

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Theoretical Framework**

##### **2.1.1 Defense Science**

The book "Tentang Ilmu Pertahanan" written by Supriyatno (2014) explains that defense science does not only discuss strategy and military science as well as studying the use of armed forces to fight for or defend the political interests of a country. Defense science studies the management of national resources during peace, war, and post-war, addressing threats from within and outside the country, encompassing military and non-military domains to safeguard territorial integrity, sovereignty, and national safety for overall national security.

Defense science is a reflection of state behavior to maintain and develop the sustainability of the country concerned. Defense Science is also the science of all aspects related to security on a national scale that is attached to the objectives of implementing national defense. As the forerunner of defense science, military science, and war in the context of developing organizational, military strategy and tactics in the end in order to achieve the interests of the state.

In the book he also explained that defense as a science is of course born from various events that have been experienced in the past, which are then studied and developed into a strategy, increasing into the science and art of war which in the end becomes the science of defense along with other sciences. In addition, Defense Science is also a science that is applied to maintain the safety of the entire nation in order to realize national security

In the Law of the Republic of Indonesia (UU RI) Number 3 of 2002 concerning national defense, it is explained that the universal defense strategy is a derivative of the universal defense system which is axiological, the Republic of Indonesia Law is a form of defense science. In the same context, namely epistemologically, defense science is multidisciplinary, and

transdisciplinary. Meanwhile, from an ontological perspective, defense science is a science that studies why and how the existence of a country can maintain its sovereignty, territorial integrity, and the safety of its nation from all kinds of threats, from within and outside the country.

With these constructions of ideas, it can be concluded that national defense is carried out with the aim of maintaining and protecting state sovereignty, territorial integrity, and the safety of the entire nation from all forms of threats. This is realized through the implementation of defense through efforts to build and develop the capabilities, and deterrence of the state and nation, as well as overcoming every threat.

Thus, this research makes defense science the main theory or grand theory of all theories that will be used. This use is intended to understand the construction of the application of defense science which studies and examines how to create and implement defense policies into defense strategies.

### **2.1.2 Defense Management**

Managing a country's defense system effectively requires a comprehensive understanding, Halstead (2015). provides a statement that a defense strategy must be based on a clear national security policy that determines the overall goals and objectives of the defense sector. This policy must consider internal and external factors that can threaten national security. From these factors emerges the urgency of why defense management is needed.

In the book "Defense Management" written by Sarjito (2023) found that Cranfield University developed defense management as an art and science to ensure the provision of effective and efficient defense and security capabilities to meet current and future needs, through the strategic integration of people, processes, and technology, in the right organization (Cranfield, 2021). This statement highlights the importance of a holistic approach that includes various elements of defense management, including

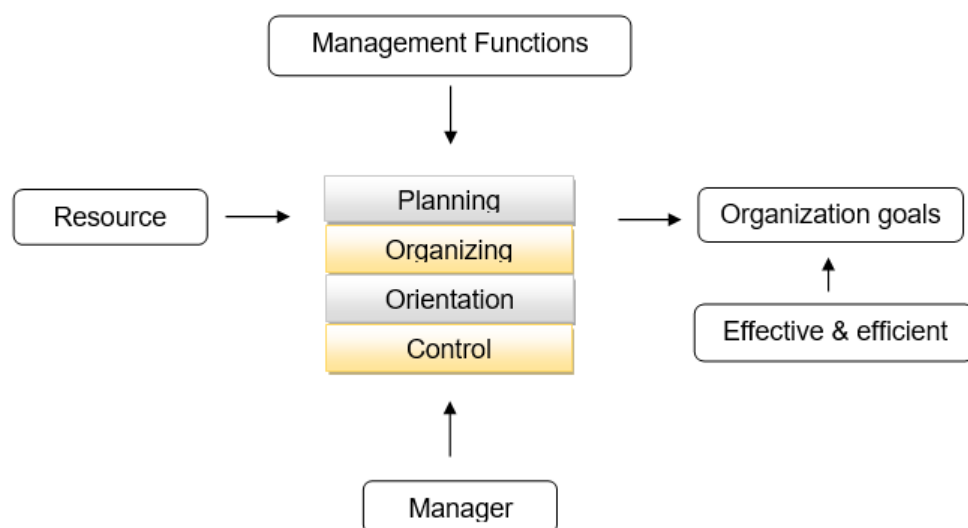
strategic planning, resource allocation, technology deployment, and organizational structure. In addition, Sarjito defines that defense management is the practice of organizing, planning and coordinating activities within a country's defense sector. Universally defense management is also explained by Tagarev, Fluri & Marcu in the book "Defence Management: An Introduction" (2009) can be explained that this only summarizes the idea that defense organizations need to apply defense policies in practice, and in their efforts to develop and preserving planning mechanisms, support systems and infrastructure.

Defense management is a broad as well as complex topic that includes the specialized subjects of human resources, organizational behavior, finance, procurement, logistics, strategic theory that can and has been adopted by military organizations. The typology of defense management contributions needs to include domestic defense management theories that are acceptable to a particular country. Given the dynamics of theoretical development, theoretical additions to domestic innovation and adaptation will emerge. It is also possible given the nature of the topic that radical theoretical additions and acceptance of the theoretical framework will occur. Nonetheless, any theory will consist of either narrow or broad applications, as well as content that ranges between concrete and relative distinctions .

Additionally, Supriyatno and Yusuf (2018) have defined that defense management is the science and art of formulating a set of policies, strategies and functional decisions for defense organizations resulting from a management process by sources. human resources and stakeholders to prepare national potential and strength by relying on managerial actions, monitoring and evaluating, determining the performance of defense institutions in the long term so that they are able to face types of military and non-military threats, forming universal defense in the context of implementing national defense based on ethics and morals.

The implementation of defense management must take a broader context approach, not only limited to overcoming narrow security threats, namely traditional security threats or military threats or wars carried out by the armed forces of one country against other countries, which is called defense management in a broader context. The main rules that discuss defense management are in Republic of Indonesia Law No. 3 of 2012 concerning national defense and Law 34 of 2004, it is explained that "national defense management is all activities at the strategic level and control of national defense".

A country certainly wants its defense sector to have capabilities and modernity that are more advanced than surrounding countries, but these countries are faced with limited resources. Therefore, defense management is considered an appropriate concept for managing national resources to become a source of strength in the defense sector which can be utilized effectively and efficiently in the interests of national defense.



**Figure 2. 1 Management Process**

Source: Hanafi (2019)

Figure 2.1 describes management processes and activities in an organization that acts as troubleshooters within an organization. The

organizational device for carrying out all processes in it is the manager or one of the leaders in the organization. The mention of organizational leaders will be adjusted to the needs of the organization in certain fields. When carrying out management functions, leaders are required to be able to solve problems in an effective and efficient way. In this case, what is meant by efficiency is the organization's capacity not to misuse resources excessively so that the distribution of resources allocated by the organization is right on target.

Discussing effectiveness in this context is problem-solving and work processes that are appropriate and right on target. An organization will be considered effective when its goals have been fulfilled. In addition, organizational structure also influences organizational performance patterns to implement certain management patterns. Every field and industry in the organization has a variety of structures, from relatively loose to tight. This is influenced by the urgency of the goals and also the responsibilities carried out by an organization (Hanafi, 2015). The Defense Management functions mentioned in the book *Introduction to Defense Management* by Supriyatno et al. (2019) are as follows:

a. Planning function

The planning function is the main and important function in management. To carry out planning, it is necessary to have information available or, more precisely, accurate intelligence, namely trusted sources and content. To analyze this intelligence or information, it is necessarily to recruit individual who can fulfilled the below requirements:

- 1) Ability of analytical thinking.
- 2) Ability in forecasting of future possibilities, for the short term and medium term.
- 3) Ability and courage to make decisions.

b. Organizing function

The Organizing Function, namely the defense/military organization as a public organization already existed when the state existed; and existing organizational structures or forming a new organizational structure as a bureaucratic organization to run the organization in the best way. In addition to the organizational structure, what must be considered is how to allocate and arrange resources, which include:

- 1) Obtain the best combat equipment and maintain accountability in defense spending;
- 2) Making acquisitions;
- 3) Getting the best personnel including training (human resource management/HRM) including future career development that has an impact on the organization;
- 4) Determining process;

c. Directing Function

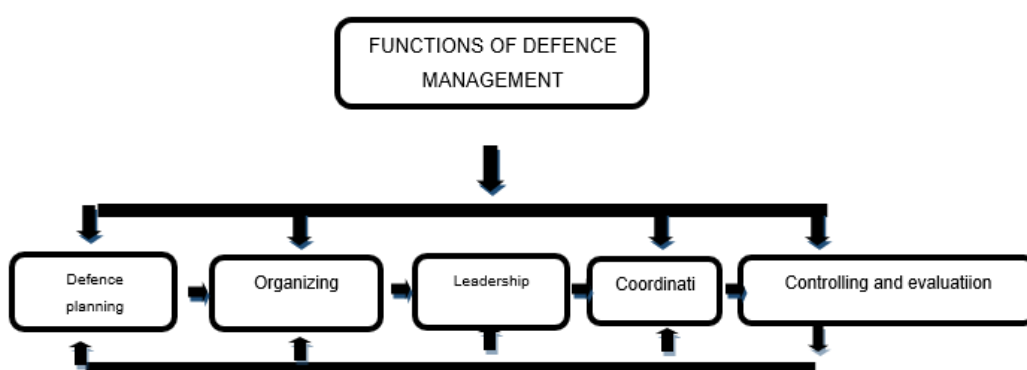
The function of directing is almost the same as leading or commanding, providing guidance to improve performance or commanding an operation, or usually also called directing in actuating, including accepting responsibility. be responsible to subordinates and assign subordinates to carry out military operations and military operations other than war; Motivate others with respect, objective and fairness in mind.

d. Coordinating Function

Coordinating function, namely linking and synchronizing management functions to explain their relationship to the planning function, avoiding conflict and overlapping, emphasizing time; consider project management tools and techniques, and establish communication;

e. Controlling Function

Controlling function, which of course starts from planning, including providing monitoring of performance quality standards, making reasonable efforts, and taking corrective action as early as possible against the possibility of a waste of resources, efforts, and of course time. So that it is hoped that it can provide input to maximize and streamline every operation of the armed forces.



**Figure 2. 2 Functions of Defense Management**

Source: Hiatt (2006)

The concept of defense management varies widely, including science and art, business, strategic leadership, governance, bureaucracy, strategic environment, strategic resources, friendship, and contextual. The concept of Defense Management still has the opportunity to be developed further, its scope may increase or decrease due to the breadth of the Defense Management discussion, and until now there is no other organization that matches the Defense and Military Sector organization.

### **2.1.3 Awareness Theory**

The term awareness, which is formed from the combination of the English words "ge" (an associative prefix) and "war" (wary), refers to the subject aware. According to the Merriam Webster Dictionary, being aware is defined as "having or showing realisation, perception, or knowledge" and

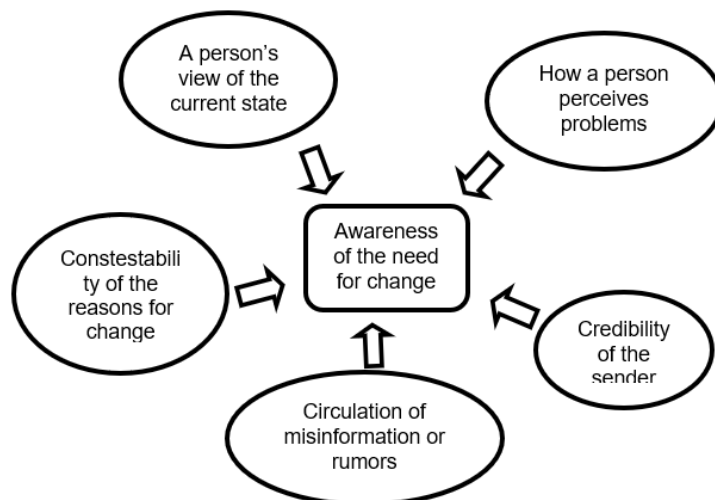
is connected to "vigilance in observing or alertness in drawing inferences from what one experiences." Additionally, awareness is also a neuroscience process since Charlton (2000) stated that awareness can be defined as the capacity to focus the attention on particular features of the environment while choosing from a variety of experienced stimuli and storing the chosen stimuli in working memory.

In management science generally and specifically in defense management, managers in organizations will be faced with managerial changes. To be able to successfully achieve organizational goals when faced with change there is a goal-based change management model that can be used to guide individual and organizational change. ADKAR (Awareness, Desire, Knowledge, Ability, Reinforcement) is a change management model developed by Jeff Hiatt in the book "ADKAR, A Model for Change in Business, Government and Our Community" which was published in 2006. This model is different than many other change management models because it focuses on guiding change at the individual level. Jeff Hiatt developed the ADKAR model of change first in the 1990s. This model is based on the analysis of successful and unsuccessful changes in hundreds of organizations over several years. The ADKAR model is based on the fact that the main determining factor in whether a change is successful is the individual. This model emphasizes that successful change only occurs when every member of the team can change.

Starting from awareness because the first step to bring major changes through strong foundation of awareness. Awareness is the first element when someone realizes and understands the nature of change, why it is needed and the risks that will come if there is no change. Hiatt (2006) explained a study case discuss about pineapple farmers in Ghana refuse to apply a code of ethics to their crops. This code of practice is a technique and method of growing crops that aim to improve the overall health and safety of products and related processes.

An awareness campaign was initiated to inform farmers that the state will not buy agricultural products without adherence to a code of conduct due to the fact that a sizeable buyer prefers UK agricultural markets due to their adherence to a code of conduct. Building awareness of the need for change is the first step in implementing managerial change and meeting the human need to know "why" is an important factor in managing change.

In a 2005 study of 411 companies undergoing major change projects, the most frequent reason for resistance to change was a lack of awareness of why the change was necessary. Project managers belonging to this group who propose major changes state that employees and managers alike want to know the business reasons for the change so they can better understand the change and align themselves with the direction of the change. When an organization has a high degree of control over individual actions and choices, whether through circumstances or collective agreements, this viewpoint may not be a barrier to change. For example, medical first aid officers and firefighters have established clear protocols and chains of command. Whenever an emergency dictates a change in their response, rescue workers don't stop asking why. Likewise, when the army operates in a crisis situation, the nature of the military's long-held relationship allows compliance to change quickly. However, this extraordinary and time-critical situation is more the exception than the rule.



**Figure 2. 3 Factors Affecting Awareness**

Source : Hiatt (2006)

Figure 2.3 explained the factors that influence awareness to make a change. The first thing regarding a person's view of the current state of affairs it is meant that there are individuals who strongly support the current state of affairs and who have invested a lot of time, energy or money in the current way of doing things may initially deny the reasons for change or discredit the reasons in favor of such change. On the other hand, people who are strongly opposed to the current state of affairs may use reasons for change as support for their resistance.

Hiatt (2006) added that when individuals are dissatisfied with their current situation they may use awareness messages to justify their position in the past, even though this is not related to the changes that are occurring. How people react to the awareness of these messages, and the amount of resistance they express, has a lot to do with how they feel in the moment. The more comfortable people are with their current conditions, the more likely they are to ignore reasons for change. The more dissatisfied they are with the current state of affairs, the more likely they are to listen to and internalize the reasons for change.

This second factor relates to a person's cognitive style and how they internalize new information against the background of their current perceptions. Dr Michael J. Kirton, in his book *Adaptation-Innovation*, writes

about two cognitive styles of business managers on a spectrum from more adaptive to more innovative. Adapters more readily anticipate challenges and threats from within the system (often by devising, for example, appropriate timing, plans). to economize, downsize, etc.), whereas innovators are better prepared to anticipate events that may signal or threaten from outside, such as early signs of changes in tastes and markets or significant advances in technology that have not yet been fully exploited. In other words, employees whose are more adaptive are more alert to internal threats. Employees with a more innovative style are more aware of outside drivers of change. Kirton goes on to say:

“In the study, it was noted that managers tended not only to miss some of the cues others got, but also to find other people's warnings annoying and annoying to the 'real problem' (that is, the things they could do were obvious)”

This “style” factor relates to the way individuals approach problems and the way they internalize and evaluate warnings that change is needed. Each of us has a unique way of processing information and solving problems. We each handle things in our own way and at our own time. This “style” factor suggests that broad and general communications may not always create awareness of the need to change communications. For example, an awareness message that focuses on threats from within a system might not work well with a Kirton Innovator message, while a message that focuses on external cues might upset a Kirton Adapter.

