

# Terror Acts by Dr. Azahari of The Al-Jamaah Alislamiyah Organization: The Use of Signature Bombs

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**Abstract.** Dr. Azahari was one of the intellectual actors who detonated bombings carried out by Al-JI organization in Indonesia. Interestingly, the bomb made by Dr. Azahari has a special feature known as a signature bomb. Dr. Azahari taught some Al-JI members, even wrote a book about bombmaking and distributed it. This research used the Theory of Needs from McClelland to analyze the background and goals of Dr. Azahari in making the signature bomb. The purpose of this research is to anticipate Al-JI organization, its affiliates, and other individuals or groups that have the potential to become terrorists or make bombs. This research used a qualitative approach with data collection techniques, namely literature study and interviews. Also, to validate the research, the research conducted a triangulation technique. The results showed that Dr. Azahari was involved in an act of terror because it was influenced by the problems he was experiencing and his environment. Although there are bombs that are similar to those made by Dr. Azahari, the authorities easily recognize Dr. Azahari's bomb because there is a signature that represents the psychological needs of him. It is the aesthetic value of circuit design in every bomb he made. Signature bombs were made because they are motivated by the Need of Achievement that underlies self-actualization. Dr. Azahari case points out that highly educated individuals can be involved in terrorism, and their involvement is more dangerous.

**Keyword:** Motivation, Environment Factor, Signature Bomb, Need of Achievement.

## 1 Introduction

In the beginning, bombs were used in warfare and military activities. Then the terrorists began using bombs as a tool to achieve their goals. In the 1990s, the number of terror attacks decreased, but the number of victims increased. The incident indicated that bombing was the most effective and deadliest method (Cronin, 2015). Acts of terror using bombs have occurred in Indonesia, such as the bombing in Bali, October 12, 2002. After the bomb terror attacks in Bali, a large-scale bomb explosion happened at the JW Marriot Hotel on August 5, 2003, in front of the Australian Embassy, Kuningan, Jakarta, on 9 September 2004, and in Bali on October 1, 2005 (Mamoto, 2008). The bombing was an act of terror that had the most impact on Indonesia and was able to attract the attention of the domestic and foreign community because of the selection of targets and the quality of the bombs used. The terror attacks that occur certainly have a purpose, whether for messages, threats, or protests against the

government. In the terror attack, besides the terrorist, there are parties who become its intellectual resources (Victoroff, 2005).

Dr. Azahari is one of the intellectual figures behind the terror bombing attacks that occurred in Bali, at JW Marriot, and at the Australian Embassy (Abimanyu, 2006). He has a higher education background and is quiet (Craig, D., 2017). However, his failure in the past motivated him to study and explore religion. Unfortunately, he studied religion in a boarding school which became the target of the Al Jama'ah Al Islamiyah (AL-JI) group recruitment. Dr. Azahari was then radicalized, recruited into terrorist groups, and involved in acts of terrorism. The bomb used in these terrorist attacks has been identified as a bomb made by Dr. Azahari (Cianflone, et al. 2007). Interestingly, the bomb design by Dr. Azahari has one uniqueness. There is a characteristic in the bomb that he made so that the authorities can recognize the bombs. In addition, the bomb expert of Indonesian National Police Headquarters analysis results also stated that Dr. Azahari has special characteristics or signatures (Wachjunadi, 2017). The term signature was first used by Douglas who is an American criminal profiler, a special investigation agent of the Federal Investigation Bureau. The trace on crime or signature is one of the operation modes of crime. The sign will always be the same in every action and shows their existence, motivations and personal needs of the terrorist, such as sexual needs, obtaining fantasies, and so on (Douglas, J & Munn, C, 1992).

Behavior is everything that we do, and we can observe directly. For example, a child who makes a poster (Waruwu, 2004). This also applies to the case of Dr. Azahari who made the bomb. We can analyze his behavior through the bombs he made. Simon (2013) explains that the background or motivation that encourage the doer perform an action can be analyzed through the psychological profile of the offender, even though they have never met and do not know about the personality or mindset of the individual to be profiled. In his book entitled "Lone Wolf Terrorism Understanding the Growing Threat," Simon (2013) writes that profiling can be done based on an assessment of the attack type carried out, weapons used, targets, and also victims. Thus, to analyze Dr. Azahari behavior, we can do it through his biography and use of his signature bomb.

Dr. Azahari died on November 9, 2019 during a raid conducted by the Counterterrorism Special Detachment 88 Team in Malang, East Java. Before he died, Dr. Azahari had taught several Al-JI members to assemble bombs, one of which was Reno (International Crisis Group, 2009). Reno later became a reliable bomb assembler and was known as the successor of Dr. Azahari (DetikNews, 2009). Besides teaching some members of Al-JI, Dr. Azahari has also written a book about instructions for making bombs (Cianflone, et al, 2007). This book has been used as a guideline for several other terrorists to make bombs. Based on data from the Forensic Laboratory Center of Indonesian National Police Headquarters, the bomb used in acts of terror around 2009 was similar to the bomb made by Dr. Azahari. In addition, there are still a number of other bomb terror acts that were found using the same components as the components used by Dr. Azahari, such as the terrorist bombing on Jalan MH Thamrin, Jakarta, in 2016 and in Sibolga, in 2019.

Based on the existing problems, the research of Dr. Azahari and the signature bomb are interesting to conduct because they can provide a more in-depth picture of Dr. Azahari behavior and motivation in making bombs. It aims to anticipate individuals like Dr. Azahari who has the ability and skills to make bombs in making ones. In general, there is still little literature talking about signature bombs and the motives behind them. Furthermore, with the spread of Dr. Azahari book, there is a new threat that needs further study in order to anticipate the use of similar bombs and chemicals that can be used to make bombs.

