scale of Tahfiz D

Source: Adapted from Google Earth

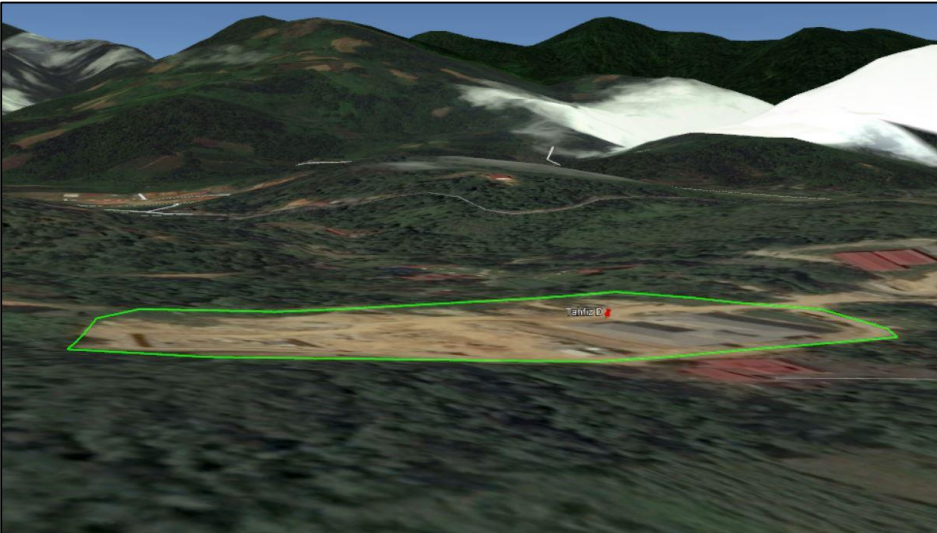


Figure 4.8 Position and view of slope at Tahfiz D

Source: Adapted from Google Earth

Table 4.4 Vulnerability analysis of Tahfiz D

|  | Threat /hazard       |    |                         |    |   |    |                       |    |  |    |
|--|----------------------|----|-------------------------|----|---|----|-----------------------|----|--|----|
|  | Landslide            |    | Flash flood             |    | Structural fire                         |    | Open fire             |    | Earthquake   |    |
| Asset  | Soil erosion         |    | Heavy rain continuously |    | Electricity hazard due to short circuit |    | Open burning by human |    | When rock underground suddenly breaks along a fault. |    |
|  | Vulnerability rating |    | Vulnerability rating    |    | Vulnerability rating                    |    | Vulnerability rating  |    | Vulnerability rating                                 |    |
| Student  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Staff  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Main school building                           | MH                   | 7  | M                       | 6  | H                                       | 10 | H                     | 10 | MH   | 7  |
| IT/Communications System                       | ML                   | 4  | MH                      | 7  | M                                       | 6  | M                     | 6  | ML   | 4  |
| Utility Systems (gas, electrical, sewer/water) | M                    | 6  | MH                      | 8  | H                                       | 9  | H                     | 9  | M  | 6  |
| School/Student Records                         | M                    | 6  | M                       | 6  | M                                       | 6  | 6                     | 9  | M  | 6  |
| Transportation (buses and parking)             | MH                   | 7  | H                       | 8  | MH                                      | 7  | H                     | 8  | MH   | 7  |
| Administrative Functions                       | M                    | 6  | M                       | 9  | MH                                      | 7  | M                     | 6  | M  | 6  |
| Food Service (cafeteria/kitchen)               | H                    | 8  | H                       | 8  | H                                       | 8  | H                     | 8  | H  | 8  |

v. Tahfiz E

While Tahfiz E is not located at the area which consider as dangerous. This is because the position of this Tahfiz is relatively safe compare to other Tahfiz (Tahfiz A, Tahfiz B, Tahfiz F and Tahfiz G). Besides, Tahfiz E also surrounded by house and village this result lead to Tahfiz E is consider as low probability of Tahfiz that natural disaster could occur. Figure 4.9 it shows the contour scaling for this Tahfiz are 440 meter from sea level. Figure 4.10 shown position and view of slope at Tahfiz E. Table 4.5 shown vulnerability analysis of Tahfiz E.

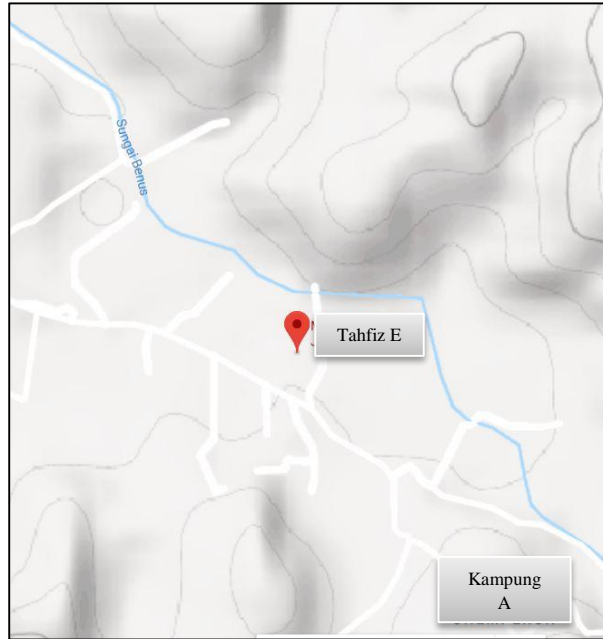


Figure 4.9 Contour scale at Tahfiz E

Source: Adapted from Google Earth

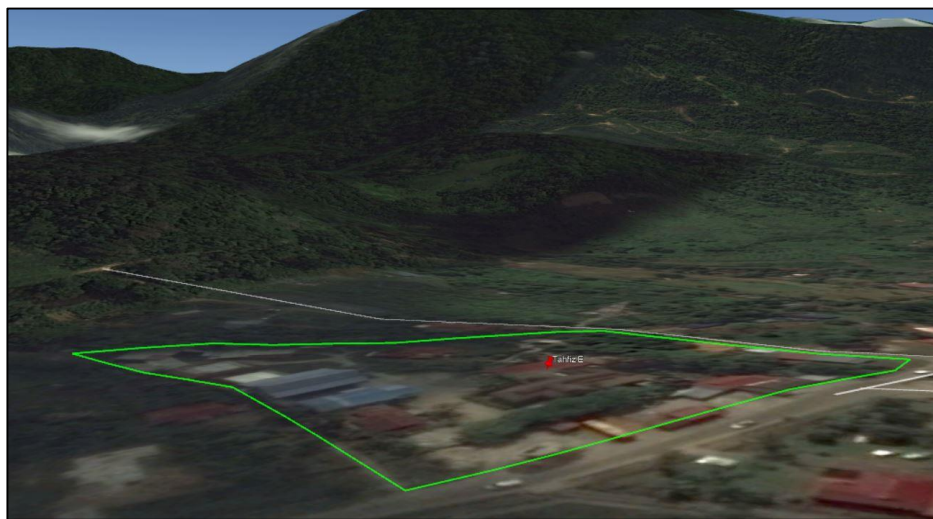


Figure 4.10 Position and view of slope at Tahfiz E

Source: Adapted from Google Earth



Table 4.5 Vulnerability analysis of Tahfiz E

|  | Threat /hazard       |    |                         |    |   |    |                       |    |  |    |
|--|----------------------|----|-------------------------|----|---|----|-----------------------|----|--|----|
|  | Landslide            |    | Flash flood             |    | Structural fire                         |    | Open fire             |    | Earthquake   |    |
| Asset  | Soil erosion         |    | Heavy rain continuously |    | Electricity hazard due to short circuit |    | Open burning by human |    | When rock underground suddenly breaks along a fault. |    |
|  | Vulnerability rating |    | Vulnerability rating    |    | Vulnerability rating                    |    | Vulnerability rating  |    | Vulnerability rating                                 |    |
| Student  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Staff  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Main school building                           | MH                   | 7  | M                       | 6  | H                                       | 10 | H                     | 10 | MH   | 7  |
| IT/Communications System                       | ML                   | 4  | MH                      | 7  | M                                       | 6  | M                     | 6  | ML   | 4  |
| Utility Systems (gas, electrical, sewer/water) | M                    | 6  | MH                      | 8  | H                                       | 9  | H                     | 9  | M  | 6  |
| School/Student Records                         | M                    | 6  | M                       | 6  | M                                       | 6  | 6                     | 9  | M  | 6  |
| Transportation (buses and parking)             | MH                   | 7  | H                       | 8  | MH                                      | 7  | H                     | 8  | MH   | 7  |
| Administrative Functions                       | M                    | 6  | M                       | 9  | MH                                      | 7  | M                     | 6  | M  | 6  |
| Food Service (cafeteria/kitchen)               | H                    | 8  | H                       | 8  | H                                       | 8  | H                     | 8  | H  | 8  |

vi. Tahfiz F

Tahfiz F is the first school to be found at Kampung Janda Baik. Tahfiz F is quite a bit of position spaces because of terrain hazards in the area there is a slope and Tahfiz in downhill position. Figure 4.11 it show contour scaling of Tahfiz F it was 480 meter from sea level. Table 4.12 show position and view of slope at Tahfiz F. Education Centre and prayer hall at the top of the hill while the place to eat at the bottom of the hill. Tahfiz F is also close to the river and the probability of risk to the flood will occur in the event of heavy rain. Conclusions of this risk, Tahfiz F can get disasters such as landslides and flash floods are relatively high because the structure of ground positions in this area in a state of down slope. If this land structure is

not strong, the probability of landslides and risks are occur to the Tahfiz. Table 4.6 shows the vulnerability analysis of Tahfiz F.

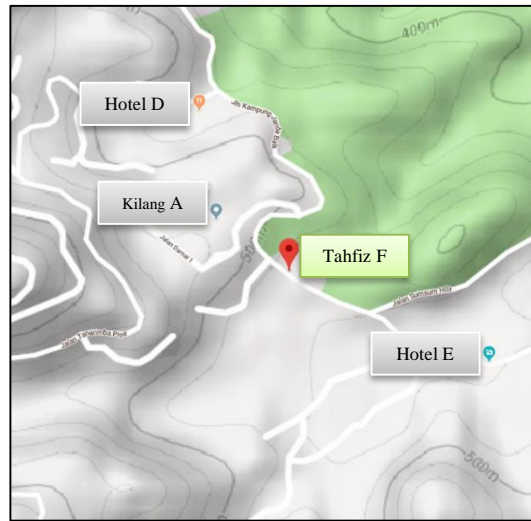


Figure 4.11 Contour scale at Tahfiz F

Source: Adapted from Google Earth

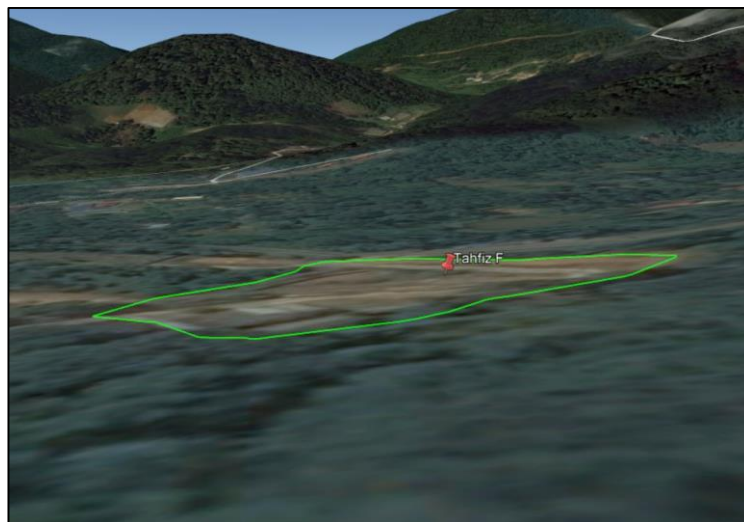


Figure 4.12 Position and view of slope at Tahfiz F

Source: Adapted from Google Earth

Table 4.6 Vulnerability analysis of Tahfiz F

|  | Threat /hazard       |    |                         |    |   |    |                       |    |  |    |
|--|----------------------|----|-------------------------|----|---|----|-----------------------|----|--|----|
|  | Landslide            |    | Flash flood             |    | Structural fire                         |    | Open fire             |    | Earthquake   |    |
|  | Soil erosion         |    | Heavy rain continuously |    | Electricity hazard due to short circuit |    | Open burning by human |    | When rock underground suddenly breaks along a fault. |    |
| Asset  | Vulnerability rating |    | Vulnerability rating    |    | Vulnerability rating                    |    | Vulnerability rating  |    | Vulnerability rating                                 |    |
| Student  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Staff  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Main school building                           | MH                   | 7  | M                       | 6  | H                                       | 10 | H                     | 10 | MH   | 7  |
| IT/Communications System                       | ML                   | 4  | MH                      | 7  | M                                       | 6  | M                     | 6  | ML   | 4  |
| Utility Systems (gas, electrical, sewer/water) | M                    | 6  | MH                      | 8  | H                                       | 9  | H                     | 9  | M  | 6  |
| School/Student Records                         | M                    | 6  | M                       | 6  | M                                       | 6  | 6                     | 9  | M  | 6  |
| Transportation (buses and parking)             | MH                   | 7  | H                       | 8  | MH                                      | 7  | H                     | 8  | MH   | 7  |
| Administrative Functions                       | M                    | 6  | M                       | 9  | MH                                      | 7  | M                     | 6  | M  | 6  |
| Food Service (cafeteria/kitchen)               | H                    | 8  | H                       | 8  | H                                       | 8  | H                     | 8  | H  | 8  |

vii. Tahfiz G

While Tahfiz G is in a situation that is quite dangerous in the event of any natural disaster because the surface area of his land that is quite hilly. For backyard Tahfiz, land is hilly. But the hillside slopes, it is not just a relatively high Hill a little. So, in the event of any act of God, will be overtaken by Tahfiz danger. Figure 4.13 it shows the contour scaling for this Tahfiz are 460 meter from sea level. Among the disasters that can be identified are the landslides. Conclusions, Tahfiz is safe and need a little observation because Figure 4.14 shows it is in a hilly and at risk for any natural disaster. Table 4.7 shown the vulnerability analysis of Tahfiz G.

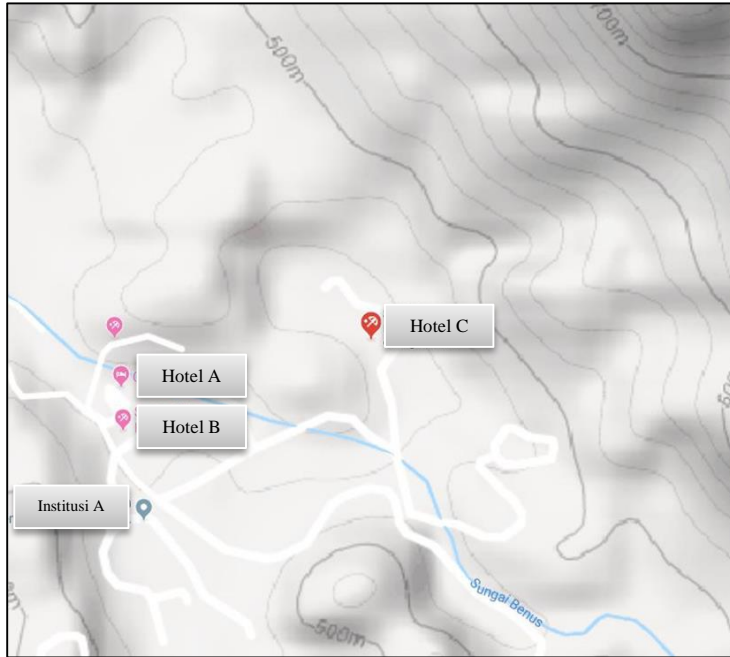


Figure 4.13 Contour scale at Tahfiz G

Source: Adapted from Google Earth

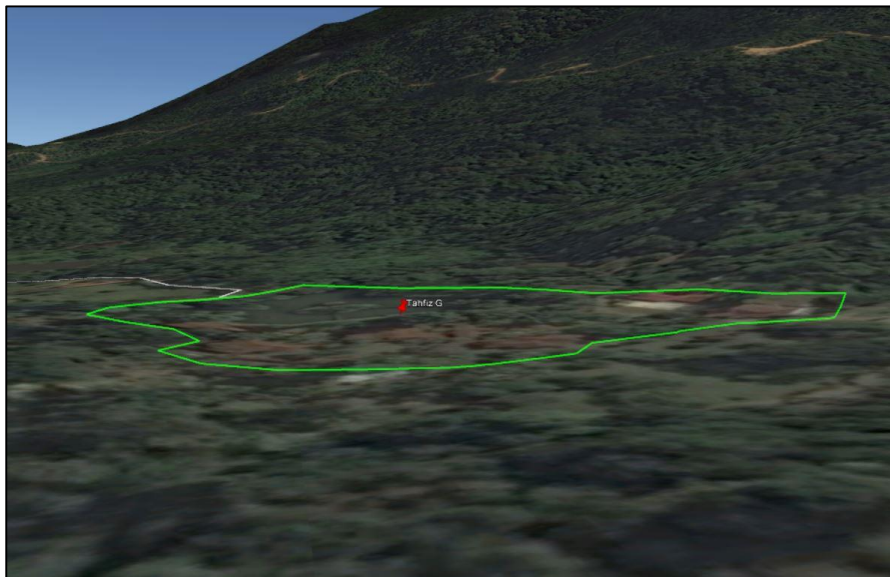


Figure 4.14 Position and view of slope at Tahfiz G

Source: Adapted from Google Earth

Table 4.7 Vulnerability analysis of Tahfiz G

| Asset  | Threat /hazard       |    |                         |    |   |    |                       |    |  |    |
|--|----------------------|----|-------------------------|----|---|----|-----------------------|----|--|----|
|  | Landslide            |    | Flash flood             |    | Structural fire                         |    | Open fire             |    | Earthquake   |    |
|  | Soil erosion         |    | Heavy rain continuously |    | Electricity hazard due to short circuit |    | Open burning by human |    | When rock underground suddenly breaks along a fault. |    |
| Asset  | Vulnerability rating |    | Vulnerability rating    |    | Vulnerability rating                    |    | Vulnerability rating  |    | Vulnerability rating                                 |    |
| Student  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Staff  | VH                   | 10 | VH                      | 10 | VH                                      | 10 | VH                    | 10 | VH   | 10 |
| Main school building                           | MH                   | 7  | M                       | 6  | H                                       | 10 | H                     | 10 | MH   | 7  |
| IT/Communications System                       | ML                   | 4  | MH                      | 7  | M                                       | 6  | M                     | 6  | ML   | 4  |
| Utility Systems (gas, electrical, sewer/water) | M                    | 6  | MH                      | 8  | H                                       | 9  | H                     | 9  | M  | 6  |
| School/Student Records                         | M                    | 6  | M                       | 6  | M                                       | 6  | 6                     | 9  | M  | 6  |
| Transportation (buses and parking)             | MH                   | 7  | H                       | 8  | MH                                      | 7  | H                     | 8  | MH   | 7  |
| Administrative Functions                       | M                    | 6  | M                       | 9  | MH                                      | 7  | M                     | 6  | M  | 6  |
| Food Service (cafeteria/kitchen)               | H                    | 8  | H                       | 8  | H                                       | 8  | H                     | 8  | H  | 8  |

