

The Influence Of Interior Design To Prevent Crime Actions In Automatic Teller Machine (ATM) Room

Imtihan Hanom^{1,a}, Rizka Rachmawati^{1,b}, Titihan Sarihati^{1,c}, Santi Salayanti^{1,d}

¹Interior Design Study Program, School of Creative Industries, Telkom University, Bandung, Indonesia

^a.imtihanhanum9@gmail.com, ^b.rizkarachmawati@gmail.com, ^c.titiansarihati@telkomuniversity.ac.id, ^d.salayanti@gmail.com

Abstract This study departs from the phenomenon of increasing crime that occurred at the Automatic Teller Machine (ATM). The rise of crime at ATMs does not only occur in Indonesia, but almost all over the world. Crimes at ATMs have occurred from the very beginning the ATM was introduced to the public, until now. Crimes that occur at ATMs are mostly in the form of robberies which sometimes lead to murder. This study looks for interior variables that can increase the sense of security of ATM machine room users so as to suppress the intentions of criminals to act in them. Interior variables are obtained from several theories related to the prevention of criminal acts at ATMs, human safety perception and recommendations related to the prevention of existing crime. The results obtained from a number of recommendations related to crime prevention and theories related to the perception of safe humans that produce two main interior variables, namely; visual openness and territoriality. The design of an ATM room using these two main variables is expected to be able to provide a sense of human security when they want to visit and / or are in an ATM room. The results of the study are expected to provide an overview of the form of ATM space that can increase the user's sense of security so that it can reduce the occurrence of criminal acts. This research is also expected to be an ATM room design standard to suit human basic needs, one of which is security.

Keywords Secure Perception, Crime Prevention, Interior Design

1. Introduction

Automatic Teller Machine (ATM) is a facility intended for all bank customers that functions to withdraw cash quickly and easily. ATM has become something that is needed by the community so that the ATM is very easy to find anywhere. Tummala (2014) said, around more than 3 million ATMs have been spread throughout the world. With the increase in the number of ATMs, it also has an impact on increasing crime, which in turn causes losses both from banks and bank customers. Tummala (2014) added, to create a secure ATM environment, maintain the image of the bank and protect bank assets, all organizations involved, institutions, and researchers, must develop and take steps to meet the challenges that occur, one of which is crime at the ATM.

Many studies have played a role in preventing crime in ATMs, one of which is research conducted by Tummala (2014). Research by Tummala (2014) focuses on improving the systems contained in ATM machines with GSM technology, sensors, and so on. Several other studies also conducted research like what Tummala had done and turned

out to only focus on the system that is inside the ATM machine. Meanwhile, to prevent the occurrence of criminal acts, many other aspects are still needed that can also help prevent the occurrence of criminal acts in ATM machines. One aspect that plays a role in preventing crime is the infrastructure that houses the ATM room. Based on this, this study focuses on how infrastructure can play a role in preventing crime.

The main factor causing high crime in ATM machines is the ease of accessing ATM machines for 24 hours. While other factors, the infrastructure contained in the ATM machine makes it easy for criminals to launch their actions. Most of the neighborhoods where the ATM room is located have poor infrastructure, so that the ATM room looks dirty, gloomy, spooky, and uncomfortable. The infrastructure in question is that in a building both interior and exterior can play a role in facilitating the occurrence of human behavior, but also can be a barrier to human behavior (Laurens: 2005). Infrastructure can be a barrier to the occurrence of human behavior, one of which is that it can be a barrier from criminal opportunities by perpetrators of crime.

The rise of crime in ATM machines one of which is a problem involving the existing infrastructure. In accordance

with the theory of Laurens (2005: 2) which says that some of the events that are around us are the result of a design that does not discuss the users. User needs related to human needs, which we can conclude on the ATM central machine the most important need is a sense of security and comfort. Maslow (in Laurens, 2005: 5) For this reason, this study will look for any variables that can affect the sense of security and comfort of humans using ATM machines.

2. Theoretical Background

2.1 Automatic Teller Machine (ATM)

Automatic Teller Machine (ATM) is a tool to facilitate customers making transactions or withdrawing cash. Among other conveniences, namely, ATMs can be easily found, no need to queue for long (as in the Bank), fast transactions, easy payments and others. With so many ATM machines spreading in all directions, it turns out that they are used by criminals to launch criminal acts. Noted there have been acts of crime in the ATM machine rooms around the world. The biggest crime is theft that sometimes leads to murder.