## 2 Literature Study

Based on Junaid (2013), terrorism crime has occurred in several countries, both developing and developed countries, thus it needs attention. A neat and systematic terror act that is conducted by a particular group is called terrorism. The variety of goals, motivations, targets, and methods of terrorism that has expanded, therefore terrorism is a crime towards security and the peace of humans. It is no longer merely a regular destructive crime. In his opinion, terror is a word that causes fear and terror acts that occur in Indonesia have raised concern and pressure from the international world. After the revision and legalization of the law, prevention and counterterrorism will be conducted continuously. Furthermore, there will be an increase in the performance of authorities and the role of the community. However, the development of technology will provide a fertile ground for the growth of terrorism. By utilizing technology and broad media coverage, the goal of terror acts, which is creating fear, can be easily achieved.

Al-JI is an organization that is very dynamic and is centered abroad and conducts recruitment substantially and returned to Indonesia to take the opportunity to run a group organization (Oak, 2010). In his discussion, he explained that Al-JI were the perpetrators of several bomb terrors in Indonesia, among others were the bomb on Christmas Eve 24 December 2002; the bomb in Bali on 12 October 2002; the bomb at JW Marriot Hotel, Jakarta on 5 August 2003; the bomb at the Australian Embassy on September 9, 2004; and in Bali on 1 October 2005. Until 2005, there was at least one large terror attack conducted by Al-JI. In his opinion, after 2005 people start to believe that terrorism threat is declining. However, Al-JI is a group that has evolved and adapted with its surroundings in many forms to ensure its sustainability. Even though their operational capacity has been pressed by external factors and their internal division has been exploited, Al-JI managed to pass it and was able to run again. Thus, for the strategies to be effective, an evolved Al-JI should be responded by an evolved strategy, as well.

Wachjunadi (2017) in his book titled "The mission of the Black Sparrow: Revealing the Mystery of the Terrorist, Dr. Azahari", explained that the signature bombs are Dr. Azahari's creations. Through investigation on the bomb terror act in Bali 2002 and JW Marriot Hotel in 2003, it was discovered that the bomb used in both acts was similar and was made by Dr. Azahari. Furthermore, the investigating team was easier to identify the actor of the bomb attack on the Australian Embassy in 2004 based on the modus operandi, which was among others a signature bomb. In 2005, the bomb occurred again in Bali and the investigation focused on the signature bomb to confirm the terrorism actor.

Gazi and Lutfi (2011) conducted research on "From an Ordinary Person to a Terrorist: A Psychological Study on the Actor and Behaviors of Terror". This research used qualitative methods through content analysis and biographic techniques. In this research, it was concluded that the two most influencing factors contribute to becoming a terrorist, which are environmental and personality factors. The environmental factors among others include the neighborhood, education environment, and religion. While personality factors include internal psychological dimensions or ideological beliefs.

Prasetya, et al. (2017) discovered in their research that social media was used by terrorist groups to spread propaganda. This was intended to provoke and to increase the number of recruits in terrorist groups. Moreover, social media was also used as a source of training in bomb-making. This was intended so that individuals can self-learn about bomb-making. The research also stated that the Indonesian Police has conducted prevention and legal action, however, it is yet optimal. Also, in research conducted by Azzah (2019) on the use of Dual-Use chemicals, it was discovered that there was an abuse of Dual-Use chemical material by terrorist groups. However, the materials can be obtained easily from retail and online stores. An example was

the Bali bomb in 2002, in which the explosive materials used at that incident was purchased in a large amount from a retail store, however, the seller did not confirm the identity nor asked further questions. Azzah concluded that the abuse of Dual-Use chemicals was caused by the limited control on the distribution of chemicals.

The above literatures provide a description that an individual could be involved in terror acts because of the influence from his/her environment. An individual can also easily learn how to make bombs from social media. Bomb terror attacks will continue to be a threat for the community and country due to the limited control on chemicals that can be used as explosive materials for bomb components, as well as the prevention and legal action on the distribution of online information is still not optimal. Especially if the terrorist groups or other individuals use bombs similar to the Bali Bomb I in 2002, the bomb at JW Marriot Hotel in 2003, the Australian Embassy bomb in 2004, and the Bali Bomb II in 2005, which were signature bombs. Therefore, further research should be conducted regarding the signature bombs and the psychology of the actors in order to help anticipate or prevent any future actions.

### **3 Theoretical Framework**

#### **3.1. Theory of Motivation**

Some individuals became terrorists because they are motivated to use their skills in making bombs. There are also individuals who are better educated motivated by their religious beliefs (Hudson, R., 1999). Motivation is the driving force that makes a person or a member of an organization use their expertise or skills, time, and energy to achieve their goals (Siagian, S., 2004).

One of the theories of motivation is the Theory of Need from McClelland, which is closely related to the concept of learning. A strong desire or motivation within themselves will drive them to fulfill their needs. In the early 1960s, McClelland identified three motivators that everyone had, which were achievement, affiliation, and power. Among the three motivators possessed by everyone, one of them will be the dominant motivator, and it depends on life experience of that person (Pardee, R., 1990; Jha, S., 2010; Royle, M. & Hall, A., 2012; Ondabu, I., 2014).