#### 4.2.1.1 Vulnerability Mapping among Tahfiz Institutions

There are flash flood cases happened at Cameron Highland according to BERNAMA (2016) in December 2016 due to heavy rains and cause landslide. This situation is quite similar to flash flood cases that happen at several Tahfiz Institutions in Janda Baik. Although the Tahfiz are located at high area, there is a river placed near these Tahfiz such as Tahfiz F, Tahfiz A, Tahfiz B and Tahfiz G which contribute these threat to happen. Other three Tahfiz (Tahfiz D, Tahfiz E and Tahfiz C) also have potential for flash flood to happen at their place.

BERNAMA (2011) on May 21, 2011 total of 24 people consisting of orphans, warden and staff of the Orphanage House and the Hidayah Children of Madrasah Al-Taqwa were buried in the landslide in Hulu Langat. This incident occurred after heavy rains. In Malaysia,

some studies have shown the negative effects of uncontrolled development on the highland environment. Lim and Lee (1992) have examined the highland development in Malaysia and summarize that uncontrollable rapid development has led to environmental degradation resulting in environmental disasters. Through contour scale and slope evaluation among the Tahfiz Institutions in Janda Baik, all Tahfiz have similar potential for landslide to happen and the top three Tahfiz that have this threat to happen are Tahfiz A, Tahfiz F and Tahfiz G based on the slope that are formed in that area.

BERNAMA (2009) reported that there was a sequence of earthquake occurrence happened at Janda Baik, Pahang with Richter scale of 2.2 and 2.8. Through this cases it proven that there is potential of earthquake to happen at Janda Baik. This statement also supported by contour scale and slope which show that all of Tahfiz Institutions are located exceed 400 meter from sea level. In general, if the contour scale is above 400 meter it has high potential for earthquake occur naturally.

#### **4.2.1.2 Vulnerability Analysis among the Tahfiz Institutions**

Based on the Table 4.8 it showed that have several threat and hazard that can occur in this Tahfiz area such as landslide, flash flood, structural fire, open fire and earthquake. Based on the Table 4.8 the vulnerability analysis for this hazard are show that people are susceptible affected because it can cause fatalities and severe injuries. The finding was proven by FEMA that show people is very high affected because it can cause extensive loss of life, widespread severe injuries. Other than that, the building area are show high and medium indicator and it can cause of loss of primary services, or major loss of core functions and processes for an extended.

Table 4.8 shown the highest value of vulnerability analysis for the seven Tahfiz , based on the result it show this two asset are highly capable of causing loss of, or damage to the school exist. One or more vulnerabilities are present. The aggressors are known or highly suspected of having intent to exploit the Tahfiz assets and are known or highly suspected of performing surveillance on a facility.

Meanwhile, the building, transportation and utilities will be affected if the hazard occurs because the hazard can destroy or damage the facilities, property, equipment or resources. It is proven by FEMA that building, transportation and utilities are highly affected if this hazard occurs because it can cause loss of primary services, or major loss of core functions and processes for an extended period of time.

Table 4.8 Summary of Vulnerability Analysis for Tahfiz Institutions at Kampung Janda Baik, Pahang

| Tahfiz /Hazard | Landslide |        | Flash Floods |        | Structural Fire |        | Open Fire |        | Earthquake |        |
|----------------|-----------|--------|--------------|--------|-----------------|--------|-----------|--------|------------|--------|
|                | Asset     | People | Building     | People | Building        | People | Building  | People | Building   | People |
| Tahfiz A       | VH-10     | MH-7   | VH-10        | M-6    | VH-10           | H-9    | VH-10     | H-9    | VH-10      | MH-7   |
| Tahfiz B       | VH-10     | MH-7   | VH-10        | M-6    | VH-10           | H-9    | VH-10     | H-9    | VH-10      | MH-7   |
| Tahfiz C       | VH-10     | MH-7   | VH-10        | M-6    | VH-10           | H-9    | VH-10     | H-9    | VH-10      | MH-7   |
| Tahfiz D       | VH-10     | MH-7   | VH-10        | M-6    | VH-10           | H-9    | VH-10     | H-9    | VH-10      | MH-7   |
| Tahfiz E       | VH-10     | MH-7   | VH-10        | M-6    | VH-10           | H-9    | VH-10     | H-9    | VH-10      | MH-7   |
| Tahfiz F       | VH-10     | MH-7   | VH-10        | M-6    | VH-10           | H-9    | VH-10     | H-9    | VH-10      | MH-7   |
| Tahfiz G       | VH-10     | MH-7   | VH-10        | M-6    | VH-10           | H-9    | VH-10     | H-9    | VH-10      | MH-7   |



### 4.3 Availability Emergency Management in Tahfiz Institutions

Availability of the emergency management in Tahfiz Institutions it to ensure the equipment and facilities that are provided are comply with the requirement and standard that are enforced by the authorities. Therefore, to ensure that the Tahfiz has and provides safe equipment and facilities to students and teachers it need to conduct a self-assessment based on the Self-Assessment checklist, this checklist covers several sections it include safety and health policy, safety and health committee, personal safety, fire prevention / protection / fire prevention, electrical / building / storage, welfare and on-premise conditions involving office space, class, dormitory and canteen / dining room.

#### 4.3.1 Safety and Health Policy

Table 4.9 Safety and Health Policy

| Tahfiz   | a) Has a policy (compulsory for those who have a more than 5 employees). |    | (b) Display the policy. |    | (c) Policy is informed to employees. |    |
|----------|--|----|-------------------------|----|--------------------------------------|----|
|          | YES  | NO | YES                     | NO | YES                                  | NO |
| Tahfiz A | √  |    | √                       |    | √                                    |    |
| Tahfiz B | √  |    | √                       |    | √                                    |    |
| Tahfiz C | √  |    | √                       |    | √                                    |    |
| Tahfiz D | √  |    | √                       |    | √                                    |    |
| Tahfiz E | √  |    | √                       |    | √                                    |    |
| Tahfiz F |  | √  |                         | √  |                                      | √  |
| Tahfiz G |  | √  |                         | √  |                                      | √  |

For the safety and health policy it the Table 4.9 showed that Tahfiz A, Tahfiz B, Tahfiz C, Tahfiz D and Tahfiz E was provide the safety policy and being displays that policy to ensure that the occupant on their Tahfiz are well known about the safety.

Meanwhile, Tahfiz F and Tahfiz G still did not provide safety policy in their Tahfiz Institutions, based on the interview with Tahfiz management they are in process to provide safety policy to the students and the staff.

Besides, as stated on Consortium for Disaster Education Indonesia (2011) school policy is a formally binding decision made by schools on the matters that need to support the implementation of Disaster Risk Reduction (DRR) in school, both specifically and integrated. School's policy are the foundation, guideline, and direction for the implementation of activities relevant to DRR in school. The availability of policy, agreement and school regulation are involve with the effort in reducing the disaster risk in school. It means the safety policy is very important for the school in order to provide the safety information for the Tahfiz community.

### 4.3.2 Safety and Health Committee

Table 4.10 Safety and Health Committee

| Tahfiz   | (a) Form a safety and health committee which consists of management and employees (compulsory for those with 40 employees). |    | (b) Hold regular meetings (at least Once every 3 months). |    |
|----------|---|----|---|----|
|          | YES   | NO | YES   | NO |
| Tahfiz A | √   |    | √   |    |
| Tahfiz B | √   |    | √   |    |
| Tahfiz C | √   |    | √   |    |
| Tahfiz D | √   |    | √   |    |
| Tahfiz E | √   |    | √   |    |
| Tahfiz F | √   |    | √   |    |
| Tahfiz G | √   |    | √   |    |

Based on the result showed in Table 4.10 show all Tahfiz are aware to creating the safety and health committee in their Tahfiz. The task of the committee are to manage issues that related to health and safety efficiently and effectively as well as to encourage employers and employees to alert about the issues related to occupational safety and health.

The Tahfiz institution has also appointed this committee which consists of the management side and wardens, thus facilitating to other students and staff to deal with this committee. The Tahfiz institution need to hold a meeting at least once every three months, having such meeting it must be relevant to OSH issues to identify problems or accidents that occur.

It is stated in UNISDR (2010) the safety committee need to plan, organize and conduct emergency preparedness training and drills for all students and staff, including persons with disabilities. Other than that, they also need to know on how to coordinate and communicate with local authorities such as police, fire departments, hospitals and the parents or guardians of students in crisis situations. It also need to provide the procurement, storage, and maintenance of emergency supplies, equipment, and program instructional materials and ensure the procedures are regularly maintain. Therefore, safety committee contributed in ensuring the safety and health of Tahfiz Institutions occupants.

### 4.3.3 Personal Safety Facility

Table 4.11 Personal Safety Facility

| Tahfiz   | a) Emergency Doors Signs (Emergency Exit) at each exit. |    | (b) Emergency light. |    | (c) Procedure (Guidelines) during Fire emergency. |    | (d) Fire Safety Notice / Poster. |    | (e) Has exit from the building (at least two doors). |    | (f) Has an emergency staircase for the building multilevel. |    | (g) Doors and windows are mounted on iron grate easy to get out during an emergency |    |
|----------|---|----|----------------------|----|---|----|----------------------------------|----|--|----|---|----|---|----|
|          | YES   | NO | YES                  | NO | YES   | NO | YES                              | NO | YES  | NO | YES   | NO | YES   | NO |
| Tahfiz A | √   |    | √                    |    | √   |    | √                                |    | √  |    | √   |    | √   |    |
| Tahfiz B | √   |    | √                    |    |   | √  |                                  | √  | √  |    |   | √  | √   |    |
| Tahfiz C | √   |    | √                    |    | √   |    |                                  | √  | √  |    |   | √  |   | √  |
| Tahfiz D | √   |    | √                    |    |   | √  |                                  | √  | √  |    | √   |    |   | √  |
| Tahfiz E |   | √  |                      | √  |   | √  |                                  | √  | √  |    | √   |    | √   |    |
| Tahfiz F |   | √  |                      | √  |   | √  |                                  | √  | √  |    | √   |    |   | √  |
| Tahfiz G |   | √  |                      | √  |   | √  |                                  | √  | √  |    |   | √  | √   |    |

Based on the result that show in the Table 4.11 this part will show about the personal safety facility and there are the several aspect that involve in this part which is (a) Emergency Doors Signs (Emergency Exit) at each exit. (b) Emergency light.(c) Procedure (Guidelines) during Fire emergency.(d) Fire Safety Notice / Poster (e) Has exit from the building (at least two doors).(f) Has an emergency staircase for the building multilevel. (g) Doors and windows are mounted on iron grate easy to get out during an emergency.

Based on the result of the observation showed that only Tahfiz A that provide the perfect score Personal Safety Facility than other Tahfiz it because this Tahfiz score the high number of requirement that are needed for the personal safety facility. Meanwhile the other Tahfiz there also provide a personal safety facility available to students and staff but there are still some part that need to be improved to ensure the safety of our students and staff.

This is because “Buku Panduan Keselamatan dan Kesehatan Pekerjaan untuk Sekolah Tahfiz” (2017) has suggested that every Tahfiz Institutions are required to have personal safety facility such as emergency light, procedure (guidelines) during fire emergency, fire safety notice / poster and more.

#### 4.3.4 Fire Prevention / Protection / Consequential Facilities

Table 4.12 Fire Prevention / Protection / Consequential Facilities

| Tahfiz   | (a) There is a fire hydrant (within 90 Meters) near the building / premises. |    | (b) There is a system of heat detectors or smoke. |    | (c) There is an automatic / broken glass alarm system (emergency alarm) |    | (d) There is a portable fire extinguisher (fire extinguisher) at every floor of the building. |    | (e) Portable fire extinguisher is located near with exit. |    | (f) Assembly point (assembly point) provided. |    |
|----------|--|----|---|----|---|----|---|----|---|----|---|----|
|          | YES  | NO | YES   | NO | YES   | NO | YES   | NO | YES   | NO | YES   | NO |
| Tahfiz A | √  |    | √   |    | √   |    | √   |    | √   |    | √   |    |
| Tahfiz B |  | √  | √   |    | √   |    | √   |    | √   |    | √   |    |
| Tahfiz C | √  |    | √   |    |   | √  | √   |    | √   |    | √   |    |
| Tahfiz D | √  |    |   | √  | √   |    | √   |    | √   |    |   | √  |
| Tahfiz E |  | √  |   | √  | √   |    | √   |    | √   |    | √   |    |
| Tahfiz F | √  |    |   | √  |   | √  | √   |    | √   |    |   | √  |
| Tahfiz G |  | √  |   | √  |   | √  |   | √  | √   |    |   | √  |

Table 4.12 Fire Prevention / Protection / Consequential Facilities (continued)

| Tahfiz   | (g) Emergency contact telephone is provided |    | (h) Fire drill and evacuation are conducted (at least once a year) |    | (i) There is an emergency first aid kit and the contents of a first aid kit that has not been expired and sufficient. |    | (j) There is a trained first aider |    | (k) Basic training of first aid to staff / teachers / asatizah |    |
|----------|---|----|--|----|---|----|------------------------------------|----|--|----|
|          | YES   | NO | YES  | NO | YES   | NO | YES                                | NO | YES  | NO |
| Tahfiz A | √   |    | √  |    | √   |    | √                                  |    | √  |    |
| Tahfiz B | √   |    | √  |    | √   |    | √                                  |    | √  |    |
| Tahfiz C | √   |    | √  |    | √   |    | √                                  |    | √  |    |
| Tahfiz D | √   |    |  | √  | √   |    | √                                  |    | √  |    |
| Tahfiz E | √   |    | √  |    | √   |    | √                                  |    | √  |    |
| Tahfiz F | √   |    | √  |    | √   |    | √                                  |    | √  |    |
| Tahfiz G | √   |    |  | √  | √   |    | √                                  |    | √  |    |



Based on Table 4.12 showed that the result of fire prevention, protection and consequential facilities on the Tahfiz institution. Based on the checklist it includes several aspects which is (a) There is a fire hydrant (within 90 Meters) near the building / premises. (b) There is a system of heat detectors or smoke.(c) There is an automatic / broken glass alarm system(emergency alarm)(d) There is a portable fire extinguisher (fire extinguisher) at every floor of the building.(e) Portable fire extinguisher is located near with exit.(f) Assembly point (assembly point) provided. (g) Emergency contact telephone is provided(h) Fire drill and evacuation are conducted (at least once a year)(i) There is an emergency first aid kit and the contents of a first aid kit that has not been expired and sufficient.(j) There is a trained first aider(k) Basic training of first aid to staff / teachers / asatizah.

Based on the result of the checklist it show that the Maahad Tahfiz Tahfiz A are only one Tahfiz that are comply with the requirement that are endorsed by the authorities.

Meanwhile, Tahfiz B only did not comply with the providing the nearest fire hydrant on the Tahfiz area. Tahfiz E also did not comply with the fire hydrant and they did not provide the heat detector on their Tahfiz area. Tahfiz C only did not provide the fire alarm on their Tahfiz. Tahfiz G did not comply with this requirement due to do not comply with the providing the fire hydrant, heat detector, fire drill and also assembly point. Tahfiz D also did not provide the heat detector, assembly point and provide the fire drill. Tahfiz F also did not provide the heat detector, alarm system and also assembly point.