The credibility of the sender of the awareness message has a direct impact on the way a person internalizes the information. Depending on the level of trust and respect towards the sender, the recipient of the message will see the sender as either a trustworthy source or someone who cannot be trusted. In the workplace, employees have special expectations regarding communication around change. Messages about why the change was made and how the change aligns with the business strategy are expected from people close to or at the top of the organization. Messages

about how the change will impact employees locally and how the change may impact them personally are immediate supervisors.

People will consider the message against the background of the organization's track record of implementing change. If the organization has a history of false warnings or failed changes, then individuals will tend to ignore new information changes even if they pose a real threat. For example, a community exposed to frequent storm hazards as mentioned in the New South Wales case study may not heed awareness messages if the previous two messages or three warnings turn out to be false alarms. Regardless of the true nature of the reason for the change, this perception of the credibility of the messenger can greatly affect one's willingness to acknowledge the awareness message. In some cases the individual will not believe the reason for the change or will not take it seriously.

The fourth factor relates to whether there is distorted or incorrect information in the background conversation. For example, if a business manager withheld information from employees about the change, and rumors have spread among employees, those rumors may distort the facts and have created barriers to building awareness. Employees may have difficulty separating real information from false or distorted information, and they are more likely to listen to rumors than their own. Supervisors may spend more time correcting misinformation than they should spend communicating the correct information first.

The final factor that can influence awareness building is the debatable reasons for change. Some changes will have external, observable reasons that are hard to argue with. This condition occurs more frequently in changes that are a reaction to external events or trends, or are driven by forces outside the organization. For example, changes made inside nuclear power plants to comply with new waste disposal regulations have external drivers for those changes. The reason why the change was needed was compliance with a new law. The risk does not change including fees or penalties. Another example is a company changing their product or

service offering in response to declining market share and declining revenue.

Awareness involved complex cognitive process that make humans understand their surroundings and adapt to it. Awareness also contains a set of informations regarding the past behaviour, current state and future options available so that an individual is able to perceive the state and changes since in the perspective of psychology, by being aware means reducing the characteristics of people's collaboration. Gross (2013) mentioned that from years of reseach taken from various studies it can be found some helpful insights into how awareness was created and the mechanisms are :

- a. The selection of information types that are beneficial
- b. The distribution tactics
- c. Methods/techniques to represent the informations for awareness mechanisms

Interest in awareness-related themes is sparked by the fact that successful cooperation is increasingly recognised as requiring support for awareness. Additionally, (Collazos et al., 2019) encountered the taxonomy components of awareness :

- a. People
  - 1) Social norms, conventions and roles
 

Different organizational structures decides how individual organize themselves (e.g hierarcical, subgroups, communities, etc). Roles, obligations, social conventions, and etiquette are established by these agreements. People can facilitate coordination, cooperation, and collaboration by adopting explicit or implicit norms or protocols when they become aware of such a framework, regulating their interaction accordingly (Carroll et al., 2003) These structures can be formal and very detailed, like in a workflow (Botha & Eloff, 2001) informal, like in community or social networks, or

they can be created ad hoc as when individuals on a community interact. Such structures may change over time (people may be given new roles). This information's dissemination has been studied in relation to social awareness.

2) Availability, activity and emotions

Conceptually, a person's state describes certain condition experienced. For example, someone is busy and he or she is doing document revisions and the emotional state is angry. When referring to someone's state, most studies will be focus on acknowledging a person's availability and existence from direct observation, or even by the person's declaring clearly their availability (Jang et al., 2002)

3) Presence, distance, visibility, space and metaphores

Shared area might include users or resources both within and outside of it. Ijsselsteijn (2003) found that there are a few concepts that are closely related to "location" in both situations: presence, or the psychological sense of "being there"; co-presence, or the psychological sense of "being together"; distance between group members (e.g., physical, social, semantic); proximity, or the idea of a close distance between group members; and visibility. Dourish (2006) also argue that space and location are additional ideas that are connected since it is "invested with understandings of behavioural appropriateness, cultural expectations, and so forth," a place differs from a space in this way.

In CSCW (Computer Supported Cooperative Work), the study of people's locations aims to help teammates build a feeling of community and awareness of their position, so that users may modify their activities accordingly. For instance, if

someone is nearby, they can choose to approach a group member or ask for assistance.

4) Events and distortion

The things that a person does or the accomplishment of a thing, typically over time and in stages, are reflected in their actions. Someone's ability to make well-informed decisions about his or her work, to quickly assist teammates, to prevent collisions or misunderstandings, and to keep track of the project's development and teammates' participation in the overall work can all be enhanced by being aware of other group members' actions. Because it promotes mutual trust among group members, this final trait is especially crucial for distributed groups. In Ogata et al., (2001) conducted a research in this field which mostly referred to as active knowledge awareness and awareness of workspace-actions.

5) Activity and goals

Individual perform various actions corresponding to specific tasks; however, actions do not convey enough information to be meaningful. Consequently, additional information must be provided in order to disambiguate actions and allow coordination. Hence, an activity can be seen as a set of purposeful actions performed by individuals or collectivities, they have a goal or object, they are mediated by tools, and they are situated within a broader context (e.g., work practices, culture, organizational structures, and interpersonal relations). Activities are considered to be the minimal piece of contextual information. Activity awareness includes higher-level information of the goals, plans and progress of a group of collaborators (Carroll et al., 2003)

b. Task or Project

1) Task structure

Task structure research in the domain of workflow is quite active. Though it is known that jobs are closely tied to the people who do them, the automation of procedures is the key workflow concern. Participants in a workflow pass documents, data, or tasks back and forth. This transference takes place in accordance with predetermined guidelines in order to accomplish or support a larger commercial objective. When group members are conscious of the task structure, they can control how they interact. They can do this precisely by comprehending how their contributions fit into the whole picture, which actions might be taken in accordance with that understanding, or who will be impacted by taking those actions. However, because the workflow demands an anticipated, clearly defined procedure, exceptions, dynamic reconfiguration, and unstructured processes turn into significant challenges. Process awareness is another name for this knowledge of information (Steinfeld et al., 1999)

2) State-based workflow

A collection of legitimate paths through a limited state space can also be used to explain group interaction. State-based patterns in workflow systems are introduced by Van Der (2003), and are mostly used in business process modelling, where a transaction or activity is represented as a set of states allowing desired and undesired conditions to be managed. When group members are aware of the status of tasks, activities, or processes, they can change their behaviour. They can make this modification to attain a different state or they can better comprehend their circumstances to decide what contingency measures to take.

c. Resources

1) Spatial and semantic networks

Resources may be arranged, for instance, in spatial or dependency frameworks. All structures indicate a semantic relationship that group members may understand and use to build a "web of significance"—a way to interpret the connections between resources. By being conscious of such a system, more precisely by establishing a community of practise, group members control their interaction. For instance, (Reddy et al., 2001) used a patient record to enable doctors, nurses, and chemists to collaborate and plan their actions. During the prototype design process, they annotated sketches and interface mockups, making limitations and design decisions persistent.

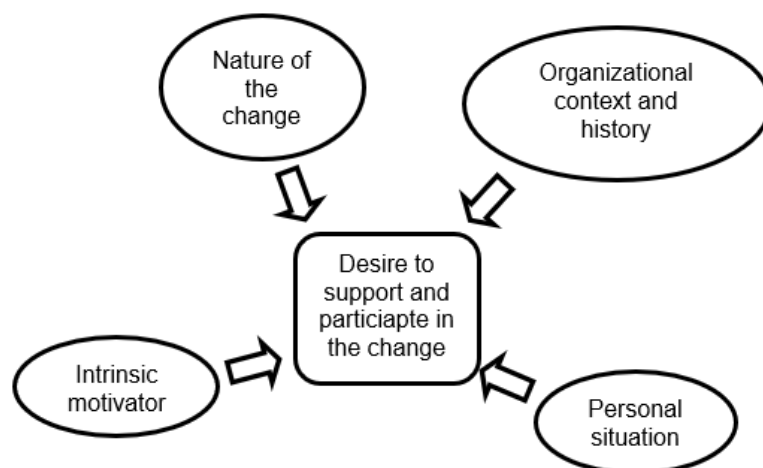
2) Availability

The statuses of various interesting resources are also modelled (for example, whether a machine is available or not), as workflow systems modelling encompasses the resources required for an activity or process. When group members are aware of the status of their resources, they may make wise decisions and prepare backup plans (Collazos et al., 2019)

#### **2.1.4 Desire Theory**

Desire is the second element of the ADKAR model and represents the primary motivation and choice to support and participate of individuals in change. Creating desire poses a challenge, in part because of the limited control we have over other people's choices. In contrast to awareness building, where we can take definite steps to raise awareness of the need for change, creating a desire for change remains elusive and, by definition, is not under direct human control.