The rise of crime in the ATM machine room is also due to the features of the ATM machine itself, such as; can trans-fer shares, pay bills, pay for tickets, and so on (Rzyeki; 1998). Data from the Toronto police state that seventy per-cent of crimes in the ATM machine room occur at midnight (Rzyeki; 1998). Rzyeki (1998) also added that the most victims of this crime were women and visitors who were alone. According to Barry Schreiber, Professor of Justice at St. Cloud State University in Minnesota, ninety-six percent of ATM crimes are committed when there is only one per-son at the ATM (in Rzyeki: 1998).

Based on the Bank's administrative agency (ATM Safety and Security Recommendation - according to the UCA Police Department), around 40% of crimes occur at 19:00 until midnight. So it can be concluded that the most vulnerable hour to come into the atmosphere is at that hour.

2.2 Relationship Between Behavior and the Environment

Humans and the environment have attachments that produce human behavior towards others and the environment. Laurens (2005) says that the results of architectural design can be one of the facilitators of behavior, but it can also be a barrier to behavior. With the basic premise that architectural design is intended for humans, then to get a good design architects need to understand what are human needs (Laurens; 2005). The need referred to in this study is the need for a sense of security and comfort when the user is

transacting in the ATM machine room.

A sense of security (secure) is one of the hierarchical list of basic human needs. Some experts who make a list of basic human needs hierarchy include Maslow, Ardrey, Leighton, and Petterson stating that security is one of the basic human needs (Laurens; 2005). In this research, it is related that criminal actions can be avoided by applying basic human needs as a design function in a building, especially in public buildings. Assuming that human action is influenced by several factors both environment, culture, and

experience, then in this study will examine how the formation of design that will shape a person's behavior to match the expectations of the wider community later.

This research seeks a role in ATM machines that are important to humans in design decisions, it is the main focus of design. Laurens (2005) also put forward the fact that it has characteristics including:

- The behavior itself is visible, the cause of the behavior that occurs directly may not be observable.
- Behavior recognizes various levels, namely simple and stereotypical behavior, such as the behavior of single-celled animals; complex behavior such as human social behavior; simple behaviors, such as reflexes, but some also involve higher biological mental processes.
- Behavior varies with classification; positive, effective, and psychomotor, which shows the nature of rational, emotional, and physical movements in behavior.
- Behavior can be realized and also can not be realized.

2.3 Perception of Feeling Secure

The perception of human security in design research as a media to prevent crime in the ATM machine room is how to create a design that is able to foster a sense of security for its users. The sense of security in question is a sense of security to be able to monitor all directions, safe from attempts of criminal acts such as safe materials so that criminals cannot be used as weapons, spaces that are not hidden, bright colors so as not to seem bleak and so on (Hanum: 2013) . A sense of security related to the prevention of criminal acts can be presented through visual openness, and territoriality.

2.3.1 Visual Oppenes

According to Pinsly (2011) Visual openness are a measure of openness to views. Previous research conducted by Pinsly (in Pinsly; 2011) there are 3 factors that affect openness are:

- The size of the building facade that affects the ability of humans to see inside the building.
- The ability of humans to be able to see from the floor position in high rise buildings.
- The ability of humans to be able to see from the distance the main building with the position of the building in front of it.

Another thing that can also affect one's views into a building is the distance between buildings (Pinsly: 2011). The closer the distance between buildings, can reduce the ability of humans to see into a room, and vice versa. In addition to considering the distance aspect, the height of the building is also an aspect that needs attention. By considering the location of the building, the size of the building both the height and width of the building is also a determining factor in one's ability to see inside the building (Pinsly; 2011).

Pinsly (2011) added that a view that is perpendicular to the building leads to a high value of openness. Research conducted by Pinsly (2011) also found that H-shaped buildings with narrow distances have a low level of openness. Buildings that have a high level of openness when they are close to public open spaces, such as a large field or playground. But according to Pinsley (2011) a large

field or playground should not be given plants with thick leaves or tall trees because it can obstruct the view of humans into a building.

2.3.2 Territoriality

Territoriality is also related to personal space as a control for incoming disturbances. Hall (in Laurens: 2005) divides the distance into 4 stages, namely;

- Intimate distance, close phase (0.00-0.15 m) and far phase (0.15-0.50), usually for lovers, friends and family relationships.

- Personal distance, close phase (0.50-0.75m) and far phase (0.75-1.20 m), usually the distance for two friends or people who are already familiar with each other.