In International Finance Corporation (2010) fire prevention and fire safety are measures as a part of initial school design, and also require regular maintenance and testing. Other than that, mechanical, electrical, and civil structures and systems are need to properly maintained and operable, also need to comply with life and fire safety design criteria. Based on this statement the Tahfiz Institutions need to do regularly inspection and maintenance of fire prevention system because it needs in a good condition and complying with the safety design criteria.

### 4.3.5 Electrical Safety / Building / Storage

Table 4.13 Electrical Safety / Building / Storage

| Tahfiz   | (a) Maintained by a competent person |    | (b) Scheduled maintenance (circuit breaker, gen set) plug. |    | (c) Electrical equipment is connected and within safe condition. |    | (d) Adequate lighting (not dim). |    | (e) Floor / Road (not slippery, broken, steep). |    |
|----------|--------------------------------------|----|--|----|--|----|----------------------------------|----|---|----|
|          | YES                                  | NO | YES  | NO | YES  | NO | YES                              | NO | YES   | NO |
| Tahfiz A | √                                    |    | √  |    | √  |    | √                                |    | √   |    |
| Tahfiz B | √                                    |    | √  |    | √  |    | √                                |    | √   |    |
| Tahfiz C | √                                    |    | √  |    | √  |    | √                                |    | √   |    |
| Tahfiz D | √                                    |    | √  |    | √  |    | √                                |    | √   |    |
| Tahfiz E | √                                    |    | √  |    | √  |    | √                                |    | √   |    |
| Tahfiz F | √                                    |    | √  |    | √  |    | √                                |    | √   |    |
| Tahfiz G | √                                    |    | √  |    | √  |    | √                                |    | √   |    |

Table 4.13 Electrical Safety / Building / Storage (continued)

| Tahfiz   | (f) Roof / Ceiling (no fungal / bent / decay). |    | (g) Layout of items in a neat and must label. |    | (h) Path are not blocked |    | (i) How to arrange safe |    |
|----------|--|----|---|----|--------------------------|----|-------------------------|----|
|          | YES  | NO | YES   | NO | YES                      | NO | YES                     | NO |
| Tahfiz A | √  |    | √   |    |                          | √  | √                       |    |
| Tahfiz B | √  |    | √   |    |                          | √  | √                       |    |
| Tahfiz C | √  |    | √   |    |                          | √  | √                       |    |
| Tahfiz D | √  |    | √   |    |                          | √  | √                       |    |
| Tahfiz E | √  |    | √   |    |                          | √  | √                       |    |
| Tahfiz F | √  |    | √   |    |                          | √  | √                       |    |
| Tahfiz G | √  |    | √   |    |                          | √  | √                       |    |

Based on the result on Table 4.13 it show that the matters that related on electricity safety, building and storage. To ensure all Tahfiz are comply with the requirement of this part they need to ensure the thing that involve on this checklist which is (a) Maintained by a competent person(b) Scheduled maintenance (circuit breaker, gen set) plug.(c) Electrical equipment is connected and within safe condition.(d) Adequate lighting (not dim) (e) Floor / Road (not slippery, broken, steep) (f) Roof / Ceiling (no fungal / bent / decay).(g) Layout of items in a neat and must label.(h) Path are not blocked (i) How to arrange safe,

Based on the result it show that all Tahfiz are very serious about the following matter, because it must be done by a competent person that involve, in the checklist it need a person that surely well-known on the safety in the building because as we know if there any problem in any part of equipment or wiring system, it will cause a profound impact such as the occurrence of happening in the several Tahfiz in Malaysia.

According to Healthy Facilities Handbook Staff (2017) school buildings are designed to promote wellness and comfort from the start based on several factors. It means that the Tahfiz management need to come out with their own principle on how to ensure safety and health in the school.

### 4.3.6 Welfare

Table 4.14 Welfare

| Tahfiz   | (a) Toilet facilities<br>(male and female<br>separation) |    | (b) Dining room |    | (c) Surau |    | (d) Sports and social<br>facilities |    | (e) Bathrobe / place of<br>clothing |    |
|----------|--|----|-----------------|----|-----------|----|-------------------------------------|----|-------------------------------------|----|
|          | YES  | NO | YES             | NO | YES       | NO | YES                                 | NO | YES                                 | NO |
| Tahfiz A | √  |    | √               |    | √         |    | √                                   |    | √                                   |    |
| Tahfiz B | √  |    | √               |    | √         |    | √                                   |    | √                                   |    |
| Tahfiz C | √  |    | √               |    | √         |    | √                                   |    | √                                   |    |
| Tahfiz D | √  |    | √               |    | √         |    | √                                   |    | √                                   |    |
| Tahfiz E | √  |    | √               |    | √         |    | √                                   |    | √                                   |    |
| Tahfiz F | √  |    | √               |    | √         |    | √                                   |    | √                                   |    |
| Tahfiz G | √  |    | √               |    | √         |    | √                                   |    | √                                   |    |

Based on the result from Table 4.14 it showed that all Tahfiz are provided proper welfare for all occupant in their Tahfiz by providing (a) Toilet facilities (male and female separation) (b) Dining room (c) Surau (d) Sports and social facilities (e) Bathrobe / place of clothing and based on the observation this place are on good condition.

It show that the Tahfiz management are care about the welfare of students and employees in their Tahfiz and the equipment that are provided to ensure their comfort as long as they are in the institution.

According to Baulkham Hills High School (2011) student Welfare is the one of part that need to concern for every member of staff. In its widest context it covers the safety of all students, their emotional, social and intellectual well-being as well as their conduct and behaviour. In this statements it proven that Tahfiz management are responsible to provide the proper equipment and facilities for their student and staff.

### 4.3.7 Condition of Facilities in Premise (Office)

Table 4.15 Condition of Facilities in Premise (Office)

| Tahfiz   | (a) Clean and comfortable |    | (b) Table and seat state (if any) |    | (c) Good and tidy electrical wiring |    | (d) Lighting / brightness of the lamp |    | (e) Fire extinguishers are provided |    | (f) First aid box |    | (g) No obstacles on the emergency route |    |
|----------|---------------------------|----|-----------------------------------|----|-------------------------------------|----|---------------------------------------|----|-------------------------------------|----|-------------------|----|---|----|
|          | YES                       | NO | YES                               | NO | YES                                 | NO | YES                                   | NO | YES                                 | NO | YES               | NO | YES                                     | NO |
| Tahfiz A | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    | √                 |    |   | √  |
| Tahfiz B | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    | √                 |    |   | √  |
| Tahfiz C | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    | √                 |    |   | √  |
| Tahfiz D | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    | √                 |    |   | √  |
| Tahfiz E | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    | √                 |    |   | √  |
| Tahfiz F | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    | √                 |    |   | √  |
| Tahfiz G | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    | √                 |    |   | √  |

### 4.3.8 Condition of Facilities in Premise (Class)

Table 4.16 Condition of Facilities in Premise (Class)

| Tahfiz   | (a) Clean and comfortable |    | (b) Table and seat state (if any) |    | (c) Good and tidy electrical wiring |    | (d) Lighting / brightness of the lamp |    | (e) Fire extinguishers are provided |    | (g) No obstacles on the emergency route |    |
|----------|---------------------------|----|-----------------------------------|----|-------------------------------------|----|---------------------------------------|----|-------------------------------------|----|---|----|
|          | YES                       | NO | YES                               | NO | YES                                 | NO | YES                                   | NO | YES                                 | NO | YES                                     | NO |
| Tahfiz A | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    |   | √  |
| Tahfiz B | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    |   | √  |
| Tahfiz C | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    |   | √  |
| Tahfiz D | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    |   | √  |
| Tahfiz E | √                         |    | √                                 |    | √                                   |    | √                                     |    |                                     | √  |   | √  |
| Tahfiz F | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    |   | √  |
| Tahfiz G | √                         |    | √                                 |    | √                                   |    | √                                     |    |                                     | √  |   | √  |



### 4.3.9 Condition of Facilities in Premise (Hostel)

Table 4.17 Condition of Facilities in Premise (Hostel)

| Tahfiz   | (a) Clean and comfortable |    | (b) The condition of the bed is in good condition and arranged |    | (c) Density of room space |    | (d) Good and neat electrical wiring |    | (e) Lighting / brightness of the lamp |    | (f) Fire extinguishers are provided |    | (g) First aid kit box |    | (h) No obstacles on the emergency route |    |   |
|----------|---------------------------|----|--|----|---------------------------|----|-------------------------------------|----|---------------------------------------|----|-------------------------------------|----|-----------------------|----|---|----|---|
|          | YES                       | NO | YES  | NO | YES                       | NO | YES                                 | NO | YES                                   | NO | YES                                 | NO | YES                   | NO | YES                                     | NO |   |
| Tahfiz A | √                         |    | √  |    | √                         |    | √                                   |    | √                                     |    | √                                   |    | √                     |    |   |    | √ |
| Tahfiz B | √                         |    | √  |    | √                         |    | √                                   |    | √                                     |    | √                                   |    | √                     |    |   |    | √ |
| Tahfiz C | √                         |    | √  |    | √                         |    | √                                   |    | √                                     |    | √                                   |    |                       | √  |   |    | √ |
| Tahfiz D | √                         |    | √  |    | √                         |    | √                                   |    | √                                     |    | √                                   |    |                       | √  |   |    | √ |
| Tahfiz E | √                         |    | √  |    | √                         |    | √                                   |    | √                                     |    | √                                   |    | √                     |    |   |    | √ |
| Tahfiz F | √                         |    | √  |    | √                         |    | √                                   |    | √                                     |    | √                                   |    |                       | √  |   |    | √ |
| Tahfiz G | √                         |    | √  |    | √                         |    | √                                   |    | √                                     |    |                                     | √  |                       | √  |   |    | √ |

#### 4.3.10 Condition of Facilities in Premise (Canteen)

Table 4.18 Condition of Facilities in Premise (Canteen)

| Tahfiz   | (a) Clean and comfortable |    | (b) Table and seat state (if any) |    | (c) Good and tidy electrical wiring |    | (d) Lighting / brightness of the lamp |    | (e) Fire extinguishers are provided |    | (g) No obstacles on the emergency route |    |
|----------|---------------------------|----|-----------------------------------|----|-------------------------------------|----|---------------------------------------|----|-------------------------------------|----|---|----|
|          | YES                       | NO | YES                               | NO | YES                                 | NO | YES                                   | NO | YES                                 | NO | YES                                     | NO |
| Tahfiz A | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    |   | √  |
| Tahfiz B | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    |   | √  |
| Tahfiz C | √                         |    |                                   | √  | √                                   |    | √                                     |    | √                                   |    |   | √  |
| Tahfiz D | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    |   | √  |
| Tahfiz E | √                         |    |                                   | √  | √                                   |    | √                                     |    | √                                   |    |   | √  |
| Tahfiz F | √                         |    |                                   | √  | √                                   |    | √                                     |    | √                                   |    |   | √  |
| Tahfiz G | √                         |    | √                                 |    | √                                   |    | √                                     |    | √                                   |    |   | √  |

This Table 4.15 are show the result of the condition of facilities that provide in the premise. There have four area that are cover on this observation which is office, class, hostel and canteen/dining hall.

There have several aspect that involve of the assessment in office area which is (a) Clean and comfortable (b) Table and seat state (if any) (c) Good and tidy electrical wiring(d) Lighting / brightness of the lamp (e) Fire extinguishers are provided (f) First aid box (g) No obstacles on the emergency route, based on Table 4.15 it show that all Tahfiz are have are in good condition because they can provide the requirement that need to have in the office area.

Other than that it also have a several assessment that need to observe in class area which is (a) Clean and comfortable (b) Table and seat state (if any) (c) Good and tidy electrical wiring (d) Lighting / brightness of the lamp (e) Fire extinguishers are provided (g) No obstacles on the emergency route

Table 4.16 show that five Tahfiz are achieved the requirement that are need to provide in the class of the Tahfiz , only Tahfiz E and Tahfiz G did not achieved in term of providing the fire extinguisher in the class area.

Meanwhile, the aspect that it also have a several assessment that need to observe in hostel area which is (a) Clean and comfortable (b) The condition of the bed is in good condition and arranged (c) Density of room space (d) Good and neat electrical wiring (e) Lighting / brightness of the lamp (f) Fire extinguishers are provided (g) First aid kit box(h) No obstacles on the emergency route, Table 4.17 shows only Tahfiz A and Tahfiz E that comply with the requirement that are needed by the authorities. While the other five Tahfiz did not first aid box kit in the hostel area, because only wardens that hold the first aid kit, and only Tahfiz G did not provide fire extinguisher in the hostel area, due to they did not have enough of fire extinguisher that can they provide on other places.

Lastly, the aspect that it also have a several assessment that need to observe in canteen/dining hall area which is (a) Clean and comfortable (b) Table and seat state (if any) (c) Good and tidy electrical wiring (d) Lighting / brightness of the lamp (e) Fire extinguishers are provided (g) No obstacles on the emergency route, Table 4.18 it showed that Tahfiz A, Tahfiz B, Tahfiz D and Tahfiz G are provide the item that need on the

checklist, meanwhile Tahfiz C, Tahfiz E and Tahfiz F did not provide table and chair for the dining area.

As stated in International Finance Corporation (2010) it need to take a step further to assess a non-structural risks associated with the buildings. This step can help to identify those measures that can be taken to make classrooms, offices, and common spaces safer. The review team should include users of each space as well as facilities maintenance staff. Based on the statements, the Tahfiz management need to appoint a person in-charge for the several area in their Tahfiz in order to maintain the area and ensure the place are comply and safe to use.

#### **4.4 Knowledge on Emergency Preparedness among Wardens and Students at Tahfiz Institutions**

##### **4.4.1 Demographic Analysis**

##### **4.4.1.1 Occupation**

The question of occupation was included in the questionnaires to establish the occupation ratio of participants and also to understand the perspectives regarding to student and teachers level of knowledge towards emergency preparedness .The results obtained are presented in Figure 4.15.

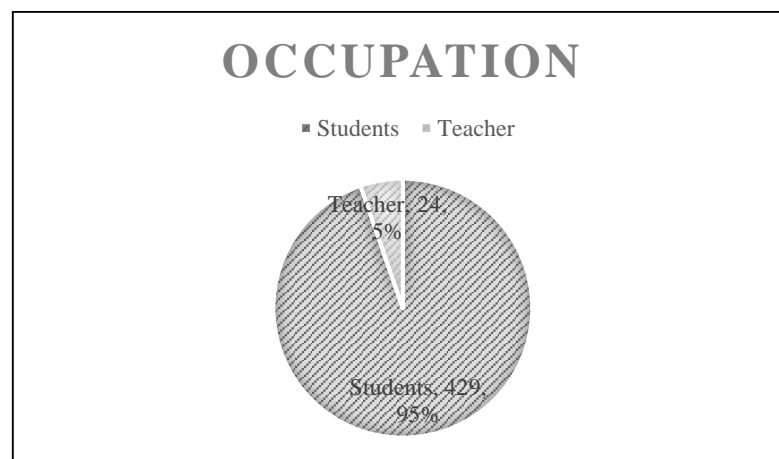


Figure 4.15 Occupation of respondent

#### 4.4.1.2 Age

There are studies which show that in some situations the children and the elderly are more vulnerable to the impacts of natural disaster (Walker, 1991). In the same way that children and elderly are found vulnerable to the impacts of natural disasters, they are vulnerability to impacts of chemical hazards due to physical inability to act swiftly for their own protection. Awareness initiatives should take into account the age factor hence inclusion of age in this questionnaire. This question was included to establish understanding of student and warden knowledge in different age groups. The result of question had been shown in Figure 4.16

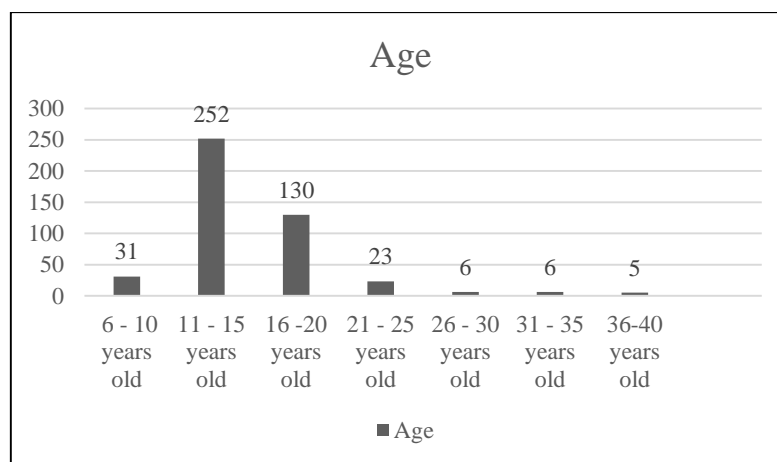


Figure 4.16 Age of respondents

#### 4.4.2 Level of Knowledge

Knowledge is defined as “the fact or condition of knowing something with a considerable degree of familiarity through experience, association or contact” (Casey, 2008). The question was included to evaluate whether the participants in the study have knowledge on emergency preparedness toward safety and health in their surrounding area at the Tahfiz institution area.