While in an organizational environment, managers can develop new organizational processes, tools, and structures. They can buy new technologies and promote new values for their organizations. However, they cannot force their employees to support and be involved in this change. A common mistake many leaders make is assuming that by creating awareness of the need for change they have also created the desire. The resistance to change from employees catches them by surprise and they feel unprepared for this resistance. Understanding the underlying factors that influence an individual's desire to change is an important first step to achieving the elements of the ADKAR model.



**Figure 2. 4 Factors Affecting Desire**

Source: Hiatt (2006)

Figure 2.4 is addressing a person or group assesses the nature of a change at various levels including “What is meant by the change?” and “What impact will this change have on me?” This is often referred to as “What’s in it for me?” or WIIFM. They will determine whether the change is an opportunity or a threat. They can also assess how fairly they think the change will apply to other individuals or groups. If individuals perceive injustice between the two, this can provide a reason to resist change.

Organizational or environmental context represents how a person or group perceives the environment that is subject to change. Because each

person's experience is unique, so the assessment of the surrounding environment will vary from person to person. In the workplace, this organizational context includes past successes of the change, how much change has occurred, reinforcement or rewards that were part of the change in the past, organizational culture and the overall direction of the organization. The implications of these forces should not be overlooked or underestimated, as the history and culture of the organization will play an important role in this building the will to support change. For example, does a company have a history of initiating change and not following through on it, or if they have a track record of allowing some groups to opt out of change, then this can be done by precedent of overwhelming employee willingness to engage in new change.

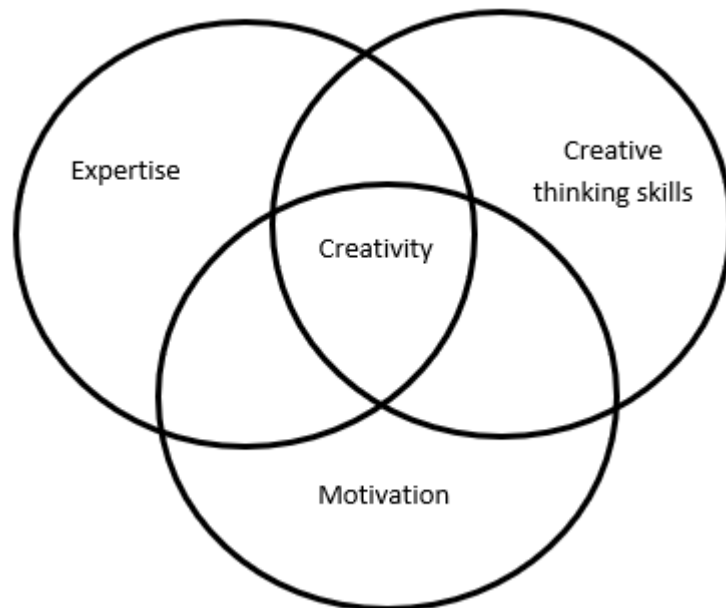
Individual or personal context is a third factor that contributes to a person's desire to change. Personal context includes all aspects of a person's life situation, including family status, mobility (are they in a flexible position in terms of where they live?), financial security, age, health, career aspirations (are they where they expect them to be when this in their career?), relationships at home and at work, educational background, upcoming personal events, and past successes in this work environment (promotions, recognition, compensation).

A person's personal situation plays a large role in the decision-making process regarding change. For example, a person's financial or health situation may cause them to make choices regarding change that may seem illogical at first glance, but make sense when understood. Likewise, a change in one's relationship with a partner or significant other can cause a fundamental change in the things that are important to that person. Everyone has a unique capacity for change (Hiatt, 2006).

Intrinsic or personal motivation is the fourth element that contributes to a person's desire to change. Personal motivators are innate attributes that shape us as individuals. From desire to help others and make a difference in the world, to avoid pain or negative consequences. Some of

us seek advancement while others desire deep relationships. Some want respect, power or position. Some strive for financial security. What drives each of us to change is unique and spans a wide spectrum of motivators. Personal motivation includes not only what we value, but also the internal belief that we can achieve what we want should we choose to move forward. It is our internal compass that communicates to us the likelihood or probability that we will get the desired result from this change.

A complete model of the social and psychological elements required for someone to produce creative work is called creativity. The hypothesis is based on the definition of creativity as the generation of original ideas or results that are suitable for a particular objective. Amabile's model of creativity and innovation in organisations from 1988 is the most well-known theory of creativity. Kessler (2013) explained that model is based on recent theoretical advancements in the realm of creativity and innovation. This model is a viable conceptual framework for the current research area when combined with fresh research findings including synergistic extrinsic motivation and a focus on both creativity and innovation. Extrinsic motivators can complement intrinsic motivation and other outcomes like creativity and invention, according to the theory of synergistic extrinsic motivation.



**Figure 2. 5 Componential Model of Creativity**

Source: Amabile (1988)

Figure 2.5 showed componential model of creativity created by Amabile (1988) by discover that the thory needs to have two essential qualities. First, creativity should be seen as a continuum that permeates all endeavours, from little everyday creative acts performed by individuals to significant historical achievements and inventions. Second, even when a person narrows their creative attention to one area, everyone possesses some degree of originality. The three main aspects of Amabile's componential model are expertise, creative thinking skill and task motivation.

Expertise is knowledge that is technical, procedural, and intellectual. It is also referred to as domain-relevant talent. creative thinking skills (cognitive and personality process conducive to novel thinking)determine how flexibility and imaginatively people aproach problems. Not all motives are created equal; internal motivation to address the issue at hand produces considerably more inventive answers than do external rewards like money. The element most directly influenced by the workplace is intrinsic motivation, often known as task motivation.

Academics are still learning the significance of environmental influences, their connection to subsystems of motivation, and their influence on creativity and invention. This is why Fischer et al., (2019) tried to discover what can motivates individual creativity and innovation where the involvement of intrinsic and extrinsic motivation are crucial where extrinsic motivation will produce decent engagement as a result and intrinsic motivation makes employee will perform the work out of their own interest. Theories that are supporting the findings are:

a. Dynamic Componential Model of Creativity and Innovation in Organizations

Numerous empirical studies have highlighted the significance of creativity and invention, and during the past 30 years, there has been a considerable increase in study efforts. The lines between the two ideas of creativity and innovation are still not entirely obvious, though, in modern times. Arguments state that the absence of compelling theoretical advancements and reliable models hinders focused research and precise, actionable guidance Anderson (2014). Amabile and Pratt (2016) identified this gap and filled it by including the most recent research on motivational factors and their effects on individual and contextual multi-level approaches into Amabile's well-known model of creativity and innovation in organisations.

Meaningfulness of work, work progress, affect, work orientations, external influences, and synergistic extrinsic motivation are among the recent research findings that are addressed in the model's 2016 iteration (Amabile and Pratt, 2016). It is frequently suggested that these elements affect innovation and creativity within organisations. Their multifaceted, complicated dynamic componential model of creativity and innovation in organisations.

b. Self-determination Theory.

Similar with the ideas of creativity and invention, there are numerous theories of motivation that either partially overlap or are in conflict with one another. Extrinsic and intrinsic motivation are viewed as separate motivational processes, according to both theories. The impact of these motivational subsystems on creativity and invention as well as on one another, however, varies depending on the hypothesis. Extrinsic motivation (motivators) and intrinsic motivation (hygiene factors), according to some researchers are orthogonal constructs, indicating their independence from one another. However, other researcher believe that intrinsic and extrinsic motivation can interact with one another and even have a positive effect on one another.