Need of Achievement (nAch) is a need that underlies Maslow's self-actualization, which is to push people into something that they are capable of as a unique human characteristic. According to McClelland's theory, people with the nAch motivation depict individuals who want to drive to excel to achieve more than usual standards. The nAch involves the desire to master objects, ideas, or other people by using existing abilities to increase one's self-esteem. In addition, people who want to succeed like situations where they can be personally responsible for finding solutions to problems and taking calculated risks. Achievers want concrete feedback about how well they are doing. McClelland's theory of the nAch is, "Conscientious individuals are more important to set goals that challenge themselves and continue to support those goals." This is to achieve a higher standard (Pardee, R., 1990; Jha, S., 2010; Royle, M. & Hall, A., 2012; Ondabu, I., 2014).

Need of Affiliation (nAff) is the need to be accepted by others, or the need to participate in social life. Leadership becomes one factor that plays a role in supporting people who need affiliation. Individuals who have the nAff exhibit higher group participation so that they can come up as group leaders. Moreover, people who have high nAff are very open, talkative, and

like working in profitable groups (Pardee, R., 1990; Jha, S., 2010; Royle, M. & Hall, A., 2012; Ondabu, I., 2014).

Need of Power (nPow) is the desire to influence others by training, teaching, and encouraging that person. People who have high nPow want to build their leadership and authority. Likewise, they will have more active, confirmed and stable control in undergoing relationships with others. The power motivation does not only use persuasive power to be more autocratic and authoritative in achieving organizational goals (Pardee, R., 1990; Jha, S., 2010; Royle, M. & Hall, A., 2012; Ondabu, I., 2014).

### **3.2. Causative Factor of Someone Becoming a Terrorist**

The factors that cause a person to become a terrorist are the pull factor and the driving factor (Mapparessa, 2019). These two factors work together to get someone involved in terrorism. It cannot happen with one factor only.

The driving factor comes from within the person, such as the psychological or motivational dimension. Meanwhile, the pull factor comes from the environment. Gazi & Lutfi (2011) added that environmental factors include the home environment, educational environment, and religion. A good environment will bring out good humans, while a bad environment will bring out bad humans (Oktarima & Mahsusan, 2009). In addition, people can learn from their environment, and it is the result of learning that determine their behavior.

### **3.3. Signature Bomb**

Based on the findings, terrorist acts carried out by Al-JI and Dr. Azahari, as a bomb assembler, can be identified from the mode of operate they carried out, including the signature bomb. During Dr. Azahari involvement, the bomb found by bomb experts and forensic experts looks different from the one used by Al-JI when Dr. Azahari is not involved. Dr. Azahari signature on the bomb found at the crime scene, can be compared through the bomb component.

The definition of bombs in the Head of the Indonesian National Police Regulation Number 11 of 2010, concerning Handling of Bomb Usage, Chapter I General Provisions, Article 1 Number 4, is as follows:

*“Bomb is an object that is made up of 4 (four) main components, namely power, initiator, explosive and switch.”*

If one component does not exist, then it cannot be called a bomb. While, the term signature was first used by Douglas who is an American criminal profiler, a special investigation agent of the Federal Investigation Bureau. The traces and signs left after a crime become one of its operating modes, and the sign left will always be the same in every action. Douglas, J. & Munn, C. (1992) states that the action or signature does not affect the success or failure of the crime, but rather shows the theme, motivation, and personal needs of the terrorist such as anger, wanting to get fantasy, or so forth. Based on this understanding, it can be concluded that the signature bomb is the result of a combination of four components, namely power, initiator, explosive, and switch which are designed in the form of bombs that have special signs or features as the operating mode of the bomb planner or terrorist. Besides, the signature bomb was created because of the motivation or psychological influence of the bomb maker, while the signature itself did not affect the success or failure of the bomb explosion.

## 4 Research Methods

This research used a qualitative approach by collecting data through literature studies, interviews, and document studies. Interviews were conducted with several informants from the police who had handled the terrorist acts of the Al-JI organization and Dr. Azahari, as follows: (1) Police Chief Commissioner, Zackaria Sembiring, as a chemical expert at the Forensic Laboratory Center of Indonesian National Police Headquarters; (2) Mr. Budi Prasetya, M.Sc. as a bomb expert from the Gegana Unit of Indonesian National Police; (3) Mr. Mudhar as a member of the Gegana Unit of Indonesian National Police that handles the terrorist Dr. Azahari bombings; (4) Inspector General. Pol. (P). Dr. Benny J. Mamoto, as a former investigator of Counterterrorism Special Detachment 88 who handled the Al-JI case and interrogated Mukhlas, Amrozi, Imam Samudera, Ali Imron, Cholili, Nasir Abas, and other actors who were members of Al-JI or terrorists involved with Al-JI organization. This study also intends to interview the parties from the Counterterrorism Special Detachment 88 (Detachment 88/AT) and psychologists, but the intended informants have not been able to take any participation due to their ongoing duties.

Apart from those who deal with the terrorist acts of the Al-JI organization and Dr. Azahari, the researchers also interviewed a terrorism prisoner (napiter), ex-napiter, and ex-combatants who knew Dr. Azahari. The interviewees referred to: (1) Ali Imron as a terrorism prisoner who is still being detained because he was sentenced to life in prison for his involvement, especially as a field coordinator in the Bali bombing in 2002; (2) Ali Fauzi as the family of Mukhlas and Ali Imron who are friends of Dr. Azahari; (3) Religious teacher Yusuf Anis who had been a Combatant and a bomb maker and become a witness of Dr. Azahari being recruited by the Al-JI. **Table 1.** is a breakdown of the interviewees list.