#### 4.4.2.1 Knowledge on Other Hazard

Table 4.19 Knowledge on Other Hazard

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz A                   | 97                       | 3.61              | High                        | 1                         |
| Tahfiz D                   | 33                       | 3.55              | High                        | 2                         |
| Tahfiz F                   | 28                       | 3.25              | Moderate                    | 3                         |
| Tahfiz C                   | 108                      | 3.2               | Moderate                    | 4                         |
| Tahfiz B                   | 19                       | 3.16              | Moderate                    | 5                         |
| Tahfiz E                   | 144                      | 3.14              | Moderate                    | 6                         |
| Tahfiz G                   | 24                       | 3                 | Moderate                    | 7                         |
|                            | <b>453</b>               | <b>3.27</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

According to Whittow (1979) hazard is a perceived natural event which threatens both life and property, while Gravley (2001) hazard is a condition or situation which has the potential to create harm to people, property, or the environment.

Table 4.19 show the moderate result in average mean (3.27). Based on the question, Tahfiz Tahfiz A and Tahfiz D achieve high level of knowledge about hazard that can happen in their institution which are 3.61 and 3.55 respectively. It means that the student and wardens in this two institutions are always been given exposure and exercise about the issues.

In addition, the other five institution in moderate level of knowledge about hazard due to less of exercise about this issues. Based on this result it show that student and wardens full aware on the other hazard that can happen on their Tahfiz . Based on observations and previous cases in Janda Baik, this area are exposed to hazards such as earthquakes, landslides and flash floods and most of these Tahfiz Institutions operate in hilly terrain and close to the rivers, so the probability of occurrence such as landslides and flash floods is extremely very high. Based on the answers given in the questionnaire, it shows students and warden in every Tahfiz know about the other hazard than fire.

As stated in FEMA (2013) schools must develop the prioritized list of hazards, in order to determine the assessment process. As planning teams it need to develop a courses of action for threats and hazards, they should consider the federal, state, and local regulations or mandates that often apply to specific hazards. Tahfiz management need to identify the potential hazard that be high probability to incident are occurs.

#### 4.4.2.2 Safety Briefing

Table 4.20 Safety Briefing

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz C                   | 108                      | 3.81              | High                        | 1                         |
| Tahfiz A                   | 97                       | 3.79              | High                        | 2                         |
| Tahfiz B                   | 19                       | 3.74              | High                        | 3                         |
| Tahfiz F                   | 28                       | 3.57              | High                        | 4                         |
| Tahfiz E                   | 144                      | 3.09              | Moderate                    | 5                         |
| Tahfiz G                   | 24                       | 3.08              | Moderate                    | 6                         |
| Tahfiz D                   | 33                       | 2.61              | Moderate                    | 7                         |
|                            | <b>453</b>               | <b>3.38</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

Table 4.20 show the moderate result in average (3.38). Based on the question, Tahfiz C, Tahfiz A, Tahfiz B and Tahfiz F archieve high level by providing safety briefing before the learning session begins every year in their institutions which are 3.81, 3.79 and 3.74 respectively. It means student and wardens in four institutions are provide clear information that related to safety issues. Meanwhile, the other three Tahfiz in moderate level due to did not provide clear safety briefing to students and wardens for lack of exposure on how to provide accurate safety briefing. Safety briefing should be done at least once a year before the learning session begins every year it because all students that enrolled for each year they need to get information about the safety within the Tahfiz area, an this safety briefing should be given by a competent person whether a safety practioner or a staff who has been training on how to provide safety briefing.

Safety briefings are a useful way to keep health and safety forefront in the minds of people and make them aware of current risks and hazards. Yearly safety briefings by supervisors to improve health and safety culture (Leadership and Worker Engagement,

2012). Generally, topic that given to the student in Tahfiz Institutions in safety briefing are focusing on emergency procedure as well as safety and health aspect.

#### 4.4.2.3 Emergency Drill

Table 4.21 Emergency Drill

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz B                   | 19                       | 3.37              | Moderate                    | 1                         |
| Tahfiz C                   | 108                      | 2.89              | Moderate                    | 2                         |
| Tahfiz A                   | 97                       | 2.87              | Moderate                    | 3                         |
| Tahfiz E                   | 144                      | 2.43              | Low                         | 4                         |
| Tahfiz D                   | 33                       | 2.21              | Low                         | 5                         |
| Tahfiz G                   | 24                       | 2.13              | Low                         | 6                         |
| Tahfiz F                   | 28                       | 2.07              | Low                         | 7                         |
|                            | <b>453</b>               | <b>2.57</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

Table 4.21 show the moderate result in average (2.57). Based on the question only Tahfiz B, Tahfiz C and Tahfiz A are archive moderate level by conducting any safety and health drill in their institutions which are 3.37,2.89 and 2.87 respectively. It means student and wardens on this three intitutions are often given training on safety and health as long as they are in the Tahfiz area, such as on how to use proper fire extinguisher and how to store the dangerous goods. Meanwhile the other four Tahfiz in low level in conducting safety and health drill, it means this four Tahfiz are did not provide or rarely conducted safety & health drill due to lack of less training and courses that are given to the management. All Tahfiz need to providing any safety and health drill to the occupant on their Tahfiz , it to ensure that the occupant on the Tahfiz have a knowledge on safety and health if accident happen on their institutions.

As stated in UNISDR (2010) emergency drills and exercises should be conducted regularly in schools to develop the capacity of students to respond to a disaster, as well as to raise the awareness of students and staff on disaster mitigation. Drills offer the opportunity to identify training needs, establish new reflexes, and teach through action and repetition. Based on the statements, the Tahfiz Institutions need to conducted the emergency drill regularly in order to improve the level of knowledge on the emergency drill.



#### 4.4.2.4 Risk Awareness

Table 4.22 Risk Awareness

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz G                   | 24                       | 3.67              | High                        | 1                         |
| Tahfiz D                   | 33                       | 3.61              | High                        | 2                         |
| Tahfiz A                   | 97                       | 3.52              | High                        | 3                         |
| Tahfiz C                   | 108                      | 3.44              | Moderate                    | 4                         |
| Tahfiz F                   | 28                       | 3.29              | Moderate                    | 5                         |
| Tahfiz B                   | 19                       | 3.26              | Moderate                    | 6                         |
| Tahfiz E                   | 144                      | 3.25              | Moderate                    | 7                         |
|                            | <b>453</b>               | <b>3.43</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

According to Smith's (1996) risk is an actual exposure of something of human value that exposed to hazard and is often regarded as the combination of probability and loss.

Table 4.22 show the moderate result in average (3.43). Based on the question, Tahfiz G, Tahfiz D and Tahfiz A achieve high level in term of identifying the risk that will occur during the activities that are provide in their Institutions which are 3.67, 3.61 and 3.52 respectively. It means show that student and wardens full aware on the risks that will occur during your activities in Tahfiz that can happen on their Tahfiz . Meanwhile, the other four Tahfiz are in moderate level which means the students and wardens perceived that they have knowledge about the risks that will occur during their activities in Tahfiz but they are still at low level on mastering and application the natural hazard such as flash flood and landslide.

As stated in the International Finance Corporation (2010) risks are assessed by considering potential hazards whether these are natural, man-made, or combined, in relationship to a community's vulnerability characteristics such as the circumstances that make it susceptible to damaging effects of a hazard. Based on the statetement, the student and wardens in Tahfiz Institutions need to identify the risk that have high potential of causing hazards.

#### 4.4.2.5 Emergency Plan

Table 4.23 Emergency Plan

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz A                   | 97                       | 4.28              | High                        | 1                         |
| Tahfiz C                   | 108                      | 4.22              | High                        | 2                         |
| Tahfiz F                   | 28                       | 3.86              | High                        | 3                         |
| Tahfiz B                   | 19                       | 3.84              | High                        | 4                         |
| Tahfiz E                   | 144                      | 3.34              | Moderate                    | 5                         |
| Tahfiz D                   | 33                       | 2.88              | Moderate                    | 6                         |
| Tahfiz G                   | 24                       | 2.17              | Low                         | 7                         |
|                            | <b>453</b>               | <b>3.51</b>       | <b>High</b>                 | <b>Average mean</b>       |

Table 4.23 show the high result in average (3.51). Based on the question, Tahfiz A, Tahfiz C, Tahfiz F and Tahfiz B achieve high level on emergency plan that can referred in their institution which are 4.28,4.22,3.86 and 3.84.It means the student and wardens are fully aware and know how to referred the emergency plan in case of emergency happen.

Meanwhile Tahfiz E and Tahfiz D in moderate level which mean the management provides an emergency plan at their institution but does not provide clear exposure to students and warden. But Tahfiz G are on low level this is because the management still did not has competent person to prepared the emergency plan, but after conducting the survey on this Tahfiz the management are now in progress to provide emergency plan on this institution.

The emergency plan need to provide by the Tahfiz management and it need to provide information on how to refer the emergency plan in case of accident happen, because of that Tahfiz institutions need to simulate the accident to facilitate students and wardens to familiarize themselves with the emergency plan in the accident, so they know how to escape into a secure assembly point.

As stated in the UNISDR (2010) school emergency and disaster preparedness plan are consists of policies and procedures on how to developed and promote the safety and

welfare of students, protect school property, or regulate the operation of schools in the event of an emergency or disaster. The plan assures the protection and safe care of students and staff before, during, and immediately after a threatened or actual emergency or disaster. Based on the statement, the Tahfiz management need to come up with the proper emergency plan which used as a guidelines for the community in the Tahfiz that they can refer with if there is an emergency.

#### 4.4.2.6 “EXIT” Signage

Table 4.24 “EXIT” Signage

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz D                   | 33                       | 4.67              | High                        | 1                         |
| Tahfiz B                   | 19                       | 4.37              | High                        | 2                         |
| Tahfiz C                   | 108                      | 4.08              | High                        | 3                         |
| Tahfiz A                   | 97                       | 3.15              | Moderate                    | 4                         |
| Tahfiz E                   | 144                      | 2.31              | Low                         | 5                         |
| Tahfiz F                   | 28                       | 1.75              | Low                         | 6                         |
| Tahfiz G                   | 24                       | 1.42              | Low                         | 7                         |
|                            | <b>453</b>               | <b>3.11</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

According to Maturo (2015) emergency exit signs and lights are among the most important parts in the building’s safety system. Because the emergency door can help people find their way outside of the building if the emergency occur.

Table 4.24 show the moderate result in average (3.11). Based on the question, Tahfiz D, Tahfiz B and Tahfiz C archieve high level by providing the Emergency door “EXIT” signage on their institution which are 4.67, 4.37 and 4.08 respectively. It means this Tahfiz management provide a lot of emergency door signage and the occupant also are fully aware and know about the signage that are provided.

Meanwhile Tahfiz A are in moderate level which mean this Tahfiz management are provide that signage but the occupant not know about the importance and location of the signage. Meanwhile student and warden from Tahfiz E are not really sure about the signage on the Tahfiz. For Tahfiz G and Tahfiz F are in low level it show that the management are did not provide the single of the signage on the Tahfiz. Every Tahfiz institutions need to provide and displays an Emergency Door "EXIT" signage at each

exit, because it are important to ensure that the occupant are know the “EXIT” access in case of emergency happen.

According to Mitchell (2018) fire safety signage is essential to assist people escape from an emergency incident, with re-assurance throughout the route with continued directional signs. Based on the statement by Mitchell signage is very important for the Tahfiz Institution in order to ensure the occupants are know the right pathways of the emergency exit if the emergency such as fire occured at Tahfiz Institutions.

#### 4.4.2.7 Assembly Point

Table 4.25 Assembly Point

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz A                   | 97                       | 4.73              | High                        | 1                         |
| Tahfiz B                   | 19                       | 4.58              | High                        | 2                         |
| Tahfiz C                   | 108                      | 4.42              | High                        | 3                         |
| Tahfiz F                   | 28                       | 4.18              | High                        | 4                         |
| Tahfiz E                   | 144                      | 3.6               | High                        | 5                         |
| Tahfiz D                   | 33                       | 3.52              | High                        | 6                         |
| Tahfiz G                   | 24                       | 3.17              | Moderate                    | 7                         |
|                            | <b>453</b>               | <b>4.03</b>       | <b>High</b>                 | <b>Average mean</b>       |

Table 4.25 show the high result in average (4.03). Based on the question Tahfiz A, Tahfiz B, Tahfiz C and Tahfiz F archieved high level on essembly point that can be use in case of emergency occur on the institutions which are 4.73, 4.58,4.42 and 4.18 . It means the students and wardens are very sure about the assembly point if the accident happened, this demonstrates one of the initiatives made by the management on a assembly point in a safe and easy access area, and based on the questionnaire given it shows the following Tahfiz often perform emergency drill, and from the drill it makes the students and wardens are very knowledgeable about the assembly point that has been provided.

Meanwhile only Tahfiz G are in moderate level, it showed that the student and wardens are aware about assembly point in case of emergency occur but there not providing the signage of the assembly point. The assembly point must be in a safe and easy to access area and to facilitate students and warden the area should have a signboard indicating that the place is assembly point.

According to Dublin Fire Brigade (2017) the assembly point must be far enough away from the school premises to afford protection from the heat and smoke in a fire situation and the assembly point must be in a position that does not put students and staff at risk from emergency vehicles responding to the incident. In order to ensure the Tahfiz community are aware about the assembly point, the Tahfiz management need to conduct the fire drill in the regularly to ensure they are familiar about the location and the procedure of evacuation to the assembly point.

#### 4.4.2.8 First Aid Kit

Table 4.26 First Aid Kit

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz G                   | 24                       | 4.63              | High                        | 1                         |
| Tahfiz D                   | 33                       | 4.3               | High                        | 2                         |
| Tahfiz B                   | 19                       | 4.16              | High                        | 3                         |
| Tahfiz A                   | 97                       | 4.12              | High                        | 4                         |
| Tahfiz E                   | 144                      | 4.05              | High                        | 5                         |
| Tahfiz F                   | 28                       | 3.46              | Moderate                    | 6                         |
| Tahfiz C                   | 108                      | 3.28              | Moderate                    | 7                         |
|                            | <b>453</b>               | <b>4</b>          | <b>High</b>                 | <b>Average mean</b>       |

According to Aldana (2013) first aid kit is the initial assistance that are given to a victim of injury or illness.

Table 4.26 show the high result in average mean (4.00). Based on the question Tahfiz G, Tahfiz D, Tahfiz B, Tahfiz A and Tahfiz E achieved high level on providing the emergency first aid kit in their institution which are 4.63, 4.30, 4.16, 4.12 and 4.05 respectively. It means this Tahfiz are provide complete set of the emergency first aid kit.

Meanwhile Tahfiz F and Tahfiz C in moderate level which mean this Tahfiz did not have a complete set of the emergency first aid kit. The emergency first aid kit need to provide at least two unit by Tahfiz management, because it will be the first emergency action that we can assist in giving early medication to the victim while waiting response from the other parties.

It stated in the UNISDR (2010) the first aid kit need to ready if the emergency occurs. Whether to buy or put one together, it must ensure all the items that may need such as medications, emergency phone numbers, and other items for health-care are provided. The kit also need to check regularly. Other than that, it also need to check expiration dates and replace any used or out-of-date contents.

Based on the statements, the Tahfiz management need to ensure the content inside the first aid kit are fully available with the suitable items and they need to regularly check that availability of the item as well as the expiration dates of the item inside the first aid kit. The person that are in-charge on the first aid kit need to undergo training and also need to have competency as a First Aider.

#### 4.4.2.9 First Aid Kit Training

Table 4.27 First Aid Kit Training

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz B                   | 19                       | 3.74              | High                        | 1                         |
| Tahfiz A                   | 97                       | 3.35              | Moderate                    | 2                         |
| Tahfiz D                   | 33                       | 2.85              | Moderate                    | 3                         |
| Tahfiz F                   | 28                       | 2.82              | Moderate                    | 4                         |
| Tahfiz G                   | 24                       | 2.79              | Moderate                    | 5                         |
| Tahfiz C                   | 108                      | 2.57              | Moderate                    | 6                         |
| Tahfiz E                   | 144                      | 2.53              | Moderate                    | 7                         |
|                            | <b>453</b>               | <b>2.95</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

According to Aldana (2013) the benefit of the first aid kit training it can make someone to help a person in case of emergency occur.

Table 4.27 show the moderate result in average (2.95). Based on the question Tahfiz B achieved high level by providing training on how to use the equipment in the first aid kit to the students and wardens in their institutions which are the mean score are 3.74 respectively. It means this Tahfiz management provide competency training to the student and warden on how to use the equipment in the first aid kit,by attend this training the student and wardens are fully knowledge on how to treat a victim if minor accident occur.

Meanwhile, the other six Tahfiz in moderate level, it means they also been providing the training on how to use the equipment in the first aid kit but they are still at low level on mastering and application of the using equipment on the first aid kit.

#### 4.4.2.10 Fire Alarm System

Table 4.28 Fire Alarm System

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz A                   | 97                       | 4.8               | High                        | 1                         |
| Tahfiz G                   | 24                       | 4.46              | High                        | 2                         |
| Tahfiz D                   | 33                       | 4.36              | High                        | 3                         |
| Tahfiz C                   | 108                      | 4.24              | High                        | 4                         |
| Tahfiz B                   | 19                       | 4.11              | High                        | 5                         |
| Tahfiz E                   | 144                      | 2.85              | Moderate                    | 6                         |
| Tahfiz F                   | 28                       | 1.89              | Low                         | 7                         |
|                            | <b>453</b>               | <b>3.82</b>       | <b>High</b>                 | <b>Average mean</b>       |

According to Baker (2014) fire alarm system is a system or portion of a combination of the system that consists of components and circuits arranged to monitor and annunciate the status of the fire alarm or supervisory signal-initiating devices and to initiate the appropriate response to those signals.