Accordingly, they contend that extrinsic incentive can also result in synergistic effects. The SDT (self-determination theory) is one theory that provides a more thorough explanation of numerous internal and external incentive kinds and their relationships. According to the theory, individual wants and motives serve as the catalyst for human behaviour such as creative and inventive performance, which is significantly influenced by the type of underlying motivation. Motivation varies along a continuum between controlled and autonomous motivation, according to the SDT (Ryan & Deci, 2000).

c. Intrinsic Motivation and Creative and Innovative Performance

Ryan (2017) discovered that intrinsic motivation is characterised by a high value placed on personal investment and engagement. The relationship between intrinsic motivation and creative performance is highly positive, this

study is also align with a research that has been conducted for over 40 years by Cerasoli et al., (2014) where the study solve a debate concerning wether the provision of extrinsic motivation erodes intrinsic motivation.

This over 40 years' worth of original data responds to some of these arguments. The predictive validity of intrinsic motivation can be influenced by incentives, as demonstrated using a unique methodology, but more importantly, intrinsic motivation remains a moderate to strong predictor of performance independent of the presence of incentives. In general, the most significant theoretical and empirical contribution is that rewards and intrinsic motivation are not necessarily mutually exclusive. The study discovered that rewards and intrinsic motivation can coexist depending on the type of performance and the reward's contingency. Since they will determine the proper level of incentive salience, it is important to first take into account the different forms of desirable and bad performance behaviours. In spite of assertions to the contrary, the study shows that incentives and intrinsic motivation work best together to improve performance.

d. Extrinsic Motivators and Creative and Innovative Performance.

The crowding-out effect, also known as the extrinsic motivation effect, was widely believed to have a detrimental impact on intrinsic motivation and performance in earlier research on extrinsic motivation. As extrinsic motivators undergo more in-depth analysis, such crowding-out effects are becoming less prevalent. Despite this, decades of research have not yet produced trustworthy standards or a shared understanding of how rewards affect motivation as

well as creative and innovative performance. As a result, academics have advocated for additional research.

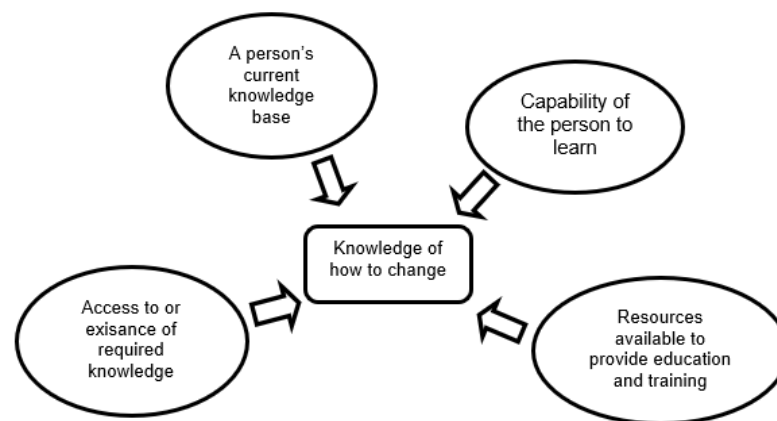
Practises in HRM are frequently employed to boost employee motivation in workplace environments. The most prevalent type of extrinsic motivators in the workplace are rewards, a particular HRM practise. They are typically given as payment for desired behaviours. Transactional and relational rewards are where rewards are most frequently divided. The primary effects of each incentive type on creative and innovative performance are put out empirically in the sections that follow, before the emphasis is placed on the interactions between these rewards and intrinsic motivation.

Increase in base pay, bonus, monetary rewards, providing training with certifications are called transactional rewards where it's tangible and refer to compensation in the form of financial. Effects of extrinsic motivator transactional rewards on creative and innovative performance has been made by researchers in HRM organizations. When knowledge employees anticipate a bonus, bonuses for recognising their efforts are particularly beneficial. Other researchers, such as Malik et al. (2015), discovered contentious findings: Financial rewards had no discernible impact on creativity, despite having a large and positive correlation with rewards in general. The lack of salient transactional stimuli explains this conclusion.

Additionally, related with external motivations relational incentives is different with transactional rewards. Relational incentives are intangible and it goes beyond material benefits which includes praise, recognition and feedbacks from employees performance such as thank-you notes, halls of fame, news articles, or funding successful team

for a project that the team values (Armstrong, 2012). This is why in order to establish trusted connections, such rewards rely on management and collaborative behaviours as well as interpersonal abilities and as a result, it is believed that relational benefits are more difficult for rivals to copy than transactional rewards since it involve human element.

### 2.1.5 Knowledge Theory



**Figure 2. 6 Factors Influencing Knowledge**

Source: Hiatt (2006)

In some changes, a person may already have the required knowledge. In other cases, as was the case with the sales force in the computer production case study, the knowledge gap can be enormous. The gap between an individual's current level of knowledge and the knowledge needs associated with desired change has a direct impact on the likelihood of success for that individual. The current knowledge base of the individual can be education or work experience. In addition to existing knowledge gaps, each of us has a different learning capacity. Some people take in new information easily, while others have difficulty learning new processes or tools. For example, some people learn new concepts quickly, but have difficulty learning technical skills. For others, learning new information that requires memorization may be a challenge. In the same way we observe

learning differences in our school system among students, it is possible to see similar differences with adults during the learning process.

The third factor that influences knowledge is the resources available to provide education and training. Within the workplace, these capacities vary greatly from organization to organization. Some companies have extensive resources and funding to provide training. Other companies struggle to provide any kind of educational structure to support change. Resources may include the availability of experts in the field, instructors, classroom facilities, books and materials, equipment and systems for students to use, and funding to support the overall training program.

For some desired changes, that knowledge may not be accessible or may not exist. Depending on the geographic location of the organization, access to knowledge may be a barrier to learning. Most countries in the world have very little access to educational institutions and experts in their fields. Organizations that do not have Internet connectivity also have limitations in terms of access to knowledge. For other types of change, the knowledge may not exist, or may not be fully developed. For example, a desired change in an area that requires technical or engineering knowledge may not be necessary perhaps because the information is not yet available. Advances in medicine, engineering and other scientific fields occur every day. These advances often become supporting factors for changes when they are developed.

By adapting to the changing conditions in the organisational environment, organisational knowledge can be generated. Organisations can improve their structural competence, which comprises a variety of components including the workplace, personnel, management, task organisation, etc., by adjusting to the current environmental conditions (Buntak et al., 2020). Additionally, knowledge is also built on collaborative efforts to develop solutions to problems or ways to carry out tasks that are specified by the requests of the interested parties. Organisational knowledge must be shared with all other (Nixon & Thato, 2016) workers

after it has been developed. Employees of an organisation can develop new information and new cognition about a particular issue through mutual knowledge sharing. Knowledge that has been created must be documented, and organisations must develop a system for maintaining that documentation.

The most common problem being faced by organization nowadays are actually the complexity of large data volumes. However, according to Nixon & Thato (2016) Many managers make judgements based on their instinctual knowledge or experience because they may lack timely access to data, which can impede productivity and provide imprecise decision-making. The ability of organisations to quickly access pertinent information and integrate it into decision-making processes is one of the success factors in the knowledge age. This, of course, necessitates the creation of business intelligence systems (BIS) to analyse the massive amounts of data present in organisations and produce the appropriate information for decision-making processes.

A study conducted by Abusweilem & Abualoush (2019) explained that one of the most effective and influencing factors in knowledge and managerial processes today is human knowledge, which is knowledge created and interacted with by a human being and represented by human experience, values, beliefs, and abilities. Parallel to the development of material resources, knowledge has emerged as one of the most crucial strategic assets for gaining competitive advantage. As a result, modern organisations must produce knowledge, prepare it for discussion and participation, and use it to inform administrative decisions, foster creativity, realise their strategic objectives, elevate their values, enhance their performance, and make the greatest possible positive impact. They also support the findings by explaining the theories need to be involved in improving organizations intelligence :

a. Knowledge management

The ability to effectively complete tasks and direct activities towards achieving goals is a real asset for both individuals and organisations. Knowledge is also a source of excellence for organisations and the cornerstone of their success. In addition to human resources and capital, knowledge has emerged as one of the most important production factors in contemporary organisations. It is the primary driver of economic expansion as well as the catalyst for productivity and technological advancement. Knowledge sparks creativity, which is then transformed into things like products and procedures. Knowledge management is defined as the procedures and activities that help an organisation create, acquire, and then organise knowledge among its employees for use in decision-making, operational procedures, and strategic planning. It also involves transforming the knowledge and experiences that an organisation has and putting them to use in these administrative activities.