**Table 1.** The Interviewees List Breakdown

Interviewees	Number of Interviewees	Interview Place	Interview Date
Forensic Laboratory Center of Indonesian National Police Headquarters	1	Forensic Laboratory Center of Indonesian National Police Headquarters, Jakarta Timur	September 12, 2019
Ex-Investigator of Detachment 88/AT	1	Research Center for Policy Science and Terrorism Study, SKSG UI, Jakarta Pusat	September 17, 2019
Gegana Unit of Indonesian National Police Headquarters	2	Gegana of Indonesian National Police Headquarters, Depok	December 6, 2019
Ex-Combatants of Al-JI Group	3	Lingkar Perdamaian Institution, Lamongan, East Java.	August 17, 2019
Terrorism Prisoners	1	Indonesian National Police Headquarters, Jakarta Selatan	January 10, 2019

Besides the interviews, researchers also collected data from various documents from several authorities and parties who handle the Al-JI terrorist acts and other parties who had records of Al-JI terrorist acts in Indonesia. The documents are books written by the police and former of AFP; Related research journals; Data on terrorist acts and bomb components from the National Police Headquarters; Data of terrorist acts and documentation of the terrorists and victims of Detachment 88/AT; Bomb data and bomb documentation from the Gegana Unit of National Police Headquarters; The Al-JI organization terror investigation data from the Task Force (Satgas) of the National Police; Case file (BAP) of Wan Min Wan Mat from Malaysia; BAP of Mukhlas; Data from the Indonesian National Police Bomb Task Force 2005; Book about bombs made by Dr. Azahari; PUPJI; Documents from Deraja Court Malaysia (PDM). The literature studies take place from October 2018–2019. The interviews take place from January 2019, while document studies take place in 2019 - 2020.

Dr. Azahari died at the raid site so that he could not be examined and could not have a BAP. Therefore, the BAP analyzed was the BAP of Mukhlas. The BAP was chosen because Mukhlas, who was executed, was one of the Al-JI leaders in Indonesia who knew Dr. Azahari. He even invited Dr. Azahari to join in planning bombs in Bali in 2002. The Forensic Laboratory Center of Indonesian Police Headquarters data is a list of bomb components of every bomb terrorist act that occurred in Indonesia, and the Gegana Unit of National Police Headquarters data are bomb making techniques, particularly regarding the signature on Dr. Azahari bomb. The analysis technique used in this study is the triangulation method that aims to check the validity of the data and avoid data bias.

## **5 Result**

### **5.1. Profile of Dr. Azahari**

Dr. Azahari is a low-profile (simple, despite having many advantages) and quiet person. This was known through interviews with Yusuf Anis and Ali Imron. Yusuf Anis explained, “Dr. Azahari is a low-profile person. It seems like he is a smart person. He is a lecturer who has studied in England, and even taught at UGM. He is a quiet person,” and Ali Imron added, “Dr. Azahari is a quiet person, as far as I know. Then, yes, he is an educated person, that’s why he doesn’t talk much.” Craig (2017) as a former AFP agent explained that Dr. Azahari is a shy person, but he has a fairly high sense of humor. His sense of humor makes him easy to get along and faster to adapt. He wrote, “Despite being naturally shy, he had a wickedly quick sense of humor.” Agreeing with Craig (2017), Ali Fauzi revealed, “Dr. Azahari is a person who likes to joke.” In addition, Wachjunadi (2017) also explained that Dr. Azahari is a smart person.

Some literature explains that Dr. Azahari faced several problems in his life that made him want to improve. First, he failed while completing his undergraduate education in Australia because of his social relations, such as joining motorcycle gangs, dating, and drinking. Second, his wife suffered a miscarriage while he was continuing his doctoral education at Reading University. Third, his wife was convicted of suffering from throat cancer until she lost her voice.

When Dr. Azahari failed to complete his undergraduate education, he tried to improve himself by showing her father that he was capable. Dr. Azahari retakes his Bachelor’s Education in Malaysia and completed it. He continued his education until he obtained a doctorate at Reading University, United Kingdom. His achievements can be achieved after he left his bad habits which are hanging out with his motorcycle gangs, partying, and drinking. Furthermore,

when his wife miscarried, Dr. Azahari tried to better himself by studying the Qur'an. He got acquainted with Abdullah Sungkar and was taught about the Qur'an. According to Abdullah Sungkar, Dr. Azahari faced all his problems because of his disobedience to religion, including how he dressed that was not in accordance with Islamic teachings. Problems will continue to come to Dr. Azahari as long as he hasn't changed. Based on Craig (2017), his wife does not know to what extent Abdullah Sungkar has influenced his husband, but Dr. Azahari prefers to study the Qur'an by himself because he considers the teachings of Abdullah Sungkar to be irrational.

Dr. Azahari is also used to hearing teachings or calls to fight against the West, Jews, and Democracy, while he was still in Australia. However, he was not influenced or radicalized because he felt that the teaching was not realistic (Craig, 2017). During his work as Director of real estate in Jakarta, he headed to the workplace by passing the Australian Embassy building. Whenever he saw the Australian flag, he remembered all his failures and relationships while in Australia. However, this does not affect him, and there is no indication that he has been influenced. In fact, when his wife was pregnant again, and her wife said that her pregnancy has a relation on what Abdullah Sungkar had said, Dr. Azahari remains unaffected and not radicalized.

After completing his undergraduate education, Dr. Azahari returned to Malaysia and became a UTM lecturer. Based on Wan Min's explanation, he met Dr. Azahari in a religious study class, took place at Hamdan's house, in Taman Skudai Baru, Johor Bahru, in 1992. At that time, Dr. Azahari was present with ten other people he did not know. The lecturers of that religious study class were Afif and Mukhlas. In the study class, they were not immediately introduced to the Al-JI organization. Afif and Mukhlas delivered the lecture related to the obligation of every Muslim to strive for jihad. They gave examples of the Muslims oppressions as happened in Ambon and Bosnia. Then they read the verses of the Qur'an that were relevant to support the lectures delivered.