Table 4.28 show the high result in average (3.82). Based on the question Tahfiz A, Tahfiz G, Tahfiz D, Tahfiz C and Tahfiz B. achieved high level on providing fire alarm system in their institution which are the mean score are 4.8,4.46,4.36,4.24 and 4.11. It mean the Tahfiz management are follow the Guidelines that are given from Jabatan Bomba dan Penyelamat Malaysia in providing fire alarm systems in every building in their Tahfiz, this will make it easier for students and wardens to alert if any ignition of fire occur in their Tahfiz area.

Meanwhile Tahfiz E reach to moderate level it mean this Tahfiz also provide fire alarm system in their Tahfiz but its not fully available in every building within the Tahfiz area. Only Tahfiz F at the low level on providing fire alarm system in their Tahfiz, based on the result on the questioner its show that Tahfiz F did not have any fire alarm system in their institution.

According to FEMA (2011) alarm systems are bells or buzzers are in place and sound in different ways to signal different types of incidents such as , fire, lockdown, or special alert. All staff/faculty, support staff, students, and volunteers will be trained on what the sounds mean and how to respond to them.

Based on the statements by FEMA the fire alarm systems are provide the notification if the emergency are occur such as siren, buzzer or bells. The Tahfiz management need to provide this kind of alarm and need to conduct briefing to the Tahfiz community on how to respons if the alarm are triggered. Besides, Fire alarm system need to be maintained to ensure the fire alarm system are in good condition.

#### 4.4.2.11 Fire Alarm Condition

Table 4.29 Fire Alarm Condition

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz G                   | 24                       | 4.58              | High                        | 1                         |
| Tahfiz A                   | 97                       | 4.3               | High                        | 2                         |
| Tahfiz B                   | 19                       | 4.05              | High                        | 3                         |
| Tahfiz C                   | 108                      | 3.96              | High                        | 4                         |
| Tahfiz D                   | 33                       | 3.67              | High                        | 5                         |
| Tahfiz E                   | 144                      | 3.08              | Moderate                    | 6                         |
| Tahfiz F                   | 28                       | 1.79              | Low                         | 7                         |
|                            | <b>453</b>               | <b>3.62</b>       | <b>High</b>                 | <b>Average mean</b>       |

Fire detection, alarm, and extinguishing systems, mechanical smoke exhaust systems, and smoke and heat vents shall be maintained in an operative condition at all times, and shall be replaced or repaired where defective. Non-required fire protection systems and equipment shall be inspected, tested and maintained or removed (International Code Council, 2016).

Table 4.29 show the high result in average (3.62). Based on the question, Tahfiz G, Tahfiz A, Tahfiz B, Tahfiz C and Tahfiz D archieve high level on keep the fire alarm in good condition in their institutions, based on Table 4.30 it show this five Tahfiz are provide fire alarm system in their instituion and based on the result on this question, it



mean the Tahfiz management regularly do inspection and maintenance to ensure that the fire alarm is functioning properly.

Meanwhile, Tahfiz E are in moderate level on keep the fire alarm in good condition, it means this Tahfiz only provide the fire alarm system but still at low level on inspection and maintenance the fire alarm system in a proper condition. Only, Tahfiz F are on low level on this question it because this Tahfiz are did not have any of fire alarm system.

#### 4.4.2.12 Fire Prevention System

Table 4.30 Fire Prevention System

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz A                   | 97                       | 3.91              | High                        | 1                         |
| Tahfiz C                   | 108                      | 3.79              | High                        | 2                         |
| Tahfiz B                   | 19                       | 3.68              | High                        | 3                         |
| Tahfiz D                   | 33                       | 3.42              | Moderate                    | 4                         |
| Tahfiz E                   | 144                      | 3.24              | Moderate                    | 5                         |
| Tahfiz F                   | 28                       | 2.18              | Low                         | 6                         |
| Tahfiz G                   | 24                       | 1.75              | Low                         | 7                         |
|                            | <b>453</b>               | <b>3.14</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

According to Machado (2018) fire prevention is a process whereby a fire or occurrence of a fire is prevented. This includes systems for detection of fire, fighting the fire and also the processes to ensure that a fire does not occur.

Table 4.30 show the moderate result in average (3.14). Based on the question Tahfiz A, Tahfiz C and Tahfiz B achieve high level on providing fire prevention system in their institutions which are the mean score for this Tahfiz are 3.91, 3.79 and 3.68 respectively. It means this Tahfiz are provide several fire prevention system such as smoke detector and water sprinkler, and this Tahfiz management also provide the information on how this equipment are functioning properly.

Meanwhile, Tahfiz D and Tahfiz E are reach moderate level on providing the fire prevention system, it mean this Tahfiz are provide this equipment on their

institutions, but low level on application of the functioning of the equipment, due to do not provide any information on how that equipment are function properly.

But for Tahfiz G and Tahfiz F their score low level on providing the fire prevention system in their institutions, it means the Tahfiz are did not have any equipment that related on fire prevention system in their Tahfiz, it happen because this Tahfiz are has just been in operation and is still in the improvement of the required equipment.

According to Pandit (2017) fire protection system are group of systems or approved devices that are used to detect a fire, activate alarm, extinguish fire, control or manage smoke or to control the harmful effects of destructive fire which mean that fire prevention system are contributing to prevent the occupant in Tahfiz from severe injuries.

#### 4.4.2.13 Fire Extinguisher

Table 4.31 Fire Extinguisher

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz A                   | 97                       | 4.88              | High                        | 1                         |
| Tahfiz D                   | 33                       | 4.82              | High                        | 2                         |
| Tahfiz C                   | 108                      | 4.82              | High                        | 3                         |
| Tahfiz B                   | 19                       | 4.68              | High                        | 4                         |
| Tahfiz E                   | 144                      | 4.6               | High                        | 5                         |
| Tahfiz G                   | 24                       | 4.38              | High                        | 6                         |
| Tahfiz F                   | 28                       | 4.07              | High                        | 7                         |
|                            | <b>453</b>               | <b>4.61</b>       | <b>High</b>                 | <b>Average mean</b>       |

According to Machado (2018) fire extinguisher system is a systems to extinguish a fire like portable fire extinguishers, Hydrant systems, Sprinkler system.

Table 4.31 show the high result in average (4.61). Based on the question all Tahfiz achieve high level on providing the fire extinguisher on their institutions, which are the mean score for this thafiz are 4.88,4.82,4.82,4.68,4.60,4.38 and 4.07 respectively, It mean all Tahfiz management are fully aware to provide the fire extinguisher on their Tahfiz institutions.

According to McSheffry (2011) fire extinguishers play a crucial role in protecting the environment due to their proven ability to fight fires while they are at their very early

stages. The availability of accessible and working fire extinguishers assures that the highest possible percentage of fires will be controlled with the minimal environmental impact possible. Based on the statements given, the fire extinguisher is played very important role as first lines of defence to protect the Tahfiz Institution because if fire incident happen they able to fight and response against the hazard.

#### 4.4.2.14 Fire Drill with BOMBA

Table 4.32 Fire Drill with BOMBA

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz B                   | 19                       | 4.37              | High                        | 1                         |
| Tahfiz A                   | 97                       | 4.2               | High                        | 2                         |
| Tahfiz C                   | 108                      | 4.11              | High                        | 3                         |
| Tahfiz E                   | 144                      | 3.98              | High                        | 4                         |
| Tahfiz F                   | 28                       | 3.64              | High                        | 5                         |
| Tahfiz D                   | 33                       | 1.97              | Low                         | 6                         |
| Tahfiz G                   | 24                       | 1.17              | Low                         | 7                         |
|                            | <b>453</b>               | <b>3.35</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

Table 4.32 show the moderate result in average (3.35). Based on the question Tahfiz B, Tahfiz A, Tahfiz C, Tahfiz E and Tahfiz F archieved high level that have been conducted a fire drill with the BOMBA, which are the mean score are 4.37,4.2,4.11,3.98 and 3.64 respectively. It means student and wardens are have been exposed to how to safe themselves in the accident of a fire such as on how to gather at the assembly point during emergency and how to control the situation from panic conditions. Otherwise they can also learn how to properly use the fire extinguisher as well as get a clearer picture of how to simulate on how to safe and control the situation in the accident of fire in their Tahfiz area.

Tahfiz D and Tahfiz G score low level in term of get fire drill training with BOMBA, by the result on questionnaire and also feedback from the Tahfiz management this two Tahfiz still did not having fire drill from BOMBA and they are still in the process of getting fire drill with the BOMBA in the short duration of time.

According to UNISDR (2010) emergency drills and exercises should be conducted regularly in schools to develop the capacity of students to respond to a disaster, as well as to raise the awareness of students and staff on disaster mitigation. Drills offer the opportunity to identify training needs, establish new reflexes, and teach through action and repetition. Through this drill and exercises the Tahfiz management evaluate the effectiveness of the procedure that conducted among the students and staff.

#### 4.4.2.15 Safety Committee

Table 4.33 Safety Committee

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz E                   | 144                      | 3.9               | High                        | 1                         |
| Tahfiz C                   | 108                      | 3.44              | Moderate                    | 2                         |
| Tahfiz A                   | 97                       | 3.33              | Moderate                    | 3                         |
| Tahfiz B                   | 19                       | 3.21              | Moderate                    | 4                         |
| Tahfiz F                   | 28                       | 3.07              | Moderate                    | 5                         |
| Tahfiz G                   | 24                       | 2.92              | Moderate                    | 6                         |
| Tahfiz D                   | 33                       | 2.82              | Moderate                    | 7                         |
|                            | <b>453</b>               | <b>3.24</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

Table 4.33 show the moderate result in average (3.24). Based on the question Tahfiz A are scored high level on providing the safety committee on their Tahfiz , which are the mean score 3.9 respectively. It means are has established a safety committee among the staff and giving the exposure about their role to students and wardens about anything that related to safety in this Tahfiz area.

Meanwhile, the other six Tahfiz are in moderate level, it means the Tahfiz management have been establish the safety committee on their Tahfiz but still low to mastering the role and provide the proper information about their responsibility to student and wardens.

It is stated in UNISDR (2010) the safety committee need to plan, organize and conduct emergency preparedness training and drills for all students and staff, including persons with disabilities. The safety committee in the Tahfiz Institution need to undergo training and safety courses to ensure they are fully aware about the role and job scope and

the training need to conducted by the competent person who have background in the field of safety and health.Safety Committee Training

Table 4.34 Safety Committee Training

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz B                   | 19                       | 3.63              | High                        | 1                         |
| Tahfiz A                   | 97                       | 3.08              | Moderate                    | 2                         |
| Tahfiz C                   | 108                      | 2.84              | Moderate                    | 3                         |
| Tahfiz E                   | 144                      | 2.76              | Moderate                    | 4                         |
| Tahfiz F                   | 28                       | 2.71              | Moderate                    | 5                         |
| Tahfiz G                   | 24                       | 2.38              | Low                         | 6                         |
| Tahfiz D                   | 33                       | 2.27              | Low                         | 7                         |
|                            | <b>453</b>               | <b>2.81</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

Table 4.34 show the moderate result in average (2.81). Based on the question Tahfiz B archieve high level in term providing the training for safety committee from the authorities, which are the mean score are 3.63 respectively. It means the person that are selected as safety committee has been getting training from the authorities, by this result it will show that the person can provide cleared information and carrying out duty with easily.

Meanwhile, Tahfiz A, Tahfiz E, Tahfiz F and Tahfiz C are reach moderate level in this issue, it means their safety committee also being provided training from the authorities but still in low on apply their knowledge in their Tahfiz .

Tahfiz D and Tahfiz G are on low level due to the lack of training from the authorities for the safety committee that are established.

#### 4.4.2.16 Safety and Health Information

Table 4.35 Safety and Health Information

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz A                   | 97                       | 3.72              | High                        | 1                         |
| Tahfiz B                   | 19                       | 3.32              | Moderate                    | 2                         |
| Tahfiz E                   | 144                      | 3.11              | Moderate                    | 3                         |
| Tahfiz F                   | 28                       | 3.11              | Moderate                    | 4                         |
| Tahfiz C                   | 108                      | 2.91              | Moderate                    | 5                         |
| Tahfiz D                   | 33                       | 2.48              | Low                         | 6                         |
| Tahfiz G                   | 24                       | 2.17              | Low                         | 7                         |
|                            | <b>453</b>               | <b>2.97</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

Table 4.35 show the moderate result in average (2.97). Based on the question Tahfiz A achieved high level on providing safety and health information to teacher and students which are the mean score are 3.72 respectively. It means the Tahfiz management are very often to provide information that related on safety and health on the institution, it can be a references for the students and teacher to gain the knowledge about on how to use fire extinguisher, the type of hazard and other thing about safety and health.

Meanwhile Tahfiz E, Tahfiz B, Tahfiz F and Tahfiz C achieve moderate level it means the information that are provided to teacher and students did not applied during their time in Tahfiz area.

Tahfiz D and Tahfiz G score low level because of they did not provide any information such flyer of any posters that related to safety and health in their Tahfiz institutions.

As provided by NIOSH in “Buku Panduan Keselamatan dan Kesehatan Pekerjaan Untuk Sekolah Tahfiz” , this guidelines is considered as main references for Tahfiz Institutions. There are several information provided in this guidelines which used by the Tahfiz Institutions to deliver the information related to with safety and health issue towards the student and staff.

#### 4.4.2.17 Visit by a Safety and Health Officer

Table 4.36 Visit by a Safety and Health Officer

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz A                   | 97                       | 3.71              | High                        | 1                         |
| Tahfiz B                   | 19                       | 3.37              | Moderate                    | 2                         |
| Tahfiz G                   | 24                       | 3.04              | Moderate                    | 3                         |
| Tahfiz C                   | 108                      | 3.01              | Moderate                    | 4                         |
| Tahfiz D                   | 33                       | 2.73              | Moderate                    | 5                         |
| Tahfiz E                   | 144                      | 2.57              | Moderate                    | 6                         |
| Tahfiz F                   | 28                       | 2.25              | Low                         | 7                         |
|                            | <b>453</b>               | <b>2.95</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

Table 4.36 show the moderate result in average (2.95). Based on the question Tahfiz A archived high level on been visited by safety and health officer, which are the mean score are 3.71 respectively. It means this Tahfiz are very often have been visited from the safety and health officer (SHO), the student and wardens can gain the knowledge by the sharing moment and activities that are provide by SHO during the visit to their Tahfiz .

Meanwhile, Tahfiz D,Tahfiz E,Tahfiz B,Tahfiz G and Tahfiz C archieve moderate level in term of visit from the SHO, it means this several Tahfiz has been often visited from the SHO but still in low in mastering the information that given from the SHO.

Tahfiz F has low level in term of visit by SHO it because it rarely that they get any visit from the SHO on their Tahfiz .

#### 4.4.2.18 Safety and Health Promotion

Table 4.37 Safety and Health Promotion

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz D                   | 33                       | 3.15              | Moderate                    | 1                         |
| Tahfiz A                   | 97                       | 3.07              | Moderate                    | 2                         |
| Tahfiz B                   | 19                       | 3                 | Moderate                    | 3                         |
| Tahfiz E                   | 144                      | 2.56              | Moderate                    | 4                         |
| Tahfiz C                   | 108                      | 2.56              | Moderate                    | 5                         |
| Tahfiz F                   | 28                       | 2.18              | Low                         | 6                         |
| Tahfiz G                   | 24                       | 1.33              | Low                         | 7                         |
|                            | <b>453</b>               | <b>2.55</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

Table 4.37 show the moderate result in average (2.55). Based on the question Tahfiz D, Tahfiz A, Tahfiz B, Tahfiz E and Tahfiz C archieve moderate level on getting safety and health promotion by SHO, which are the mean score are 3.15,3.07,3.00,2.56 and 2.56 respectively. It means this following Tahfiz are very often get the promotion about safety by SHO but they did not apply on their days in Tahfiz .

Meanwhile Tahfiz G and Tahfiz F are rarely to get safety promotion from the SHO due to this two are new and their will cover this Tahfiz in the next observation.

This action actually contribute in enhancing safety and health promotion in Tahfiz Institutions due to safety health officer initiative to prevent reoccurrence of incident happened at Tahfiz Institutions. Due to occurrence of fire incident happen at Tahfiz Darul Quran Ittifaqiyah, NIOSH has come out with safety and health campaign as well as promotion and simulation to escalate safety with the help from SHO (BERNAMA,2017).



#### 4.4.2.19 "OSH in Tahfiz" Program

Table 4.38 "OSH in Tahfiz" Program

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz B                   | 19                       | 3.05              | Moderate                    | 1                         |
| Tahfiz C                   | 108                      | 2.8               | Moderate                    | 2                         |
| Tahfiz A                   | 97                       | 2.12              | Low                         | 3                         |
| Tahfiz E                   | 144                      | 1.85              | Low                         | 4                         |
| Tahfiz D                   | 33                       | 1.79              | Low                         | 5                         |
| Tahfiz F                   | 28                       | 1.5               | Low                         | 6                         |
| Tahfiz G                   | 24                       | 1.08              | Low                         | 7                         |
|                            | <b>453</b>               | <b>2.03</b>       | <b>Low</b>                  | <b>Average mean</b>       |

Table 4.38 shows the low result in average (2.03). Based on the question Tahfiz B and Tahfiz C achieve moderate level in term of involving in OSH in Tahfiz program, which are the mean score are 3.05 and 2.80. It means this Tahfiz have been given are OSH in Tahfiz program by the safety practitioner which is the student and warden have been involved in this program and the objective for this program are to identify the threat or hazard that are can happen in their Tahfiz and provide the prevention method, so that the can applied to their Tahfiz .