- Social distance, the near phase (1.20-2.10 m) and the far phase (2.10-360 m), are normal limits for individuals with similar activities or the same social group.

- Public distance, the near phase (3.60-7.50 m) and the far phase (greater than 7.50 m), for a more formal relationship such as distance with the speaker.

From the explanation of the personal space, it can be said that the ATM machine room is a public space but the distance of human interaction that occurs in it is an intimate distance. This certainly makes people feel safe and comfortable to be reduced and disturbed. To be able to help people feel safe in a public facility with limited space, a sociofugal space is needed. Sociofugal space is an order that is able to reduce the occurrence of social interaction between humans (Laurens: 2005). In the end, this research will also consider sosifugal space so that human interaction within an ATM machine room can be in accordance with these human needs.

In connection with this study, ATM machine rooms that have walls, floors and ceilings have indirectly imposed territorial limits on its users. But the emergence of a large ATM machine room with several ATM machines inside makes this territorial boundary a little ambiguous. There was an error of perception of the territory of all users because all felt they had the same rights and interests in the room. For this reason, this research needs to be carried out in order to find out how to form an ATM machine room that suits human basic needs.

2.4 Guideline

The number of problems related to crime that attacks the public sphere, making a lot of research popping up that produces recommendations as a precaution against crime. Some of the recommendations, one of them is CPTED, which is an institution that provides several provisions that can help humans to feel safe in a building.

2.4.1 CPTED

CPTED was originally created and formulated by criminologist C. Ray Jeffery in Chicago. CPTED (Crime Prevention Trought Environmental Design) is a provision that has been made by the NCPI (National Crime Prevention Institute) which aims to provide direction and recommendations to avoid criminal acts (in Hanum: 2013). CPTED itself has principles that must be applied in an ATM machine room, namely:

Natural Surveillance

This is related to the problem of human ability in his view to be able to see the state of the ATM and its surroundings, such as the openness of the building's facade to be able to clearly monitor inside or outside the building, the availability of large parking lots, the condition of the surrounding population, surrounding street lights, and so on. This plays an important role, because if it is not assessed from the beginning, then in the future, there will be many criminal actions that arise due to the large opportunities available.

Territorial reinforcement.

Designing a building based on need is very important to do. When someone perceives to be supervised or clearly visible what activities they are doing, then they will always be careful. This is exactly what wants to be raised in the ATM machine room so that it can reduce the occurrence of criminal acts by reducing the opportunity or intention to commit criminal acts psychologically.

Natural Access Control

This is a special concept to suppress the occurrence of criminal acts and provide an overview of the risks that will occur.

Maintenance

This aspect is related to the problem of managing the ATM machine room so that it can continue to look good and avoid the gloomy impression that causes consumers to be reluctant to use the ATM. Gloomy impression will also indirectly make a person's perception feel insecure.

2.4.2 ATM Crime Prevention

Ryzeki (1998) has conducted research that produced recommendations to prevent the occurrence of criminal acts in the ATM machine room. Some recommendations related to the physical environment include;

- Looking for an ATM machine that feels safe, even though it has a great distance.

- Using an ATM that is located in a densely populated area, has bright lighting, clear open, and if necessary which is adjacent to a convenience store or minimarket.

- Be careful with the form of space that is not open, allowing the perpetrators of crime are lurking in you.

- Do not open the door of the ATM machine room.

- Don't use an ATM when it's dark.

While the recommendations according to UCA (University of Central Arkansas) used by the Arkansas police include;

- Use the ATM machine room which has good lighting.

- ATM rooms must have doors, not open rooms.

- When you are waiting in line, try to position yourself behind the person who is waiting in line.

- When you are queuing and someone approaches you suddenly, avoid interacting.

- Use an ATM when it is still light.

- Views into atmospheric space must not be obstructed by shrubs.

3. Research Methodology

The method used in this study is a descriptive research technique with purposive sampling. The research sample was taken purposively in several ATM rooms located outside the main building. The analysis is obtained by summarizing the guideline and related theories that produce 2 independent variables that affect the dependent variable. The dependent variable in this study is human safe perception, while the independent variables are visual openness and territoriality

4. Result and Discussion

The design of space in the Automatic Teller Machine that currently exists is not enough to answer the problems that occur therein. The design of an existing ATM room can sometimes even be a trigger for a crime, such as; the lighting is not bright enough especially at night, the facade is covered by stickers, advertisements, and so on, and also the color of the room does not give visitors a sense of security.