In mid-1993, Wan Min expressed his wish to become a JI member to Afif and Mukhlas. However, he has to vow the Bay'ah (pledge of allegiance) to Abdullah Sungkar. After agreeing, two weeks later, Wan Min and Dr. Azahari shook hands with Abdullah Sungkar while reciting the Bay'ah. The Bay'ah reads, "I promise I will obey you as the leader in practicing the Qur'an and the Sunnah while we are not out of obedience to Allah and His Messenger, as far as I can" (BAP Wan Min, n.d). According to the interview with Yusuf Anis, he first knew Dr. Azahari around 1993 or 1994. He explained, "When I returned from Afghanistan, I heard the name Noordin, Dr. Azahari, from UTM (Malaysia University of Technology). It can be said that I am already a senior, and he is still a junior, still under the guidance. That was around 1993 or 1994." He also added that at that time, Dr. Azahari is already a member of the AlJI group. Furthermore, Yusuf Anis explained Dr. Azahari reason in joining the organization, "Because he was indeed interested in and persevering the teachings of Islam. It just so happens that he met people like us. So, we influenced him. Indeed, many Malaysians are curious about Islam. It happened that he met us."

In 1996, Dr. Azahari came to Indonesia and worked as a Director of a real estate company in Jakarta. But, in 1997, he left the job and returned to Malaysia. Before returning to Malaysia and being a lecturer at UTM, he had been a guest lecturer at the Faculty of Economics, Gadjah Mada University, Yogyakarta for six months. He returned to Malaysia because his income as a guest lecturer was not enough to meet his needs in Indonesia. Then he met again with Abudullah Sungkar at an Islamic Boarding School (Ponpes). He lived near Lukmanul Hakim Islamic Boarding School, in Ulu Tiram, Johor, Malaysia. After his wife was said to have cancer, Dr. Azahari better himself by being more faithful in worshiping (Craig, 2017). Based on an



interview with Yusuf Anis, "Dr. Azahari was very diligent in the class, without knowing he was being recruited by the Al-JI organization." In the end, Dr. Azahari became more radical and began to be involved in terrorist movements with the Al-JI organization. He was even included in the structure of Al-JI Johor organization.

Based on BAP of Wan Min, Dr. Azahari was appointed by Abd. Razak @Farouk to help him in the Army. The exercises in the Army field consist of two forms, namely the theoretical form and the practical form. Classes in practical form will be held after the members follow the training in theoretical form. The Al-JI organization provides a place to implement the knowledge gained during the military training process so that the members can gain the experience of jihad. The members of the Al-JI organization who had practiced were taken to jihadist fields, such as in the Southern Philippines and Ambon (Indonesia). At the same time, the religious class continues to motivate the members to carry out jihad (BAP Wan Min, n.d).

The BAP of Mukhlas and the results of interviews with Ali Imron and Yusuf Anis revealed that Dr. Azahari went to Afghanistan to learn to assemble bombs in 1999. After returning to Malaysia, he used the campus laboratory facilities to deepen his knowledge of bombs so that he could better master the bomb assembly (Craig, 2017). Besides practicing in Afghanistan and in the campus laboratory, Dr. Azahari also went to the Southern Philippines and joined the Al-JI organization there. This was discovered through the interview with Yusuf Anis who had been in Mindanao for several months before the arrival of Dr. Azahari. This shows that Dr. Azahari has reached the stage of coaching for jihad.

Wan Min in his BAP explained, in January 2001, Amran told him that he and Dr. Azahari were involved in churches terrorist bombings in Indonesia on Christmas Eve. Amran acts as the one who put the bomb in the target place, and Dr. Azahari acts as the supervisor. On January 7, 2002, Dr. Azahari met with Hambali in Bangkok. During the meeting, it was agreed that Mukhlas would replace Hambali to lead the Al-JI organization in Thailand and continue the bombing plan. Then Hambali, Dr. Azahari, and Noordin M. Top discussed about the planned bombing in private. Dr. Azahari was directed to design the bombing in Singapore, while Noordin M. Top was directed to design the bombing in Indonesia (BAP Wan Min, n.d).

In September 2002, Dr. Azahari visited Mukhlas in Indonesia and stated that he was unable to carry out the bombing in Singapore because of tight security. Therefore, Mukhlas who is the leader of the Al-JI organization in Indonesia directs Dr. Azahari to support the bombing plan in Bali in 2002 (BAP Mukhlas, 2002). He then joined the bomb making together with the other bomb assemblers while directing and overseeing the process of bomb making that will be used on October 12, 2002 in Bali. Dr. Azahari great abilities and skills made him successful in assembling the bomb that have a special characteristic called a signature bomb. He also taught some members of Al-JI to make bombs and wrote down his knowledge on how to make and design bombs on a book. To avoid the police tracking, Dr. Azahari used a fake identity and even had an Indonesian ID card. The police found the ID card in Noordin M. Top house in Semarang.

## **5.2. Dr. Azahari Involvement in Terror Act in Indonesia**

Based on the interview with Ali Imron, Dr. Azahari has not involved when the bombing in Bali occurred. While according to the interview with Yusuf Anis, it showed that the bomb used in the Bali terrorist bombing in 2002 was made by Dr. Azahari. Books, such as those written by members of the Indonesian police and a former AFP agent, stated that Dr. Azahari has been involved in acts of terror since 2002. This was also supported by the BAP of Mukhlas. In fact, Mukhlas is the person who drove Dr. Azahari went to the bomb assembly site used by the Al-JI organization to prepare for the bombing in Bali at that time. Dr. Azahari involvement as the

bomb assembler in Bali in 2002 was confirmed through an interview with one of the former Special Detachment 88/AT investigators who handled the bomb terror case, namely Inspector General Pol (P.) Dr. Benny Mamoto. In his interview, he said that the bomb used in the bombing was Dr. Azahari bomb. This is known through his investigation of several actors involved, such as Mukhlas, Imam Samudera, Amrozi, and others. In fact, before 2002, Dr. Azahari had also been involved in terrorist acts by the Al-JI organization during the Christmas Eve bombings in Batam, which are the GKPS Church – Sei Panas, Bethany Church, Pentecostal Church of Indonesia, and the Church of Santo Beato. But, his role at that time was only as the supervisor of the terror attacks. This is known through the document from the Bali Bombing Explosion Investigation Team.