Meanwhile for other five Tahfiz their in low level of the involving on OSH in Tahfiz program due to still in the planning to cover all Tahfiz in this area.

The implementation of OSH at Tahfiz schools will be more comprehensive as it considers the institution as a place of work and is subjected to the Occupational Safety and Health Act 1994 (OSHA 1994) (BERNAMA,2017).

#### 4.4.2.20 Safety Procedures

Table 4.39 Safety Procedures

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz A                   | 97                       | 3.73              | High                        | 1                         |
| Tahfiz G                   | 24                       | 3.63              | High                        | 2                         |
| Tahfiz C                   | 108                      | 3.44              | Moderate                    | 3                         |
| Tahfiz B                   | 19                       | 3.32              | Moderate                    | 4                         |
| Tahfiz F                   | 28                       | 3.18              | Moderate                    | 5                         |
| Tahfiz E                   | 144                      | 2.87              | Moderate                    | 6                         |
| Tahfiz D                   | 33                       | 2.79              | Moderate                    | 7                         |
|                            | <b>453</b>               | <b>3.28</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

Table 4.39 show the moderate result in average (3.28). Based on the question Tahfiz A and Tahfiz G are achieved high level in term of follow the safety procedure by the authorities which are the mean score are 3.73 and 3.63 respectively, it mean the student and are warden that are fully aware on this issue and that given exposure on the requirement of the safety procedure.

Meanwhile the other five Tahfiz only score moderate level which mean their Tahfiz are follow the safety procedure but still did not full archieved all the requirement which has been set by authorities.

According to Vitez (2018) safety procedure is important to ensure the occupant are not injured themselves during business operations. This statements can be applied in Tahfiz Institutions situation which the management of that particular institutions will follow safety procedure to ensure the student and staff safety.

#### 4.4.2.21 Internal Audit at Least Once (1) a Month

Table 4.40 Internal Audit at Least Once (1) a Month

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz A                   | 97                       | 3.29              | Moderate                    | 1                         |
| Tahfiz F                   | 28                       | 3.25              | Moderate                    | 2                         |
| Tahfiz B                   | 19                       | 2.84              | Moderate                    | 3                         |
| Tahfiz G                   | 24                       | 2.83              | Moderate                    | 4                         |
| Tahfiz E                   | 144                      | 2.63              | Moderate                    | 5                         |
| Tahfiz D                   | 33                       | 2.39              | Low                         | 6                         |
| Tahfiz C                   | 108                      | 2.37              | Low                         | 7                         |
|                            | <b>453</b>               | <b>2.8</b>        | <b>Moderate</b>             | <b>Average mean</b>       |

Table 4.40 show the moderate result in average (2.80). Based on the question Tahfiz A, Tahfiz F, Tahfiz B, Tahfiz G and Tahfiz E archived moderate level in term of internal audit on their Tahfiz , the mean score which are 3.29, 3.25,2.84,2.83 and 2.63 respectively. It mean it very often that the management are do the inspection on the Tahfiz and proper maintenance.

Meanwhile, Tahfiz D and Tahfiz C reach are low level on the internal audit by the Tahfiz management, it mean the management are rarely do the inspection on the Tahfiz area.

Internal audit provide independence assurance as to the effectiveness of this financial management arrangement within the schools auditor (Institute of Internal Auditor,2018). Generally, Tahfiz Institutions will conduct internal audit at least once per month to evaluate the condition of equipment available in Tahfiz Institutions. If there any damaged or defect equipment found during this evaluation, further action will be done by the management.

#### 4.4.2.22 Knowledge towards Emergency Preparedness

Table 4.41 Knowledge towards Emergency Preparedness

| <b>Name Of Institution</b> | <b>Respondent Number</b> | <b>Mean Score</b> | <b>Interpretation Level</b> | <b>Mean score ranking</b> |
|----------------------------|--------------------------|-------------------|-----------------------------|---------------------------|
| Tahfiz A                   | 97                       | 3.71              | High                        | 1                         |
| Tahfiz B                   | 19                       | 3.67              | High                        | 2                         |
| Tahfiz C                   | 108                      | 3.45              | Moderate                    | 3                         |
| Tahfiz D                   | 33                       | 3.08              | Moderate                    | 4                         |
| Tahfiz E                   | 144                      | 3.08              | Moderate                    | 5                         |
| Tahfiz F                   | 28                       | 2.87              | Moderate                    | 6                         |
| Tahfiz G                   | 24                       | 2.81              | Moderate                    | 7                         |
|                            | <b>453</b>               | <b>3.24</b>       | <b>Moderate</b>             | <b>Average mean</b>       |

Based on the result shown on the Table 4.41 the average mean for the seven Tahfiz is (3.24) and it in moderate tendencies. With 97 respondent Tahfiz A archived high level on the knowledge toward emergency preparedness, it same goes to Tahfiz B with 19 number of respondent this Tahfiz also in high level. Meanwhile, Tahfiz C, Tahfiz D, Tahfiz E, Tahfiz F and Tahfiz G score moderate level in knowledge toward emergency management. Based the result show this seven Tahfiz are aware about the emergency preparedness that they need to know.

#### 4.5 Limitation of Study

There were some of limitations that need to face during the completion of this study. The limitations of questionnaire were some of the questions are did not answered by the students and wardens properly because some of them need a guide to answer the questions due to did not familiar with the characteristics of the questionnaire.

## **CHAPTER 5**

### **CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter is the final chapter of this thesis. This part are summarize from each objective briefly and its finding and ultimately give the conclusion of whole thesis. Meanwhile, the recommendation part is the part where there could give better improvement suggested for the benefit for Tahfiz Institution in term of emergency management.

#### **5.2 Conclusion**

Based on the first objective of the research which is to determine the vulnerability level of Tahfiz institutions, the findings showed it the threat that had been identify are landslide, flash flood, structural fire and open fire. However, the Tahfiz management are not sure with potential hazard that can being happen in their institution. The second objective are the availability of the emergency management in Tahfiz institution are quiet positive situations, it showed the Tahfiz management are provide the safety equipment and facilities and the level of availability are in good condition. However, that have several Tahfiz that still need improvement on providing the equipment and comply with the requirement that are needed. The third objective are to measure the level of knowledge of emergency preparedness among students and warden. The mean score showed the student and warden knowledge about the emergency preparedness at the level of high and moderate, it show the student and wardens are fully aware about their safety during their day in institution, by the initiatives from the Tahfiz management that provide safety training and information it can improve their knowledge that related to safety issues.

### **5.3 Recommendations**

It is important to prepare for emergencies in order to withstand community if they occur. Therefore emergency management is an essential phase for prevention of emergencies. This includes the enhancement of an overall preparedness strategy, vulnerability assessment, institutional structure, warning and forecasting capabilities, and plans safeguard their lives and assets by being alert to hazards and taking appropriate action in the face of imminent threat. The following are the recommendation;

#### **5.3.1 Improvement for Current OSH in Tahfiz Program**

OSH in Tahfiz is one of the initiative that enhanced by National Institute of Occupational Safety and Health( NIOSH), this program are one of one of the ways to promote safety in the Tahfiz area in a way that is more easily understand by students. This is because the program can provide exposure to the students and teachers about anything related to safety. One of the activities in this module is hazard hunt in the Tahfiz area, in this way it is able to ensure that students and teachers can identify the types of hazards that may be found in the Tahfiz area, besides that we also can ensure that the findings of the hazard findings should be enhanced thereby with the cooperation of OSH practitioners this is a bit as capable of providing improvement measures to ensure that the hazards can be mitigated or eliminated permanently or periodically. At the same time, this module can also provide students with information on their level of safety throughout the Tahfiz , with several training sessions from competent people able to add knowledge to students and teachers about the safety they should know in this Tahfiz . The current OSH in Tahfiz Program only cover in are several Tahfiz in Malaysia, this Program need to implement to all Tahfiz and it need a lot of number of the volunteer to accomplish the program in order to provide the safety and health information and training for all Tahfiz in Malaysia. It order to achieved this mission it need are strategic plan such as need to conducted the conference with representative of the safety practitioner from all states in Malaysia, the objective of the meeting are to identy the number of Tahfiz are from all states, and based on the number the strategic planning can be applied in order to conducting the program as scheduled and more effectives. The result of the program can

must be documented and make a copy to the JBPM as a references for them. Thus, facilitating the students to more easily understand the information presented by performing some games that involve their level of knowledge about this hazard, which will make them more understandable and able to use the existing information in completing the task.

### **5.3.2 Involvement of Safety Practitioner, NGO and Authorities**

With the cooperation of the authorities and OSH practitioners it can be helpful in terms of providing the necessary steps to achieve the standards, besides that it can also provide advice to ensure that the Tahfiz institutions is well managed and safe. With the involvement of this team it can reduces unwanted events as we know the occurrence of landslides often occur in highland areas such as in the widest area, so Tahfiz management should avoid any activities that may result in erosion of the soil that can causing landslides to occur. The safety practitioner and the authorities can provide training such as first aid training, this training need to provide for student and warden in Tahfiz institution and their need to provide simulation on how to control the situation if emergency are occur. Involvement by NGO in providing financial donation and funds for the Tahfiz Institutions which the money collected by them can be used to p

### **5.3.3 Implementation of Occupational Safety and Health Management System**

Based on the research, it is clear that the need to have OSH management system at Tahfiz School. While studies show that the level of understanding of OSH is moderate, however improvements need to be made to ensure that the fire tragedy that took place in September 2017 did not recur. To assist the Tahfiz School it is recommended to use a simple system to improve OSH management practices that can be implemented systematically. The system that can implement in this study are implementation of the Systematically OSH Management Enhancement Program (SOMEPE) that are provide by PESHA, it because by enhancing SOMEPE to the Tahfiz Instituton, based on the result of the checklist we can categories the level of Tahfiz that related and complied with the requirement. The level of each SOMEPE have a different requirement and based on the result show of the each Tahfiz we can know the equipment or the other compliance that

need to comply with the requirement. The level of SOMEPE can be improve from time to time. Therefore, it is not burdensome for the Tahfiz to provide the equipment and training they must follow to ensure their Tahfiz complied with the prescribed safety requirements.



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## APPENDIX A

### SAMPLE OF CHECKLIST

#### Lampiran 3

**SENARAI SEMAK KKP KENDIRI  
(SELF ASSESSMENT CHECKLIST)  
KESELAMATAN, KESIHATAN DAN PERSEKITARAN PEKERJAAN  
PREMIS**

#### **A. MAKLUMAT ASAS**

1. Nama premis: .....
2. Alamat premis: .....
3. Negeri:..... Kawasan (Parlimen):.....
4. Jenis struktur bangunan: Konkrit/Kayu/Campuran
5. Jenis bangunan: Rumah kedai/ Rumah berkembar/ Rumah Teres/ Rumah Pangsaf/ Banglo/ Rumah kampung/ lain-lain (nyatakan).....
6. Kemudahan bangunan: Asrama/ Dapur/ Stor/ Makmal
7. Pelan kelulusan bangunan: Ada/ Tiada
8. Bangunan telah diubah suai: Ada/ Tiada

Source: NIOSH (2017)

| BIL.      | PERKARA   | ADA | TIADA | ULASAN |
|-----------|---|-----|-------|--------|
| <b>1.</b> | <b>DASAR KESELAMATAN DAN KESIHATAN</b>  |     |       |        |
| a.        | Mempunyai dasar (wajib bagi yang mempunyai pekerja lebih daripada 5 orang).   |     |       |        |
| b.        | Dasar dipamerkan.   |     |       |        |
| c.        | Dasar dimaklumkan kepada kakitangan.  |     |       |        |
| <b>2.</b> | <b>JAWATANKUASA KESELAMATAN DAN KESIHATAN</b>   |     |       |        |
| a.        | Membentuk jawatankuasa keselamatan dan kesihatan yang terdiri daripada pengurusan dan pekerja (wajib bagi yang mempunyai 40 orang pekerja). |     |       |        |
| b.        | Mengadakan mesyuarat secara berkala (sekurang-kurangnya 3 bulan sekali).  |     |       |        |
| <b>3.</b> | <b>KEMUDAHAN KESELAMATAN DIRI</b>   |     |       |        |
| a.        | Papan Tanda Keluar Pintu Kecemasan ( <i>Emergency Exit</i> ) di setiap pintu keluar.  |     |       |        |
| b.        | Lampu Kecemasan ( <i>emergency light</i> ).   |     |       |        |
| c.        | Tatacara (Garis panduan) Semasa Kebakaran.  |     |       |        |
| d.        | Notis/Poster Keselamatan Kebakaran.   |     |       |        |
| e.        | Mempunyai Pintu Keluar dari bangunan (sekurang-kurangnya dua pintu).  |     |       |        |
| f.        | Mempunyai tangga kecemasan bagi bangunan bertingkat.  |     |       |        |
| g.        | Pintu dan tingkap dipasang jenis jeriji besi yang mudah untuk keluar semasa kecemasan.  |     |       |        |

Source: NIOSH (2017)



| BIL.   | PERKARA   | ADA | TIADA | ULASAN |
|--|---|-----|-------|--------|
| <b>4. KEMUDAHAN PENCEGAHAN/PERLINDUNGAN/ MENENTANG KEBAKARAN</b> |   |     |       |        |
| a.   | Terdapat pili bomba (dalam lingkungan 90 Meter) berhampiran di kawasan bangunan/premis.                 |     |       |        |
| b.   | Terdapat sistem pengesan haba atau asap.  |     |       |        |
| c.   | Terdapat sistem penggera automatik/pecah kaca (alarm kecemasan).  |     |       |        |
| d.   | Terdapat alat pemadam api mudah alih ( <i>fire extinguisher</i> ) di setiap aras bangunan.              |     |       |        |
| e.   | Alat pemadam api mudah alih diletak berhampiran dengan pintu keluar.                                    |     |       |        |
| f.   | Papan tanda tempat berkumpul ( <i>assembly point</i> ) disediakan.                                      |     |       |        |
| g.   | Nombor telefon perhubungan kecemasan disediakan.  |     |       |        |
| h.   | Latihan kebakaran dan pengungsian ( <i>evacuation</i> ) dijalankan (sekurang-kurang setahun sekali).    |     |       |        |
| i.   | Terdapat peti pertolongan cemas dan kandungan peti pertolongan cemas yang belum luput tarikh dan cukup. |     |       |        |
| k.   | Terdapat <i>first aider</i> terlatih.   |     |       |        |
| l.   | Latihan asas pertolongan cemas kepada kakitangan/guru/asatizah.   |     |       |        |

Source: NIOSH (2017)

| BIL.      | PERKARA  | ADA | TIADA | ULASAN |
|-----------|--|-----|-------|--------|
| <b>5.</b> | <b>KESELAMATAN ELEKTRIK/BANGUNAN/PENSTORAN</b>   |     |       |        |
| a.        | Diselenggarakan oleh orang kompeten.   |     |       |        |
| b.        | Penyelenggaraan berjadual ( <i>circuit breaker, gen set</i> ) dalam kuasa ( <i>plug</i> ). |     |       |        |
| c.        | Peralatan elektrik disambung dan berada dalam keadaan selamat.                             |     |       |        |
| d.        | Pencahayaan mencukupi (tidak suram).   |     |       |        |
| e.        | Lantai/Jalan (tidak licin, pecah, curam).  |     |       |        |
| f.        | Bumbung/Siling (tidak kerosok/melentur/reput).   |     |       |        |
| g.        | Susun atur barangan dalam keadaan kemas dan berlabel.                                      |     |       |        |
| h.        | Laluan tidak dihalang.   |     |       |        |
| i.        | Cara menyusun selamat.   |     |       |        |
| <b>6.</b> | <b>KEBAJIKAN</b>   |     |       |        |
| a.        | Kemudahan tandas (pengasingan lelaki dan perempuan).                                       |     |       |        |
| b.        | Ruang makan.   |     |       |        |
| c.        | Surau.   |     |       |        |
| d.        | Kemudahan sukan dan sosial.  |     |       |        |
| e.        | Tempat mandi/tempat sidai pakaian  |     |       |        |