The availability of information and data in an organization's databases is not a significant issue in and of itself, according to knowledge management in its broadest sense, unless it is used, enhanced, and subjected to various operations aimed at interpreting and increasing its usefulness. When defining the steps and components of knowledge management, many researchers had divergent views.

b. Knowledge creation

All processes used by an organisation to produce and acquire knowledge are considered to be part of knowledge creation, including interactions between implicit and explicit knowledge, new knowledge creation, and knowledge creation

within the organisation to preserve the various types of knowledge in support of future decisions. According to the continuous knowledge generation theory, there are four subprocesses that help create new knowledge. Knowledge creation includes socialisation, which is the process by which existing implicit knowledge is changed into new implicit knowledge, such as when employees in an organisation share their experiences. Externalisation is the process of turning implicit knowledge into explicit knowledge, as in the case of recording members' prior experiences

c. Knowledge sharing

The proper utilisation and use of knowledge assets, as well as having a direct impact on other knowledge processes like knowledge integration and generation, make knowledge sharing one of the most crucial components of successful knowledge management. Knowledge sharing is accomplished through people sharing implicit and explicit knowledge which cannot be achieved through other knowledge management processes. Knowledge sharing is defined as an organization's processes and methods for distributing and transferring knowledge among employees so they can use it and develop it to produce new knowledge. Knowledge cannot be developed or generated without the presence of active participation, so staying in the minds of employees without the participation of others will not improve or increase, but rather be vulnerable to loss. Knowledge is not important without the participation and access of the employees to benefit from it. Training, informal gatherings, knowledge bases, best practises, electronic communication tools, and organisational culture are some examples of tools and methods for knowledge sharing.

d. Knowledge utilization

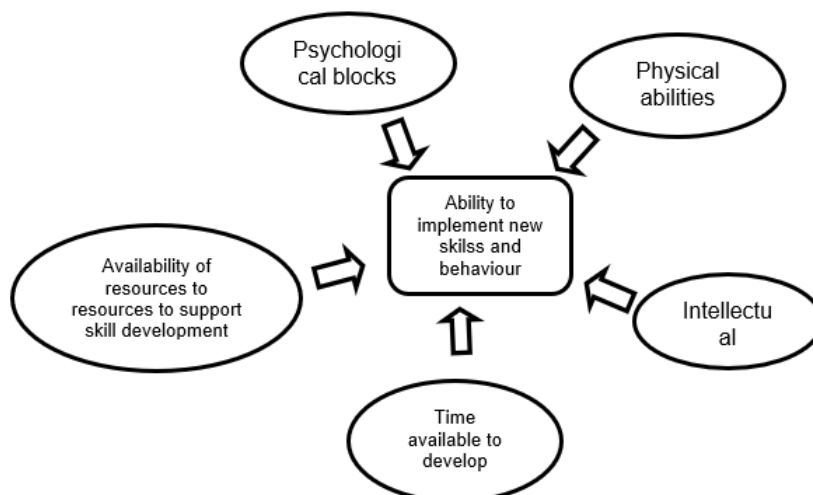
The efficient and effective use of knowledge is necessary to ensure the organization's objectives are met. To do this, extensive authority must be delegated and the organisation must have enough freedom to use knowledge. The organisation must put actual knowledge of its operations to use, reap the benefits from it after storing it, and develop methods for using and implementing it. The practise of using knowledge involves applying it to real-world tasks and reaping its benefits. Putting this knowledge to use in the real world is more important than simply storing it or participating in activities. Any organization's knowledge management programme will succeed or fail based on the knowledge size it uses in relation to the data it stores. Utilise your knowledge to address and manage the issues your organisation is currently experiencing. Utilising them in organisational processes and activities like human resource management, quality of goods and services, and other organisational activities is the knowledge management process' primary goal.

### **2.1.6 Ability Theory**

Hiatt (2006 ; p 24) found that capability is the fourth element of the ADKAR model and represents the demonstrated ability to implement change and achieve desired performance. Presence of knowledge is often not enough. Someone who has just finished lessons with a professional golfer doesn't walk out onto the course and equalize every hole. Likewise, employees who have knowledge about changes in processes, systems and job roles do not immediately demonstrate proficiency in this matter.

Some employees, depending on the change, may never develop the required skills. Awareness, desire and knowledge are important foundations,

but we will not be able to realize change if there is no ability. Capability is the achievement of demonstrated change. Ability is the act of doing, for example, so that the expected change goals are achieved. When someone reaches this ADKAR element model, the change is visible in action or can be measured in terms of impact.



**Figure 2. 7 Factors Influencing Ability**

Source: Hiatt (2006)

Figure 2.7 explained about psychological barriers to change are complex issues that we can recognize as real problems in terms of their impact, but we are not always sure how to address them. In the workplace, psychological barriers also exist. Public speaking, for example, is a fear that many people experience. This is seen in some employees when participating in large meetings or giving presentations. Some employees do not perform well under these circumstances and later reflect on their performance in frustration because this nervousness prevents them from showing their true potential.

The second factor that can be experienced by individuals in an organization is physical limitations. Physical limitations may prevent them from implementing changes. For example, when someone uses a keyboard. Individuals with limited dexterity or people with arthritis cannot type without

great effort. In the workplace, physical limitations can include strength, physical dexterity, and manual dexterity.

Intellectual abilities can also play a role in developing new abilities. All individuals have unique skills that fall along the spectrum of intellectual abilities. Many are unable to develop the skills of problem solving, financial analysis and business case development in a reasonable time to produce revenue results. Additionally, time can be a factor in many types of change. If a person cannot develop the required skills over a certain period of time, then the change may fail, even if the person has the potential to develop those abilities given more time. In business situations, the time frame for implementing change is often determined by external factors beyond the control of managers and supervisors.

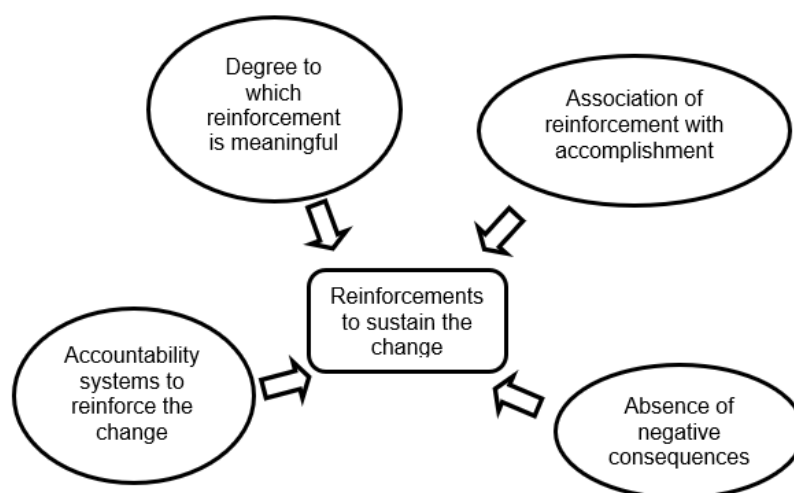
The availability of resources to support a person during this period of development will also play a role. These resources include financial support, appropriate tools and materials, personal training, access to mentors and experts in the field. In addition, the process of developing new skills and abilities is enhanced by the existence of a support structure for individuals. This support structure encourages the development of new skills, but can also address any knowledge gaps that may be uncovered once the change takes place.

The fact that there are significant interventions that can be used to target these "mindsets" is one reason why there is such fervour surrounding this social-cognitive approach to motivation. In addition to studies that demonstrate the advantages of adopting an incremental theory of ability, (Dickhäuser et al., 2016). For instance, those who participate in interventions that encourage the development of a growth mindset (i.e., an incremental theory of ability) frequently persevere in the face of setbacks, make flexible goals for themselves, and perform better academically than their peers who are taught a fixed theory of ability. These relatively brief interventions have the effect of making students believe that intellectual

ability increases with effort. This shift in perspective is typically associated with more positive motivational beliefs and improved performance.

### 2.1.7 Reinforcement Theory

Prosci (2006) explains that reinforcement includes any action or event that strengthens and supports change with an individual or an organization. Examples include private or public recognition, awards, group celebrations or even something as simple as a personal recognition of progress. Reinforcement does not always require a major event. In a study of customer service employees, the number one acknowledgment customer service agents wanted was personal thanks and expressions of appreciation from their supervisor. This attitude is meaningful because of the unique nature of the employer-employee relationship. This lets employees know that they matter and that their contributions are noticed and appreciated.