Furthermore, Dr. Azahari was involved in the 2002 Bali bombing, the JW Marriot Hotel Jakarta bombing in 2003, the bombing in front of the Australian Embassy in 2004, the 2005 Bali bombing, and the 2005 Malang bombing (Arresting Dr. Azahari). In those terrorist acts, he played a role as a bomb assembler and the detonation was carried out by someone else using a suicide bombing method. According to Zackaria Sembiring, the bomb terror acts carried out by the Al-JI organization were easily identified through their operating mode, such as car bombs and suicide bombings. The attacks are targeting foreign interests, namely America and its allies. As for each of these crime scenes, since Dr. Azahari was involved in terrorist acts carried out by Al-JI in 2002, bomb experts found evidences showing the use of the signature bombs. The discovery made it easier for the police to uncover the terrorists and identify the bombs made by Dr. Azahari.

### **5.3. Signature Bomb**

During the involvement of Dr. Azahari, the bomb found by bomb experts and forensic experts looks different from the one used by Al-JI when Dr. Azahari is not involved. The result of the interviews with the Inspector General of Police. (P) Dr. Benny Mamoto revealed that the bomb made by Dr. Azahari is unique, so it is known as a signature bomb. The Police Chief Commissioner (Kombes Pol) Zackaria Sembiring added that the terrorist acts carried out by the Al-JI together with Dr. Azahari as a bomb assembler can be identified through the signature bomb. He added that the use of the term Signature Bomb was initiated by a team from General Pol. Drs. Tito Karniawan which was intended to speed up the process of investigating the terrorist acts by the Al-JI that involves Dr. Azahari. The bomb that has Dr. Azahari signature can be compared through the bomb component and bomb design. This is known through the interviews conducted with the chemists from the Indonesian Police Headquarters and bomb experts from the Gegana Unit of Indonesian National Police.

The power or resources used by Dr. Azahari is a 9-volt HW branded battery and always uses at least 2 batteries in one bomb design. Whereas, the initiator, as stated by the Forensic Laboratory Center of the Indonesian Police Headquarters members, that Dr. Azahari still uses a lot are those which from the manufacturer and non-electric. He also took a TV cable to make a detonator. Even so, according to members of the Gegana unit of Indonesian National Police, Dr. Azahari changed the non-electric initiator became electric. Dr. Azahari already uses self-assembled electronic switches. The Gegana Unit of Indonesian National Police also added that Dr. Azahari always wrapped the legs of the resistors on a solder board using a cable to prevent a short-circuiting and ensure that the bomb would explode successfully. This is known as plastic tubing. The members of the Gegana unit of National Police also added that the bomb made by Dr. Azahari always has more than two switches in one circuit. Switching that are used include Direct Switch, Delay System, Remote Control, and Victim Operate Device. While, the

explosive used is Flash Power (Potassium Chlorate (KClO<sub>3</sub>) + Sulfur (S) + Aluminum (Al)). In addition, a bomb made by Dr. Azahari also uses an additional component, such as TNT to strengthen its explosive power. Flash Powder is the main ingredient of the explosives, while TNT is the buster.

The bomb expert from the Gegana unit of Indonesian National Police also explained that, “The bomb made by Dr. Azahari can be identified through its design system. From the design system, there is a significant safety system there.” He added, “Today, the safety has been ignored. It’s just an ordinary suicide bomb. If Dr. Azahari made the bomb, there must be two safety.” Safety is used to avoid an unwanted explosion. Besides using the safety, the indicator that makes the difference from the bombs made by Dr. Azahari is the soldering method. Dr. Azahari makes a neat solder, and its circuit design has aesthetic or beauty value. According to the bomb expert from the Gegana Unit of Indonesian National Police, Dr. Azahari is very skilled in assembling the bomb components on the solder board. In the process of assembling the bomb on the solder, Dr. Azahari also uses tape to connect or secure the cables from the risk of short-circuiting. Besides that, Dr. Azahari uses a solder board that is easily shaped so that it can be adapted to the shape of the casing, including a storage container or a food serving tray. Dr. Azahari also added projectiles, such as buckshot, to the design of his bombs to add to the fragmentation effect.

Dr. Azahari has taught several members of Al-JI how to make bombs, in fact, it is known that Dr. Azahari knowledge has been recorded as a book and spread among Al-JI organization members. Kombes Pol. Zackaria states that after Dr. Azahari died, Forensic Laboratory Center of Police Headquarters found a bomb terror that used similar bomb with those made by Dr. Azahari. The similarity can be known through the same type of explosives and similar designs. For example, the terror, that occurred in Palembang in August 2008, used a bomb with a Flash Powder type of explosives. From the design, the terrorist used an initiator that was made from the head of a decorative lamp and had a security system, even though it only used one. Furthermore, members of the Gegana Unit of National Police said the bomb used at the JW Marriot Hotel and Ritz Carlton on July 17, 2009 were assembled by Dr Azahari student named Cholili. His bomb was similar to Dr. Azahari, which uses the same component and design. The bomb was found to have the same solder board as used by Dr. Azahari. The solder board is shaped according to the container. However, based on the Indonesian National Police Headquarters member, it is only the replica of Dr. Azahari bomb because the cable that was used did not have the same length as the original one.