Source: NIOSH (2017)

| BIL.                                  | PERKARA  | ADA             | TIADA | ULASAN |
|---------------------------------------|--|-----------------|-------|--------|
| <b>7. KEADAAN KEMUDAHAN DI PREMIS</b> |  |                 |       |        |
| <b>a. Pejabat</b>                     |  |                 |       |        |
|                                       | i. bersih & selesa.                                      |                 |       |        |
|                                       | ii. keadaan meja dan kerusi (sekiranya ada).             |                 |       |        |
|                                       | iii. pendawaian elektrik yang baik dan kemas.            |                 |       |        |
|                                       | iv. pencahayaan / kecerahan lampu.                       |                 |       |        |
|                                       | v. alat pemadam api disediakan.                          |                 |       |        |
|                                       | vi. peti pertolongan cemas.                              |                 |       |        |
|                                       | v. tiada halangan di laluan kecemasan.                   |                 |       |        |
| <b>b. Kelas</b>                       |  |                 |       |        |
|                                       | i. bersih & selesa.                                      |                 |       |        |
|                                       | ii. keadaan meja & kerusi (sekiranya ada).               |                 |       |        |
|                                       | iii. pendawaian elektrik yang baik dan kemas.            |                 |       |        |
|                                       | iv. pencahayaan/kecerahan lampu.                         |                 |       |        |
|                                       | v. alat pemadam api disediakan.                          |                 |       |        |
|                                       | vi. tiada halangan di laluan kecemasan.                  |                 |       |        |
| <b>c. Asrama</b>                      |  |                 |       |        |
|                                       | i. bersih & selesa.                                      |                 |       |        |
|                                       | ii. keadaan katil dalam keadaan baik dan tersusun.       |                 |       |        |
|                                       | iii. kepadatan ruang bilik.                              |                 |       |        |
|                                       | iv. pendawaian elektrik yang baik dan kemas.             |                 |       |        |
|                                       | v. pencahayaan/kecerahan lampu.                          |                 |       |        |
|                                       | vi. alat pemadam api disediakan.                         |                 |       |        |
|                                       | vii. peti pertolongan cemas.                             |                 |       |        |
|                                       | viii. tiada halangan di laluan kecemasan.                |                 |       |        |
| <b>d. Kantin / Tempat makan</b>       |  |                 |       |        |
|                                       | i. bersih & selesa.                                      |                 |       |        |
|                                       | ii. keadaan meja & kerusi dalam keadaan baik & tersusun. |                 |       |        |
|                                       | iii. pendawaian elektrik yang baik dan kemas.            |                 |       |        |
|                                       | iv. pencahayaan/kecerahan lampu.                         |                 |       |        |
|                                       | v. alat pemadam api disediakan.                          |                 |       |        |
|                                       | vi. tiada halangan di laluan kecemasan.                  |                 |       |        |
| Diaudit oleh : .....                  |  | Jawatan : ..... |       |        |
| Tarikh : .....                        |  |                 |       |        |

Source: NIOSH (2017)

APPENDIX B  
SAMPLE QUESTIONNAIRE



Universiti  
Malaysia  
PAHANG  
Engineering • Technology • Creativity

No. Responden

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

**FAKULTI TEKNOLOGI KEJURUTERAAN**

**RESEARCH QUESTIONS**

***KAJIAN SOAL SELIDIK***

**A STUDY ON EMERGENCY MANAGEMENT IN TAHFIZ INSTITUTIONS AT  
KAMPUNG JANDA BAIK, PAHANG**

***KAJIAN PENGURUSAN KECEMASAN DI INSTITUSI TAHFIZ DI  
KAMPUNG JANDA BAIK, PAHANG***

All the information you provide in this questionnaire is for research purposes only and all information will be kept confidential. Hopefully with the cooperation you provide can facilitate this study and sincerity is greatly appreciated. *Semua maklumat yang anda berikan dalam borang soal selidik ini adalah untuk tujuan kajian sahaja dan segala maklumat akan dirahsiakan. Semoga dengan kerjasama yang anda berikan dapat memudahkan lagi kajian ini dijalankan dan keikhlasan amat dihargai.*

**2018/2019**

|   |                |             |
|---|----------------|-------------|
| <b>Nama</b>                                       |                |             |
| <b>Institusi Tahfiz</b>                           |                |             |
| <b>Usia</b>                                       |                |             |
| <b>Status (<i>Sila bulatkan jawapan anda</i>)</b> | <b>Pelajar</b> | <b>Guru</b> |

Soalan soal selidik

**Sila bulatkan (O) jawapan anda di ruangan yang disediakan**

Soalan 1

**Adakah anda mengetahui antara bahaya-bahaya yang mampu terjadi di Tahfiz anda selain daripada kebakaran?**

|                           |              |                  |            |                   |
|---------------------------|--------------|------------------|------------|-------------------|
| 1<br>Sudah tentu<br>tidak | 2<br>Mungkin | 3<br>Tidak pasti | 4<br>Pasti | 5<br>Sangat Pasti |
|---------------------------|--------------|------------------|------------|-------------------|

Soalan 2

**Adakah anda diberikan taklimat keselamatan sebelum sesi pembelajaran bermula bagi setiap tahun?**

|                           |              |                  |            |                   |
|---------------------------|--------------|------------------|------------|-------------------|
| 1<br>Sudah tentu<br>tidak | 2<br>Mungkin | 3<br>Tidak pasti | 4<br>Pasti | 5<br>Sangat Pasti |
|---------------------------|--------------|------------------|------------|-------------------|

Soalan 3

**Adakah Tahfiz anda ada melakukan latihan yang berkaitan dengan keselamatan & kesihatan?**

|                   |             |                  |            |                   |
|-------------------|-------------|------------------|------------|-------------------|
| 1<br>Tidak pernah | 2<br>Jarang | 3<br>Tidak Pasti | 4<br>Kerap | 5<br>Sangat kerap |
|-------------------|-------------|------------------|------------|-------------------|

Soalan 4

**Adakah anda tahu risiko yang akan dihadapi semasa melakukan aktiviti di Tahfiz anda?**

|                        |              |                  |            |                   |
|------------------------|--------------|------------------|------------|-------------------|
| 1<br>Sudah tentu tidak | 2<br>Mungkin | 3<br>Tidak Pasti | 4<br>Pasti | 5<br>Sangat Pasti |
|------------------------|--------------|------------------|------------|-------------------|

Soalan 5

**Adakah Tahfiz anda mengetahui pelan kecemasan yang boleh dirujuk sekiranya berlakunya kecemasan?**

|                        |              |                  |            |                   |
|------------------------|--------------|------------------|------------|-------------------|
| 1<br>Sudah tentu tidak | 2<br>Mungkin | 3<br>Tidak Pasti | 4<br>Pasti | 5<br>Sangat Pasti |
|------------------------|--------------|------------------|------------|-------------------|

Soalan 6

**Adakah Tahfiz anda memaparkan papan tanda “KELUAR” Pintu Kecemasan di setiap pintu keluar?**

|                        |              |                  |             |                    |
|------------------------|--------------|------------------|-------------|--------------------|
| 1<br>Tidak sama sekali | 2<br>Mungkin | 3<br>Tidak Pasti | 4<br>Banyak | 5<br>Sangat banyak |
|------------------------|--------------|------------------|-------------|--------------------|

Soalan 7

**Adakah anda mengetahui tempat berkumpul sekiranya berlakunya kecemasan?**

|                        |              |                  |            |                   |
|------------------------|--------------|------------------|------------|-------------------|
| 1<br>Sudah tentu tidak | 2<br>Mungkin | 3<br>Tidak Pasti | 4<br>Pasti | 5<br>Sangat Pasti |
|------------------------|--------------|------------------|------------|-------------------|

Soalan 8

**Adakah Tahfiz anda menyediakan peti pertolongan cemas?**

|                        |              |                  |            |                   |
|------------------------|--------------|------------------|------------|-------------------|
| 1<br>Sudah tentu tidak | 2<br>Mungkin | 3<br>Tidak Pasti | 4<br>Pasti | 5<br>Sangat Pasti |
|------------------------|--------------|------------------|------------|-------------------|

Soalan 9

**Adakah anda diberikan pendedahan ataupun sebarang latihan mengenai cara menggunakan peralatan di dalam peti pertolongan cemas?**

|                           |              |                  |             |                    |
|---------------------------|--------------|------------------|-------------|--------------------|
| 1<br>Tidak sama<br>sekali | 2<br>Mungkin | 3<br>Tidak Pasti | 4<br>Banyak | 5<br>Sangat banyak |
|---------------------------|--------------|------------------|-------------|--------------------|

Soalan 10

**Adakah Tahfiz anda mempunyai alat penggera kebakaran?**

|                           |              |                  |            |                   |
|---------------------------|--------------|------------------|------------|-------------------|
| 1<br>Sudah tentu<br>tidak | 2<br>Mungkin | 3<br>Tidak Pasti | 4<br>Pasti | 5<br>Sangat Pasti |
|---------------------------|--------------|------------------|------------|-------------------|

Soalan 11

**Adakah alat penggera kebakaran tersebut berfungsi di dalam keadaan baik?**

|                   |            |                  |           |                  |
|-------------------|------------|------------------|-----------|------------------|
| 1<br>Sangat lemah | 2<br>Lemah | 3<br>Tidak Pasti | 4<br>Baik | 5<br>Sangat baik |
|-------------------|------------|------------------|-----------|------------------|

Soalan 12

**Adakah Tahfiz anda mempunyai sistem pencegahan kebakaran?**

|                           |              |                  |            |                   |
|---------------------------|--------------|------------------|------------|-------------------|
| 1<br>Sudah tentu<br>tidak | 2<br>Mungkin | 3<br>Tidak Pasti | 4<br>Pasti | 5<br>Sangat Pasti |
|---------------------------|--------------|------------------|------------|-------------------|

Soalan 13

**Adakah Tahfiz anda mempunyai alat pemadam api?**

|                           |              |                  |            |                   |
|---------------------------|--------------|------------------|------------|-------------------|
| 1<br>Sudah tentu<br>tidak | 2<br>Mungkin | 3<br>Tidak Pasti | 4<br>Pasti | 5<br>Sangat Pasti |
|---------------------------|--------------|------------------|------------|-------------------|

Soalan 14

**Adakah Tahfiz anda ada diberikan latihan kebakaran bersama pihak BOMBA?**

|                           |              |                  |            |                   |
|---------------------------|--------------|------------------|------------|-------------------|
| 1<br>Sudah tentu<br>tidak | 2<br>Mungkin | 3<br>Tidak Pasti | 4<br>Pasti | 5<br>Sangat pasti |
|---------------------------|--------------|------------------|------------|-------------------|

Soalan 15

**Adakah Tahfiz mempunyai jawatankuasa keselamatan?**

|                           |              |                  |            |                   |
|---------------------------|--------------|------------------|------------|-------------------|
| 1<br>Sudah tentu<br>tidak | 2<br>Mungkin | 3<br>Tidak Pasti | 4<br>Pasti | 5<br>Sangat pasti |
|---------------------------|--------------|------------------|------------|-------------------|

Soalan 16

**Adakah jawatankuasa keselamatan Tahfiz anda ada mendapatkan latihan daripada pihak yang terlibat?**

|                   |             |                  |            |                   |
|-------------------|-------------|------------------|------------|-------------------|
| 1<br>Tidak pernah | 2<br>Jarang | 3<br>Tidak Pasti | 4<br>Kerap | 5<br>Sangat kerap |
|-------------------|-------------|------------------|------------|-------------------|

Soalan 17

**Adakah Tahfiz anda memberikan sebarang maklumat keselamatan dan kesihatan sama ada pada guru ataupun pelajar**

|                   |             |                  |            |                   |
|-------------------|-------------|------------------|------------|-------------------|
| 1<br>Tidak pernah | 2<br>Jarang | 3<br>Tidak Pasti | 4<br>Kerap | 5<br>Sangat kerap |
|-------------------|-------------|------------------|------------|-------------------|

Soalan 18

**Adakah Tahfiz anda pernah dilawati oleh pegawai keselamatan dan kesihatan?**

|                   |             |                  |            |                   |
|-------------------|-------------|------------------|------------|-------------------|
| 1<br>Tidak pernah | 2<br>Jarang | 3<br>Tidak Pasti | 4<br>Kerap | 5<br>Sangat kerap |
|-------------------|-------------|------------------|------------|-------------------|

Soalan 19

**Pernahkah wakil daripada pegawai keselamatan dan kesihatan memberikan sebarang bentuk promosi di Tahfiz anda.**



|                   |             |                  |            |                   |
|-------------------|-------------|------------------|------------|-------------------|
| 1<br>Tidak pernah | 2<br>Jarang | 3<br>Tidak Pasti | 4<br>Kerap | 5<br>Sangat kerap |
|-------------------|-------------|------------------|------------|-------------------|

Soalan 20

**Adakah Tahfiz anda pernah terlibat di dalam program “OSH in Tahfiz” ?**

|                   |             |                  |            |                   |
|-------------------|-------------|------------------|------------|-------------------|
| 1<br>Tidak pernah | 2<br>Jarang | 3<br>Tidak Pasti | 4<br>Kerap | 5<br>Sangat kerap |
|-------------------|-------------|------------------|------------|-------------------|

Soalan 21

**Adakah Tahfiz anda mengikut prosedur keselamatan yang ditetapkan oleh pihak berkuasa?**

|                        |              |                  |            |                   |
|------------------------|--------------|------------------|------------|-------------------|
| 1<br>Sudah tentu tidak | 2<br>Mungkin | 3<br>Tidak Pasti | 4<br>Pasti | 5<br>Sangat pasti |
|------------------------|--------------|------------------|------------|-------------------|

Soalan 22

**Adakah Tahfiz anda mempunyai audit dalaman sekurang-kurangnya sekali (1) dalam sebulan.**

|                   |             |                  |            |                   |
|-------------------|-------------|------------------|------------|-------------------|
| 1<br>Tidak pernah | 2<br>Jarang | 3<br>Tidak Pasti | 4<br>Kerap | 5<br>Sangat kerap |
|-------------------|-------------|------------------|------------|-------------------|

## APPENDIX C

### RESULT OF STATISTICAL PACKAGES SOCIAL SCIENCE

1) Tahfiz A

| <b>Descriptive Statistics</b> |    |         |         |      |                |
|-------------------------------|----|---------|---------|------|----------------|
|                               | N  | Minimum | Maximum | Mean | Std. Deviation |
| POTENTIAL HAZARD              | 97 | 1       | 5       | 3.61 | 1.076          |
| SAFETY BRIEFING               | 97 | 1       | 5       | 3.79 | 1.099          |
| DRILL                         | 97 | 1       | 5       | 2.87 | 1.096          |
| RISK                          | 97 | 1       | 5       | 3.52 | 1.072          |
| EMERGENCY PLAN                | 97 | 1       | 5       | 4.28 | .887           |
| EXIT SIGNAGE                  | 97 | 1       | 5       | 3.15 | 1.236          |
| ASSEMBLY POINT                | 97 | 1       | 5       | 4.73 | .729           |
| FIRST AID                     | 97 | 1       | 5       | 4.12 | 1.210          |
| FIRST AID EXPOSURE            | 97 | 1       | 5       | 3.35 | 1.250          |
| ALARM                         | 97 | 2       | 5       | 4.80 | .552           |
| ALARM FUNCTIONING             | 97 | 2       | 5       | 4.30 | .806           |
| PREVENTION SYSTEM             | 97 | 1       | 5       | 3.91 | 1.137          |
| FIRE EXTINGUISHER             | 97 | 1       | 5       | 4.88 | .505           |
| DRILL WITH BOMBA              | 96 | 1       | 5       | 4.20 | .980           |
| SAFETY COMMITEE               | 97 | 1       | 5       | 3.33 | 1.087          |
| TRAINING (COMMITEE)           | 97 | 1       | 5       | 3.08 | .920           |
| OSH INFORMATION               | 97 | 1       | 5       | 3.72 | 1.028          |
| VISIT FROM OSH                | 97 | 1       | 5       | 3.71 | 1.040          |
| PRACTIONER                    | 97 | 1       | 5       | 3.07 | 1.013          |
| SAFETY PROMOTION              | 97 | 1       | 5       | 2.12 | 1.083          |
| OSH IN TAHFIZ                 | 97 | 1       | 5       | 3.73 | 1.066          |
| FOLLOW PROCEDURE              | 97 | 1       | 5       | 3.29 | 1.136          |
| INTERNAL AUDIT                | 97 | 1       | 5       | 3.29 | 1.136          |
| Valid N (listwise)            | 96 |         |         |      |                |

2) Tahfiz B

| <b>Descriptive Statistics</b> |    |         |         |      |                |
|-------------------------------|----|---------|---------|------|----------------|
|                               | N  | Minimum | Maximum | Mean | Std. Deviation |
| POTENTIAL HAZARD              | 19 | 2       | 5       | 3.16 | .958           |
| SAFETY BRIEFING               | 19 | 1       | 5       | 3.74 | 1.327          |
| DRILL                         | 19 | 2       | 5       | 3.37 | 1.165          |
| RISK                          | 19 | 2       | 5       | 3.26 | 1.098          |
| EMERGENCY PLAN                | 19 | 1       | 5       | 3.84 | 1.068          |
| EXIT SIGNAGE                  | 19 | 3       | 5       | 4.37 | .597           |
| ASSEMBLY POINT                | 19 | 4       | 5       | 4.58 | .507           |
| FIRST AID                     | 19 | 3       | 5       | 4.16 | .765           |
| FIRST AID EXPOSURE            | 19 | 2       | 5       | 3.74 | .872           |
| ALARM                         | 19 | 2       | 5       | 4.11 | 1.150          |
| ALARM FUNCTIONING             | 19 | 3       | 5       | 4.05 | .911           |
| PREVENTION SYSTEM             | 19 | 1       | 5       | 3.68 | 1.336          |
| FIRE EXTINGUISHER             | 19 | 4       | 5       | 4.68 | .478           |
| DRILL WITH BOMBA              | 19 | 3       | 5       | 4.37 | .684           |
| SAFETY COMMITEE               | 19 | 2       | 5       | 3.21 | .631           |
| TRAINING (COMMITEE)           | 19 | 2       | 5       | 3.63 | .761           |
| OSH INFORMATION               | 19 | 2       | 5       | 3.32 | 1.157          |
| VISIT FROM OSH                | 19 | 2       | 5       | 3.37 | 1.212          |
| PRACTIONER                    | 19 | 2       | 5       | 3.37 | 1.212          |
| SAFETY PROMOTION              | 19 | 1       | 5       | 3.00 | 1.106          |
| OSH IN TAHFIZ                 | 19 | 1       | 5       | 3.05 | 1.129          |
| FOLLOW PROCEDURE              | 19 | 2       | 5       | 3.32 | 1.003          |
| INTERNAL AUDIT                | 19 | 1       | 4       | 2.84 | .898           |
| Valid N (listwise)            | 19 |         |         |      |                |