**Figure 2. 8 Factors Influencing Reinforcement**

Source: Hiatt (2006)

Figure 2.8 explained that in general, change is strengthened when recognition and rewards are meaningful to the individual. Means that from an individual's point of view it will include several recognition attributes, namely recognition or reward applies to the person who is given recognition,

the person giving the recognition or award is someone who is respected by the individual and the award is relevant or valuable to the person who is given recognition. Often individuals already know when they have succeeded in a change. Recognition lets them know that others still care and change is important.

In the workplace, many project teams overlook the potential of celebrating small successes. When change is something new and when the difficulty of implementing change is greatest, opportunities will present themselves for celebration. These moments can be turning points for change. Identifying and acting on these opportunities is an important part of strengthening change.

The opposite is also true. If no accomplishments are made, any attempt to gain awards or recognition can backfire. Individuals want to be recognized for meaningful contributions and progress. Using recognition or awards without demonstrated achievement reduces the value of that recognition now and in the future. When someone experiences negative consequences for exhibiting desired behavior, the process of change occurs. Peer pressure is a good example. In a work setting, this can happen when some employees insist on doing things the old way and put social pressure on their co-workers to do the same.

Accountability for sustainable performance is one of the strongest forms of reinforcement. For example, individuals who have started a fitness program to address a health problem are more likely to survive the change if they have some sort of accountability mechanism in place. For some individuals, this is a matter of personal trainers monitoring and measuring their progress. For others, it could be a friend or partner workout. For more serious health problems, the accountability mechanism may include regular check-ups with health care providers.

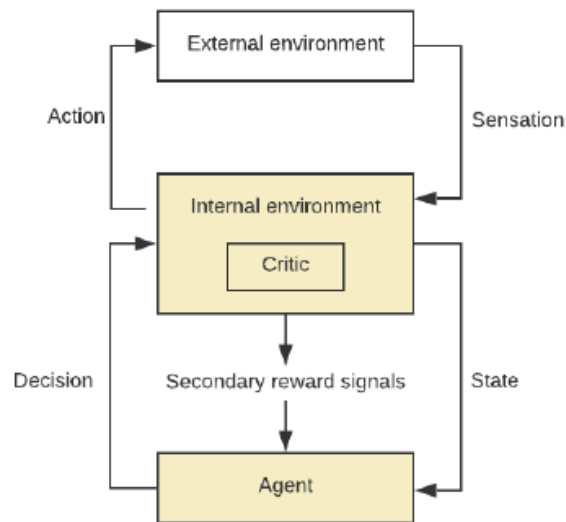
If there is no continuous reinforcement, there is a possibility that old habits and norms will reappear in the work environment. If this happens, then the organization builds a negative history regarding change. When the

next change occurs, each individual in the organization will remember how the previous changes were managed and how they were maintained during the process.

From the statement above it can be concluded that strengthening is the final element of the ADKAR model and has three objectives. First, reinforcement sustains change and prevents individuals from returning to old behaviors or ways of working. Second, reinforcement builds momentum during transitions. Finally, reinforcement creates a history that the individual remembers when the next change occurs. If change is reinforced and celebrated, then the readiness and capacity for change increases. Reinforcements are successful if these things are meaningful to the people they know, in addition if these things are related to actual achievements and also there are no negative consequences for the desired behavior and finally there is an accountability mechanism.

A study conducted by Aubret et al., (2019) mentioned reinforcement in an organization need adequate deep reinforcement learning. A significant number of new contributions have been made to the reinforcement learning (RL) research field recently, especially in light of the developing field of deep reinforcement learning (DRL). There are still a number of scientific and technological issues that must be resolved, among them the inability to abstract actions or the difficulty of exploring the environment, both of which can be solved by intrinsic motivation (IM). Similar as explained in the basic ideas of the desire theory is this type of motivation enables one to acquire new knowledge and abilities on one's own, which in turn facilitates learning new tasks. Since a few years ago, IM has been used in RL more frequently thanks to significant findings and the rise of deep learning. The ability of an employee to explore their environment, gradually learn skills (options) apart from their primary task, select an appropriate skill to be improved, and even construct a representation of their state with meaningful properties is typically improved by IM. Additionally, as a result of its definition, IM is easily

generalizable across environments and does not require additional expert supervision.



**Figure 2. 9 Model of Reinforcement Learning**

Source: Singh (2010)

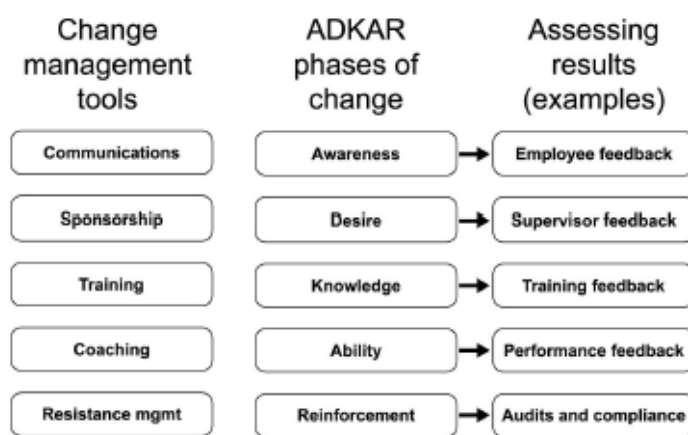
Figure 2.9 explains according to the new framework's summary, the critic is the internal component that determines the intrinsic reward and handles credit assignment. Sensations and possibly interactions in the agent's past are part of the state. The choice may be broken down into low-level actions from a high-level choice. Evolution offers a general intrinsic reward function that maximises a fitness function, claim Singh et al., (2010). This type of IM can serve as a meta-skill that makes it easier to learn new behaviours. For instance, curiosity fosters the development of skills that in turn provide some selective advantages even though they do not manifest themselves right away. A wider range of intelligent behaviours that can achieve goals more effectively than with just a standard reinforcement are obtained through the use of IM.

### 2.1.8 ADKAR Model

ADKAR (Awareness, Desire, Knowledge, Ability, Reinforcement) is a model for enabling change in change management. ADKAR provides a

goal-oriented framework that helps change leaders realize their goals more quickly and completely. Applications for this model include :

- a) A learning tool for teaching change management, especially when analyzing case studies of successful and unsuccessful change
- b) A tool for the change management team to assess the readiness of their change management plan and guide their activities
- c) Coaching tool for managers and supervisors during change
- d) Assessment tools to diagnose changes that are occurring and identify possible bottlenecks to change
- e) A planning tool for change



**Figure 2. 10 Assess the Results of Change Management**

Source Hiatt (2006)

ADKAR can be used as a planning tool for individuals to promote ideas in presentations and meetings at work. While the change management team is working through all of their plans, ADKAR helps ensure the activities happen in the right order. For example, training should not hinder communication and sponsorship of activities that build awareness and desire. If this activity does not go well, the educational

program will fail because students are not ready to be involved in change.

To ensure that change management activities remain well sequenced and aligned with employee readiness, checks can be conducted at various stages of the process. For example, communications designed to generate awareness can be assessed for their effectiveness through employee feedback. Sponsorship activities designed to create desire can be assessed through supervisor interviews. Training programs designed to build knowledge can be assessed with training feedback and assessment tools during practice sessions. The image above shows an example of a feedback tool that can be used to determine progress toward each of the goals of the ADKAR model. This process allows the project team to gather feedback throughout the process and ensures that change management activities produce the expected results.

## **2.2 Previous Research**

In order to strengthen national defence against the threat of artificial intelligence, this research focuses on tracing by describing efforts to improve the quality of human capital of Ministry of Defence Data and Data Centre personnel. Given the empirical data that is currently available and the rapidly evolving field of artificial intelligence, Indonesia must enhance the quality of its human capital, particularly in the defence industry.