According to the Gegana Unit of Indonesian National Police, there were no more bombs that had a similar design after the 2009 bombing. The network of Noordin M. Top was also cut off after his arrest and death. Nevertheless, act of terror that occurred in 2016, in Surabaya, has used two switching in one series of bombs. Prasetya (2017) writes that the use of the two switching is usually used by suicide bombers from the Al-JI organization network when Dr. Azahari and Noordin M. Top still involved. Based on the results of interviews with the Gegana Unit of Indonesian National Police, the terrorists were inspired by the acts of terror and bombs used by Dr. Azahari and the Al-JI organization which published online. The 2019 bomb attack has used the Flash Powder type as used by Dr. Azahari.

## **6 Analysis**

### **6.1. Causative Factor of Dr. Azahari Involvement in Bomb Terror**

The result shows that Dr. Azahari is not radicalized just because of his environment, even though he is in a radical environment. He also is not radicalized just because he faces some problems in his life. This is due to the fact that he is able to think rationally even though his feelings are vulnerable to being influenced. His ability to think rationally makes him capable of evaluating the teachings of Abdullah Sungkar. However, based on the data, Dr. Azahari can be radicalized, influenced, recruited, and involved in acts of terror because he faces many problems and, at the same time, is in a radical environment.

Based on the research data, Dr. Azahari was not indicated radically while working at Jakarta. This can be indicated from the way he dresses is not the same as how Al-JI organization members dress. Meanwhile, Wan Min stated in his document that Dr. Azahari along with himself took Bay'ah to Abdullah Sungkar to join the Al-JI. This shows that someone who is radical cannot be judged by the way he is dressed. After Dr. Azahari knew his wife was convicted of cancer, he diligently underwent the worship at the Islamic Boarding School where the place became the recruitment target of the Al-JI organization. Without his awareness, he underwent the religious classes which were used by the Al-JI organization to recruit their members. Dr. Azahari who was experiencing problems and being surrounded by the Boarding School environment finally gradually turned Dr. Azahari, who has been radicalized, to join the military practices run by the Al-JI organization. Later, he was also involved in the acts of terror. Being part of the organizational structure of Al-JI organization in the army makes him learn from the theoretical classes to the practical classes. Through these classes, Dr. Azahari gained his knowledge of how to make bombs and plan terror bombings.

Based on the foregoing, it is known that the factors that cause a person to commit an act of terror cannot be due to one factor only. There are internal driving factors, such as the psychological dimension (the situation after facing a problem) or motivation and also the pull factors that come from the environment. As Yusuf Anis said, "Dr. Azahari might not have been involved in acts of terror if he did not meet with us (the Al-JI organization) in Ponpes." This proves that, although the problem can affect him, but there must be the environmental factors that pull, and vice versa. If Dr. Azahari is having problems, but meeting a good group, there is a possibility that he will live a good life.

Based on the discussion, it can be seen that Dr. Azahari was involved in acts of terror by:

Being Affected → Being Radicalized → Do the Jihad → Committing Terror Acts

Dr. Azahari case proved that the recruitment process of the Al-JI organization was successful even though the target was people with high education.

## **6.2. Signature Bomb for Need of Achievement**

Based on the data, the bomb he made proves that he was an intelligent and skilled person. Dr. Azahari uses his abilities and skills to make the bombs according to his wishes and give his best to create the bombs that are more than the usual standard. He is also able to make bombs that have explosive power similar to the high explosive ones, despite using the low explosives. Dr. Azahari has his own mode of operation in making bombs, such as using power with at least two batteries, initiator with more than two, safety with more than two and flash powder for the explosives. The components of the bomb were designed in such a way as to create a high explosive power with the small risk of shortcircuit. Although, the shape of the bombs produced varies because they have to adjust it to the time and place of the bomb detonation. In each of his homemade bomb designs, the bomb expert at the Gegana Unit of the Indonesian National Police Headquarters always found a neat and beautiful circuit design. According to him, the bomb

made by Dr. Azahari has an aesthetic value, although it has no effect on the success or failure of the bombing. According to Douglas, J. & Munn, C. (1992), the signature shows the existence of themes, motivations, and personal needs of the offender, such as anger, wanting to get fantasy, etc. However, that does not affect the success or failure of one crime. Therefore, it can be concluded that a neat and beautiful circuit design becomes the signature of a bomb made by Dr. Azahari because it only represents his psychological needs and always presents in every bomb he made. The signature makes Dr. Azahari bomb to have differences and special characteristics compared to other bombs even though they use the same bomb component or have a similar design. This makes the authorities easily identify and recognize the homemade bomb so it is known as the signature bomb.

The signature bomb indicates the need for self-actualization and strives to gain recognition of his abilities. This is also similar with how he tried to get recognition from his father after being found lying about his failure in Australia. He tried with his ability and committed to improve himself. Finally, he returned to Malaysia with a bachelor's degree and was accepted at Reading University, London, to continue his master's degree. Later, he was promoted to doctoral education and returned to Malaysia with a PhD. This proves that Dr. Azahari is a person who does not want to be seen as a failure and has nAch to get recognition for his abilities. Based on the Theory of Need by McClelland, Dr. Azahari has a Need of Achievement motivator. Besides that, Dr. Azahari also has a Need of Affiliation. This is shown through the data that Dr. Azahari had social relations while he was in Australia even though he was a quiet person. However, due to his failure when he was studying in Australia, he struggled to get his father recognition, so he left all his social activities. This shows that the Need of Affiliation Dr. Azahari has is not much or not dominant compared to the Need of Achievement he has. According to McClelland theory, Dr. Azahari is someone who has Need of Power as Dr. Azahari tried to influence others by teaching some Al-JI members to make bombs, and he even makes books, so others can be influenced through his books. However, there are no data to show that Dr. Azahari tried to be a leader. It concludes that he may have a Need of Power, but it did not dominate him. Based on these analyzes, the dominant motivator in Dr. Azahari is the Need of Achievement.