In addition to the spatial environment which is not yet suitable enough, laying out the existing space is also considered to be less effective when long queues occur. If there is a long queue, then the ATM facade is partially covered by the queue so that the ATM room cannot be easily seen from outside. Some ATM rooms also only have one access to enter and exit, so that in the event of a criminal act, the perpetrators of the crime easily block visitors' exits.

In this design, the design of the ATM room becomes a stimulus received by ATM visitors, giving rise to an attitude. It is hoped that by giving a stimulus to the design of a good ATM room it causes a brave attitude to visit the ATM room, especially at night. The emergence of this courageous attitude is also expected to make the perpetrators of crimes feel more supervised. Making ATM space design stimulus focus on several interior variables. These variables are obtained from several guidelines and related theories. After summarizing some guidelines and related theories, it is found that 3 main interior variables are expected to provide a safe perception of humans in an ATM room, namely; visual openness, and territoriality.

Visual openness variables related to CPTED recommendations are natural surveillance and maintenance and also theories related to increased security, namely the ability of humans to be able to monitor the surrounding area. Based on this, the design of ATM rooms is related to the level of clarity or openness of view from outside in, or vice versa. To be able to fulfill this, then there are several things that need to be considered in the design, namely;

- The queue pattern must not disturb or cover the ATM room facade, so that the layout of the ATM room is designed according to their needs, that is, it does not interfere with the view of the ATM room facade.

- The position of visitors to the ATM room must not turn their back to the ATM room facade, because visitors can unconsciously be targeted by criminals. It also can make visitors unable to monitor the situation outside the ATM space which results in criminals feel they have the oppor-

tunity to launch the action. The position of the ATM visitor is related to the location of the ATM inside the room.

- Maximum ATM room facade display is 25% covered by advertisements, stickers, etc. in accordance with the guidelines of CPTED related to natural surveillance.

- Facade openness must also be felt remotely, so that the environment in which the ATM machine room is located should not be obstructed by shady trees and shrubs. There must be a significant distance between the ATM machine room and the parking area so that the openness of the facade is clearly felt by visitors even from far distance. Some recommendations from CPTED state that there should be a large field between the ATM machine room and the vehicle parking area. This is related to the attitude of ATM visitors to dare to visit the ATM room while still in the vehicle, especially at night.

- ATM machine rooms must be supported with bright lighting in accordance with Ryzeki (1998) theory and recommendations from the University of Central Arkansas.

The territoriality variable is related to the ability of the ATM room to be able to provide large territorial bubbles for ATM visitors when using the ATM room. By enlarging the territory bubble, it is hoped that visitors can more comfortably carry out financial transactions without fear and worry. To be able to increase the territorial bubble in the design of this ATM room need to pay attention to several things, namely;

- The design of the ATM room is made with a 1: 1 ratio between the ATM machine room and the number of visitors.

- There is a real space limit between visitors who are conducting financial transactions with visitors who are queuing.
- ATM rooms have a minimum size of 2m square for the use of 1 visitor (Mundofar: 2014). With the minimum space limit, visitors who are in the ATM room will not feel cramped / claustrophobic when using it.

- Territoriality is also related to the escape route variable. That is because with the existence of a clear escape route access, visitors will make access in and out as their territorial area. In this study, escape route is related to the ease of escape when ATM room visitors become victims of crime. CPTED explains that it is best to make different exit and entry access in a room. This is expected to make it easier for ATM room visitors who are victims of crime to escape when one of the accesses is blocked by a criminal. In addition, making access in and out of different also indirectly can suppress the intention of the perpetrators to commit a crime because it can not block the way out of visitors.

5. Conclusion

Based on analysis and field studies, the current form of ATM rooms is still often the target of crime. This was apparently caused by the shape and position of the space. The shape of space is related to the extent to which humans can comfortably use that space. While the position of space is related to the surrounding environment. The environment gives a big influence to increase the perception of human safety because the environment is felt to be a medium of information in the human brain. For this reason, the shape

of the ATM space and environment, if engineered to produce a stimulus in the form of a design, will have an effect on reducing crime through increasing the perception of safe visitors to the ATM room. After conducting a study related to the prevention of criminal acts in the ATM room, this research did not just stop here. This research is expected to be continued to validly test the percentage of visitors' safety when confronted with the ATM room design stimulus. In addition, this research can also be associated with public spaces that require design variables as one of the prevention media of crime.

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