3) Tahfiz C

| <b>Descriptive Statistics</b> |     |         |         |      |                |
|-------------------------------|-----|---------|---------|------|----------------|
|                               | N   | Minimum | Maximum | Mean | Std. Deviation |
| POTENTIAL HAZARD              | 108 | 1       | 5       | 3.20 | 1.048          |
| SAFETY BRIEFING               | 108 | 1       | 5       | 3.81 | 1.409          |
| DRILL                         | 108 | 1       | 5       | 2.59 | 1.050          |
| RISK                          | 108 | 1       | 5       | 3.44 | 1.263          |
| EMERGENCY PLAN                | 108 | 1       | 5       | 4.22 | 1.088          |
| EXIT SIGNAGE                  | 108 | 1       | 5       | 4.08 | 1.185          |
| ASSEMBLY POINT                | 108 | 1       | 5       | 4.42 | .939           |

|                     |     |   |   |      |       |
|---------------------|-----|---|---|------|-------|
| FIRST AID           | 108 | 1 | 5 | 3.28 | 1.324 |
| FIRST AID EXPOSURE  | 108 | 1 | 5 | 2.57 | 1.162 |
| ALARM               | 108 | 1 | 5 | 4.24 | 1.191 |
| ALARM FUNCTIONING   | 108 | 1 | 5 | 3.96 | 1.058 |
| PREVENTION SYSTEM   | 108 | 1 | 5 | 3.79 | 1.388 |
| FIRE EXTINGUISHER   | 108 | 2 | 5 | 4.82 | .609  |
| DRILL WITH BOMBA    | 108 | 1 | 5 | 4.11 | 1.225 |
| SAFETY COMMITEE     | 108 | 1 | 5 | 3.44 | 1.070 |
| TRAINING (COMMITEE) | 108 | 1 | 5 | 2.84 | 1.153 |
| OSH INFORMATION     | 108 | 1 | 5 | 2.91 | 1.156 |
| VISIT FROM OSH      | 108 | 1 | 5 | 3.01 | 1.188 |
| PRACTIONER          | 108 | 1 | 5 | 3.01 | 1.188 |
| SAFETY PROMOTION    | 108 | 1 | 5 | 2.56 | 1.035 |
| OSH IN TAHFIZ       | 108 | 1 | 5 | 2.80 | 1.324 |
| FOLLOW PROCEDURE    | 108 | 1 | 5 | 3.44 | 1.194 |
| INTERNAL AUDIT      | 108 | 1 | 5 | 2.37 | .963  |
| Valid N (listwise)  | 108 |   |   |      |       |

#### 4) Tahfiz D

| Descriptive Statistics |    |         |         |      |                |
|------------------------|----|---------|---------|------|----------------|
|                        | N  | Minimum | Maximum | Mean | Std. Deviation |
| POTENTIAL HAZARD       | 33 | 2       | 5       | 3.55 | .971           |
| SAFETY BRIEFING        | 33 | 1       | 5       | 2.61 | 1.088          |
| DRILL                  | 33 | 1       | 4       | 2.21 | .740           |
| RISK                   | 33 | 2       | 5       | 3.61 | .998           |
| EMERGENCY PLAN         | 33 | 1       | 5       | 2.88 | .960           |
| EXIT SIGNAGE           | 33 | 3       | 5       | 4.67 | .540           |
| ASSEMBLY POINT         | 33 | 1       | 5       | 3.52 | 1.064          |
| FIRST AID              | 33 | 2       | 5       | 4.30 | .810           |
| FIRST AID EXPOSURE     | 33 | 1       | 5       | 2.85 | 1.149          |
| ALARM                  | 33 | 3       | 5       | 4.36 | .653           |
| ALARM FUNCTIONING      | 33 | 1       | 5       | 3.67 | 1.164          |
| PREVENTION SYSTEM      | 33 | 1       | 5       | 3.42 | 1.300          |
| FIRE EXTINGUISHER      | 33 | 4       | 5       | 4.82 | .392           |
| DRILL WITH BOMBA       | 33 | 1       | 5       | 1.97 | 1.185          |
| SAFETY COMMITEE        | 33 | 1       | 5       | 2.82 | 1.158          |
| TRAINING (COMMITEE)    | 33 | 1       | 4       | 2.27 | .944           |
| OSH INFORMATION        | 33 | 1       | 5       | 2.48 | .906           |
| VISIT FROM OSH         | 33 | 1       | 5       | 2.73 | 1.039          |
| PRACTIONER             | 33 | 1       | 5       | 2.73 | 1.039          |
| SAFETY PROMOTION       | 33 | 1       | 4       | 2.15 | .939           |

|                    |    |   |   |      |      |
|--------------------|----|---|---|------|------|
| OSH IN TAHFIZ      | 33 | 1 | 4 | 1.79 | .960 |
| FOLLOW PROCEDURE   | 33 | 1 | 5 | 2.79 | .927 |
| INTERNAL AUDIT     | 33 | 1 | 4 | 2.39 | .899 |
| Valid N (listwise) | 33 |   |   |      |      |

5) Tahfiz E

| Descriptive Statistics |     |         |         |      |                |
|------------------------|-----|---------|---------|------|----------------|
|                        | N   | Minimum | Maximum | Mean | Std. Deviation |
| POTENTIAL HAZARD       | 144 | 1       | 5       | 3.14 | 1.042          |
| SAFETY BRIEFING        | 144 | 1       | 5       | 3.09 | 1.279          |
| DRILL                  | 144 | 1       | 5       | 2.43 | 1.001          |
| RISK                   | 144 | 1       | 5       | 3.25 | 1.106          |
| EMERGENCY PLAN         | 144 | 1       | 5       | 3.34 | 1.184          |
| EXIT SIGNAGE           | 144 | 1       | 5       | 2.31 | 1.396          |
| ASSEMBLY POINT         | 144 | 1       | 5       | 3.60 | 1.281          |
| FIRST AID              | 144 | 1       | 5       | 4.05 | 1.118          |
| FIRST AID EXPOSURE     | 144 | 1       | 5       | 2.53 | 1.164          |
| ALARM                  | 144 | 1       | 5       | 2.85 | 1.582          |
| ALARM FUNCTIONING      | 144 | 1       | 5       | 3.08 | 1.330          |
| PREVENTION SYSTEM      | 144 | 1       | 5       | 3.24 | 1.253          |
| FIRE EXTINGUISHER      | 144 | 1       | 5       | 4.60 | .855           |
| DRILL WITH BOMBA       | 144 | 1       | 5       | 3.98 | 1.197          |
| SAFETY COMMITTEE       | 144 | 1       | 5       | 3.90 | 1.124          |
| TRAINING (COMMITTEE)   | 144 | 1       | 5       | 2.76 | .908           |
| OSH INFORMATION        | 144 | 1       | 5       | 3.11 | 1.091          |
| VISIT FROM OSH         | 144 | 1       | 5       | 2.57 | .966           |
| PRACTITIONER           | 144 | 1       | 5       | 2.56 | .966           |
| SAFETY PROMOTION       | 144 | 1       | 5       | 2.56 | .966           |
| OSH IN TAHFIZ          | 144 | 1       | 5       | 1.85 | 1.058          |
| FOLLOW PROCEDURE       | 144 | 1       | 5       | 2.87 | .838           |
| INTERNAL AUDIT         | 144 | 1       | 5       | 2.62 | .996           |
| Valid N (listwise)     | 144 |         |         |      |                |

6) Tahfiz F

| Descriptive Statistics |    |         |         |      |                |
|------------------------|----|---------|---------|------|----------------|
|                        | N  | Minimum | Maximum | Mean | Std. Deviation |
| POTENTIAL HAZARD       | 28 | 1       | 5       | 3.25 | 1.266          |
| SAFETY BRIEFING        | 28 | 1       | 5       | 3.57 | 1.230          |
| DRILL                  | 28 | 1       | 5       | 2.07 | 1.303          |
| RISK                   | 28 | 1       | 5       | 3.29 | 1.213          |
| EMERGENCY PLAN         | 28 | 1       | 5       | 3.86 | 1.239          |

|                      |    |   |   |      |       |
|----------------------|----|---|---|------|-------|
| EXIT SIGNAGE         | 28 | 1 | 5 | 1.75 | 1.295 |
| ASSEMBLY POINT       | 28 | 1 | 5 | 4.18 | 1.124 |
| FIRST AID            | 28 | 1 | 5 | 3.46 | 1.401 |
| FIRST AID EXPOSURE   | 28 | 1 | 5 | 2.82 | 1.442 |
| ALARM                | 28 | 1 | 5 | 1.89 | 1.227 |
| ALARM FUNCTIONING    | 28 | 1 | 4 | 1.79 | .995  |
| PREVENTION SYSTEM    | 28 | 1 | 5 | 2.18 | 1.307 |
| FIRE EXTINGUISHER    | 28 | 1 | 5 | 4.07 | 1.274 |
| DRILL WITH BOMBA     | 28 | 1 | 5 | 3.64 | 1.569 |
| SAFETY COMMITEE      | 28 | 1 | 5 | 3.07 | 1.086 |
| TRAINING (COMMITTEE) | 28 | 1 | 5 | 2.71 | .976  |
| OSH INFORMATION      | 28 | 1 | 5 | 3.11 | 1.197 |
| VISIT FROM OSH       | 28 | 1 | 5 | 2.25 | 1.206 |
| PRACTIONER           | 28 | 1 | 5 | 2.25 | 1.206 |
| SAFETY PROMOTION     | 28 | 1 | 4 | 2.18 | 1.156 |
| OSH IN TAHFIZ        | 28 | 1 | 3 | 1.50 | .745  |
| FOLLOW PROCEDURE     | 28 | 1 | 5 | 3.18 | 1.020 |
| INTERNAL AUDIT       | 28 | 1 | 5 | 3.25 | 1.266 |
| Valid N (listwise)   | 28 |   |   |      |       |

## 7) Tahfiz G

| Descriptive Statistics |    |         |         |      |                |
|------------------------|----|---------|---------|------|----------------|
|                        | N  | Minimum | Maximum | Mean | Std. Deviation |
| POTENTIAL HAZARD       | 24 | 2       | 5       | 3.00 | .885           |
| SAFETY BRIEFING        | 24 | 1       | 4       | 3.08 | 1.139          |
| DRILL                  | 24 | 1       | 4       | 2.13 | .797           |
| RISK                   | 24 | 2       | 5       | 3.67 | .868           |
| EMERGENCY PLAN         | 24 | 1       | 5       | 2.17 | 1.049          |
| EXIT SIGNAGE           | 24 | 1       | 3       | 1.42 | .776           |
| ASSEMBLY POINT         | 24 | 1       | 5       | 3.17 | 1.308          |
| FIRST AID              | 24 | 2       | 5       | 4.62 | .875           |
| FIRST AID EXPOSURE     | 24 | 1       | 5       | 2.79 | 1.141          |
| ALARM                  | 24 | 2       | 5       | 4.46 | .932           |
| ALARM FUNCTIONING      | 24 | 2       | 5       | 4.58 | .929           |
| PREVENTION SYSTEM      | 24 | 1       | 5       | 1.75 | 1.260          |
| FIRE EXTINGUISHER      | 24 | 2       | 5       | 4.38 | .924           |
| DRILL WITH BOMBA       | 24 | 1       | 2       | 1.17 | .381           |
| SAFETY COMMITEE        | 24 | 1       | 5       | 2.92 | 1.412          |
| TRAINING (COMMITTEE)   | 24 | 1       | 4       | 2.38 | .824           |

|                    |    |   |   |      |       |
|--------------------|----|---|---|------|-------|
| OSH INFORMATION    | 24 | 1 | 5 | 2.17 | 1.129 |
| VISIT FROM OSH     | 24 | 2 | 5 | 3.04 | 1.398 |
| PRACTITIONER       | 24 | 1 | 3 | 1.33 | .702  |
| SAFETY PROMOTION   | 24 | 1 | 2 | 1.08 | .282  |
| OSH IN TAHFIZ      | 24 | 2 | 5 | 3.63 | .924  |
| FOLLOW PROCEDURE   | 24 | 1 | 5 | 2.83 | 1.167 |
| INTERNAL AUDIT     | 24 |   |   |      |       |
| Valid N (listwise) | 24 |   |   |      |       |

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## APPENDIX D

### RESULT OF PILOT STUDY

Tahfiz 1

| Descriptive Statistics |    |         |         |      |                |
|------------------------|----|---------|---------|------|----------------|
|                        | N  | Minimum | Maximum | Mean | Std. Deviation |
| POTENTIAL HAZARD       | 48 | 1       | 5       | 3.00 | .989           |
| SAFETY BRIEFING        | 48 | 1       | 5       | 3.88 | 1.104          |
| DRILL                  | 48 | 1       | 5       | 2.65 | 1.021          |
| RISK                   | 48 | 1       | 5       | 3.31 | 1.257          |
| EMERGENCY PLAN         | 48 | 1       | 5       | 3.75 | 1.000          |
| EXIT SIGNAGE           | 48 | 1       | 5       | 3.54 | 1.352          |
| ASSEMBLY POINT         | 48 | 1       | 5       | 4.35 | 1.000          |
| FIRST AID              | 48 | 1       | 5       | 4.37 | .937           |
| FIRST AID EXPOSURE     | 48 | 1       | 5       | 3.33 | 1.078          |
| ALARM                  | 48 | 1       | 5       | 4.06 | 1.192          |
| ALARM FUNCTIONING      | 48 | 1       | 5       | 4.02 | .978           |
| PREVENTION SYSTEM      | 48 | 1       | 5       | 3.75 | 1.212          |
| FIRE EXTINGUISHER      | 48 | 2       | 5       | 4.85 | .505           |
| DRILL WITH BOMBA       | 48 | 1       | 5       | 4.15 | 1.130          |
| SAFETY COMMITTEE       | 48 | 1       | 5       | 3.50 | 1.255          |
| TRAINING (COMMITTEE)   | 48 | 1       | 5       | 2.85 | .989           |
| OSH INFORMATION        | 48 | 1       | 5       | 3.56 | 1.219          |
| VISIT FROM OSH         | 48 | 1       | 5       | 3.00 | 1.185          |
| PRACTITIONER           | 48 | 1       | 5       | 2.83 | .975           |
| SAFETY PROMOTION       | 48 | 1       | 5       | 1.90 | 1.171          |
| OSH IN TAHFIZ          | 48 | 1       | 5       | 3.02 | .934           |
| FOLLOW PROCEDURE       | 48 | 1       | 5       | 2.85 | 1.010          |
| INTERNAL AUDIT         | 48 | 1       | 5       | 2.85 | 1.010          |
| Valid N (listwise)     | 48 |         |         |      |                |



**APPENDIX E**  
**Gantt Chart**

| Research Activities             | 2018 |     |     |     |     |     |     |     |     |     |     |     |
|---------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                 | Jan  | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Title Selection                 | ■    | ■   | ■   | ■   | ■   |     |     |     |     |     |     |     |
| Discussion with supervisor      |      | ■   | ■   | ■   | ■   |     |     |     |     |     |     |     |
| Introduction                    |      | ■   | ■   |     |     |     |     |     |     |     |     |     |
| Literature Review               |      |     | ■   | ■   |     |     |     |     |     |     |     |     |
| Methodology                     |      |     | ■   |     |     |     |     |     |     |     |     |     |
| Submit first draft proposal     |      |     | ■   | ■   | ■   |     |     |     |     |     |     |     |
| Submit second draft proposal    |      |     |     |     | ■   |     |     |     |     |     |     |     |
| Submission of proposal          |      |     |     |     | ■   |     |     |     |     |     |     |     |
| FYP1 Viva Presentation          |      |     |     |     |     | ■   |     |     |     |     |     |     |
| Develop framework               |      |     |     |     |     |     | ■   | ■   |     |     |     |     |
| Develop Questionnaire/Checklist |      |     |     |     |     |     |     |     | ■   |     |     |     |
| Collect data                    |      |     |     |     |     |     |     |     | ■   |     |     |     |
| Thesis writing                  |      |     |     |     |     |     |     |     |     | ■   |     |     |
| Thesis draft submission         |      |     |     |     |     |     |     |     |     | ■   |     |     |
| Thesis presentation             |      |     |     |     |     |     |     |     |     |     | ■   |     |
| Thesis submission               |      |     |     |     |     |     |     |     |     |     |     | ■   |