## **7 Discussion**

The result of the research and analysis shows that the motivating factor that makes a person a terrorist is not only the need for affiliation or socializing and the need for strength but also the need for recognition. While, the pull factors can apparently be from an Educational Institution and Religious Institution. In addition, Ali Imron believes that the explosives used in bombing in Bali are very easy to obtain from retail and online stores. Even now, there are materials, that can be used to make bombs, sold online (Azzah, 2019). In his research, Azzah (2019) revealed that there was a misuse of Dual Use Chemicals by terrorist groups. He also concluded that the number of monitors and the area of surveillance in monitoring the explosives as a precursor of the bomb was still limited. Thus, the supervision needs to be improved by creating or developing policies regarding the supervision and distribution of chemicals sold in retail, online stores, and social media. The supervision is also needed in ports and airports to supervise the export and import materials.

Dr. Azahari skills in assembling bombs, was recorded and distributed to the Al-JI before he died in 2005. In fact, Dr. Azahari had directly taught the Al-JI members how to make bombs. This confirms that there are other parties who have learned how to make bombs by Dr. Azahari.

Kombes Pol. Zackaria Sembiring believes that the sources to learn how to make bombs are possible in the military, through books, and also through the media. Prasetya, et al (2017) also revealed that the training on how to make bombs can be accessed through social media. This shows that the lesson for making bombs by Dr. Azahari can be spread through online media too. Based on Kombes Pol. Zackaria Sembiring, the Indonesian Ministry of Communication and Information (Kominfo) was constrained to block the media containing the tutorial on how to make bombs. This happens because that they cannot block Youtube, while the tutorials on how to make bombs can be accessed on Youtube. As more and more people learn how to make bombs, if there is no control over chemicals as bomb precursors, the misuse of chemicals will continue and become increasingly difficult to predict. Prasetya, et al (2017), in their research, concluded that the Indonesian National Police had made efforts to prevent and take legal action, but it was not optimal because there were no specific regulations governing the distribution of information between services.

Dr. Azahari case points out that highly educated people can also be involved in acts of terrorism. Then people seem to be able to produce bombs that have a large explosion effect and a low failure rate. In addition, individual like Dr. Azahari is able to share his ability to make bombs by writing books or teaching others on how to make bombs. Thus, people like him need to be anticipated, especially when they are having problems and want to find a solution, so that they are not trapped or influenced by terrorist groups and being used in terrorist activities.

To anticipate individuals who is similar to Dr. Azahari and potential to get involved in terror, the cooperation from related parties is needed, and we need to provide guidance or provision through seminars or other activities. The material of the activity must also be compiled and should lead individuals to consult with several different competent parties when facing problems. If individuals want to study more about religion, it needs to be guided to learn from a number of different religious teachers. This is intended for someone to compare one source with another in order to be able to judge which ones are rational and relevant. The method is designed so that the individuals can respond with appropriate behavior and not be deviated from the teachings of actual religion.

## **8 Conclusion**

Based on the analysis and discussion above, the researcher can conclude several things, namely:

1. Dr. Azahari was radicalized, recruited, and involved in acts of terror because of the driving factor which is the problem he was facing and the environmental factor, namely the Ponpes Lukmanul Hakim as the target of Al-JI to recruit members. In addition, in Dr. Azahari case, it points out that someone who is radical cannot be judged by the way he or she dresses or the physical appearance. Moreover, facilities in the Educational Institution can also be used for terrorist activities, such as those carried out by Dr. Azahari.
2. Dr. Azahari has an operating mode in using and designing bomb components to produce high explosive power even though he uses the low explosives. His bombs also had a very low risk of short-circuiting, and he always made sure they could explode successfully. In addition, the homemade bomb has a signature which is the neat and beautiful circuit design. Thus, the bomb he made has an aesthetic value even though it has no effect on the success or failure of the bomb explosion. Signature on Dr. Azahari

bomb made the bomb different from other bombs even though the bombs used the same bomb components or had a similar design. Because of that, the authorities easily identified and recognized Dr. Azahari bombs. Furthermore, the signature bombs are made from raw materials that are easily obtain at retail stores and including social media because there is no optimal monitoring.

3. A Highly educated person can also be involved in terrorism, especially in making bombs. Individuals like Dr. Azahari is more dangerous because it is able to make explosive bombs with high level of success and low level of short-circuit risks. They are also better able to think rationally to ensure the bomb explodes successfully.

## 9 Suggestions

Based on the conclusion, suggestions that can be given are:

1. Renewing the surveillance policy on chemicals that can be misused by terrorist groups and expanding the area of surveillance including online media.
2. Improving coordination between relevant agencies, including the information distribution between services and their supervision.
3. Carrying out the prevention of radicalization by involving relevant agencies according to their fields of work by studying the recruitment patterns carried out by the terrorist groups, both directly and through online media. Then providing a guidance through seminars or other activities to enlighten employees, students, the public, and even the lecturers in order not to be radicalized.
4. Creating a program to prevent the formation of terrorists based on the characteristics of the person (including age, education, family issues, and social environment).

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