To see and compare research in the form of new findings from this researcher, the research links and carries out a literature review of previous research that is relevant and is the basic reference for this research, namely as follows:

**Table 2.1 Previous Research Results that are Relevant to the Research Topic**

A table of previous studies, also known as a literature review table, is a useful tool in academic research to summarize and organize the existing body of knowledge related to a specific research topic. From various journal screenings, the author managed to select the literatures as listed below :

No	Authors and Year	Title	Method	Research Conclusion	Equality	Difference
1	Saxena (2020)	<i>The Growing Role of Artificial Intelligence in Human Resource</i>	Qualitative	Artificial Intelligence (AI) plays a critical role in carrying out Human Resources (HR) functions from procurement to performance management, so there is a growing need to integrate Artificial Intelligence (AI) into Human Resource Management (HR).	Applied theory, HR management theory.	Middle theory, research location and research methodology
2	Sukoco & Prameswari (2017)	<i>Human Capital Approach for More Productive Human Resource Management</i>	Qualitative	There are still many companies in Indonesia that have not implemented the human capital approach optimally Collectively, the independent variables significantly influence the dependent variable.	Using a human capital approach, one of which is individual motivation and individual capability	Middle theory, focus on applying the five components of human capital, locus, object of research
3.	Nasser Sulaiman Al Farsi & Aulia, (2022)	<i>A Conceptual Study on Artificial Intelligence in Human Resource</i>	Mix method	The use of artificial intelligence has proven that carrying out human resource management functions is easier, but to be able	Middle theory, human resource management, the research objective is to	Research Subjects & Objects in the field of petroleum marketing in the

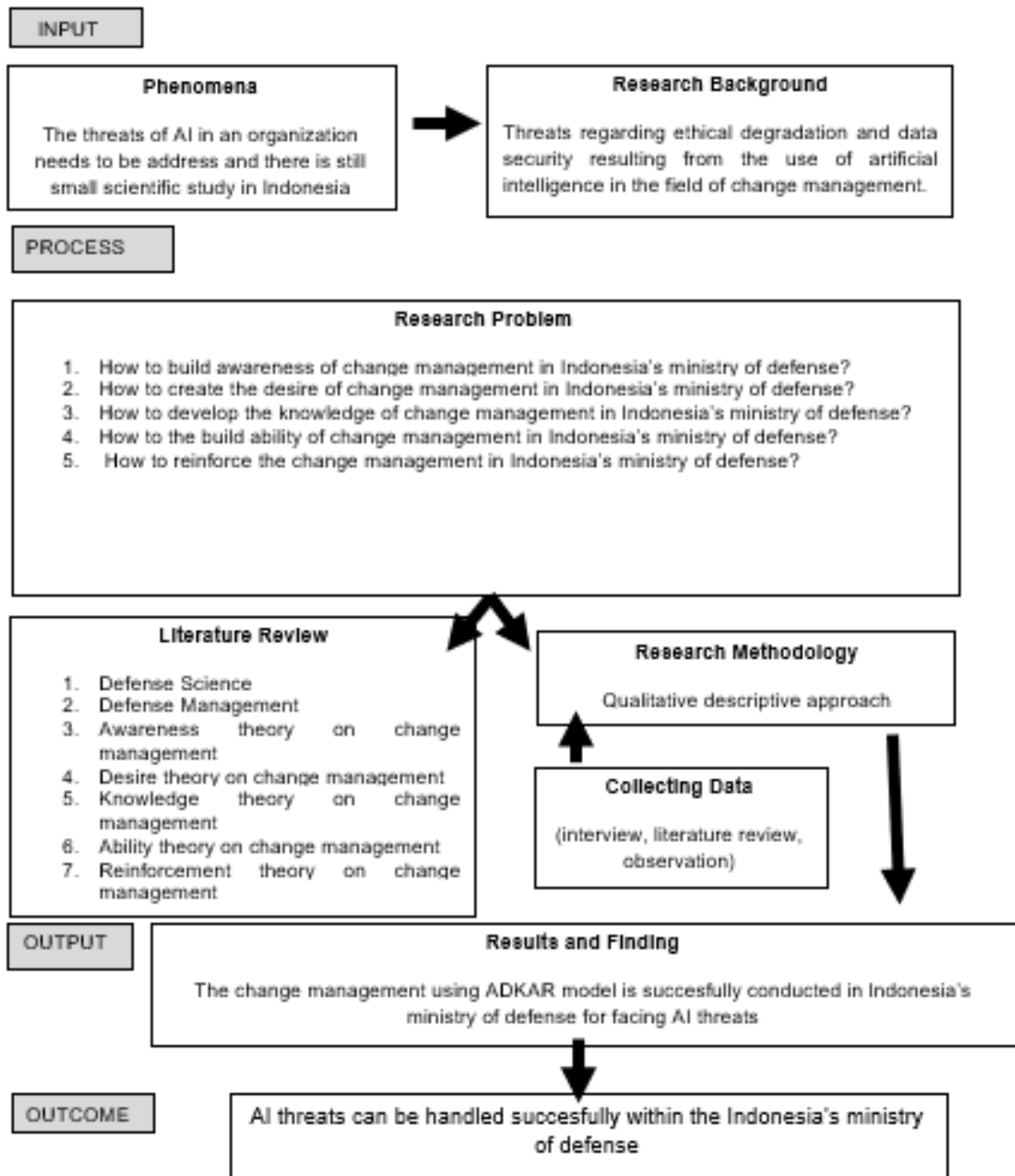
		<i>and its Effects on Future</i>		to optimize its use requires a machine that has more capacity	examine the effects of using artificial intelligence on human resources	country of Oman, scope
4.	Taylor (2019)	Artificial Intelligence in Defence : When AI Meets Defence Acquisition Process and Behaviors	Qualitative	Within the government sphere (Ministry of Defense) it is explained that the consequences of artificial intelligence problems must be handled seriously or they will lead to significant disaster. It is recommended that the ministries of defense in all countries also develop qualified internal capabilities	Middle theory, acquisition management (admission to defense management), the focus of research on the impact of artificial intelligence on the ministry of defense	Approach used
5.	Hinge et al. (2023)	Artificial Intelligence (AI) in Hrm (Human Resources Management): A Sentiment Analysis Approach	Qualitative	AI can be used in certain areas of HR to improve human resource management with some examples of leading business entities regarding its use cases in AI (Artificial Intelligence) and user sentiment analysis to use the We360.ai application.	Applied theory, human Resource Management	Research object, location, approach used.
6.	Angtyan (2019)	ADKAR Model in Change Management	Qualitative	The ADKAR model is a valuable framework for organizational leaders, change managers, and project managers to effectively lead various types of change. ADKAR's viewpoint reveals both key concepts that influence the success of change, actionable	Applied theory, using the theory in the ADKAR model.	Research subjects & objects, location, and coverage.

				insights for applying these concepts.		
7.	Worakamol Wisetsri, C.Vijai, Kasidit Chueinwittaya (2022)	Artificial Intelligence in Human Resources Management – An Overview	Qualitative	HR interventions can greatly increase worker productivity and help HR specialists improve overall employee performance and experience. However, there are challenges such as privacy, capability gaps, maintainability, integration capabilities, or limited confirmed applications. But be careful as implementing AI offers will solve unnecessary problems.	Research subject, the role of artificial intelligence in human resource management	Scope and the research location
8.	Vrontis et al., (2022)	Artificial Intelligence, Robotics, Advanced Technologies and Human Resource Management : A Systematic Review	Qualitative	The research results show that intelligent automation technology is a new approach to managing employees and improving company performance, thereby offering several opportunities for HR but also major challenges at the technological and ethical levels.	Applied theory, human resource management, research focus	research subject & object, research location, research scope
9.	Qamar et al., (2021)	When Technology Meets People : The Interplay of Artificial Intelligence and Human Resource Management	Qualitative	HR managers need to know HR systems and AI systems to achieve technical compatibility. This study provides an AI-HRM concept map that can help managers determine the type of AI techniques that can be applied to the HR problems they face. Ethics and privacy issues can also be major challenges for HR	Middle theory, human resource management theory, research impact focus.	Applied theory, the scope of research

				managers. This study will help HR managers to understand a holistic view of privacy risks and ethical issues in AI deployments.		
10.	Charlwood & Guenole, (2022)	Can HR Adapt to The Paradoxes of Artificial Intelligence?	Qualitative	Looking at various scenarios through a paradox lens, this research argues that positive and negative visions of the future regarding the use of artificial intelligence are likely to coexist. The HR profession has a degree of agency to shape the future if they choose to use it; HR professionals need to develop skills to ensure that ethics and fairness are at the core of developing AI for HR management and human resources	Middle theory, human Resource Management.	Sectors discussed, research location and research objects

Source: Processed by the researcher (2023)

## 2.3 Research Framework



**Figure 2.11 Research Framework**  
Source: Processed by the researcher (2023)