

CHAPTER II

LITERATURE REVIEW

2.1 Construction Project

A construction project, sometimes just referred to as a 'project', is the organized process of constructing, renovating, refurbishing, etc. a building, structure or infrastructure. The project process typically starts with an overarching requirement which is developed through the creation of a brief, feasibility studies, option studies, design, financing and construction.

Project activity is activity that only carried out one time and generally take place in a short period of time or can be interpreted as a temporary activity that takes place in a limited period of time, with the allocation of certain resources. These activities can be form as a building factory, making new products or conducting research and development. Projects are businesses with specific objectives with limited time and resources, while building construction is establishing a building, then construction project is trying to establish a building with a certain time using limited project resources (Lidwyna & Taufik, 2016).

The characteristic of project construction are having a specific purpose for the final work, amount of costs, quality criteria in the process of achieving the objectives, have a certain period of time, the series of activities that are not repeatedly, and the type and intensity of activities changes throughout the project.

2.2 Productivity

A measure of the efficiency of a person, machine, factory, system, etc., in converting inputs into useful outputs. Productivity is computed by dividing average output per period by the total costs incurred or resources (capital, energy, material, personnel) consumed in that period. Productivity is often defined as a relationship

between output produced by a system and quantities of input factors utilized by the system to produce that output. Here, the output can be any outcome of the process, whether a product or service, while input factors consist of any human and physical resources used in a process. It follows that, in order to increase productivity, the system must either produce more or better goods from the same resources, or the same goods from fewer resources. Stated differently, productivity improvement refers to an increase in the ratio of produced goods or services in relation to resources used (Pekuri *et al*, 2011).

2.2.1 Definition from the Experts

Productivity development in construction should be approached by identifying and understanding the impact of variations in relationships between various resource inputs and outputs. Usually, improvement efforts have focused on making value-adding work ever faster and more efficient. A better approach would be to critically analyze those activities that can be considered non-value adding. Productivity improvement does not necessarily mean working harder, but rather working smarter (Pekuri *et al*, 2011).

Productivity is one of the measuring tools for companies in assessing the work performance achieved by their worker. Productivity is a concept that describes the relationship between capital, land, the energy used to produce these results. (Basu Swastha, 2002).

Productivity according to the national productivity council is a mental attitude that always holds that the quality of life today must be better than yesterday and tomorrow must be better than today (Umar, 2000).

Productivity is how to produce or increase the results of goods and services as high as possible by utilizing human resources efficiently. Therefore, productivity is often interpreted as the ratio between output and input in certain units (Sedarmayanti, 2001).

2.2.2 Factors that Affect the Productivity

According to Sedarmayanti (2001), there are six factors that determine worker productivity:

1. Work attitude such as Shift work, can receive additional tasks and work together in a team.
2. The level of skills determined by education, training in supervisor management and skills in industrial engineering.
3. The relationship between the worker and the leadership of the organization is reflected in the joint effort between the leadership of the organization and the worker to increase productivity through a quality control circle and committee on superior work.
4. Productivity management, namely: efficient management of sources and work systems to achieve increased productivity.
5. Efficiency of worker, such as worker planning and additional tasks.
6. Worker reflected in risk taking, creativity in trying and being in the right path in trying.

According to Nitisemito (2000), there are several factors that affect worker productivity:

1. Education and training
2. Nutrition and health
3. Motivation
4. Job opportunities
5. Opportunities for achievement
6. Government policy
7. The skills of the worker themselves
8. Technology
9. Environment and work climate
10. Work attitudes and ethics
11. Discipline

12. Compensation rates

According to Slamet Saksono (1997) the factors that affect work productivity are:

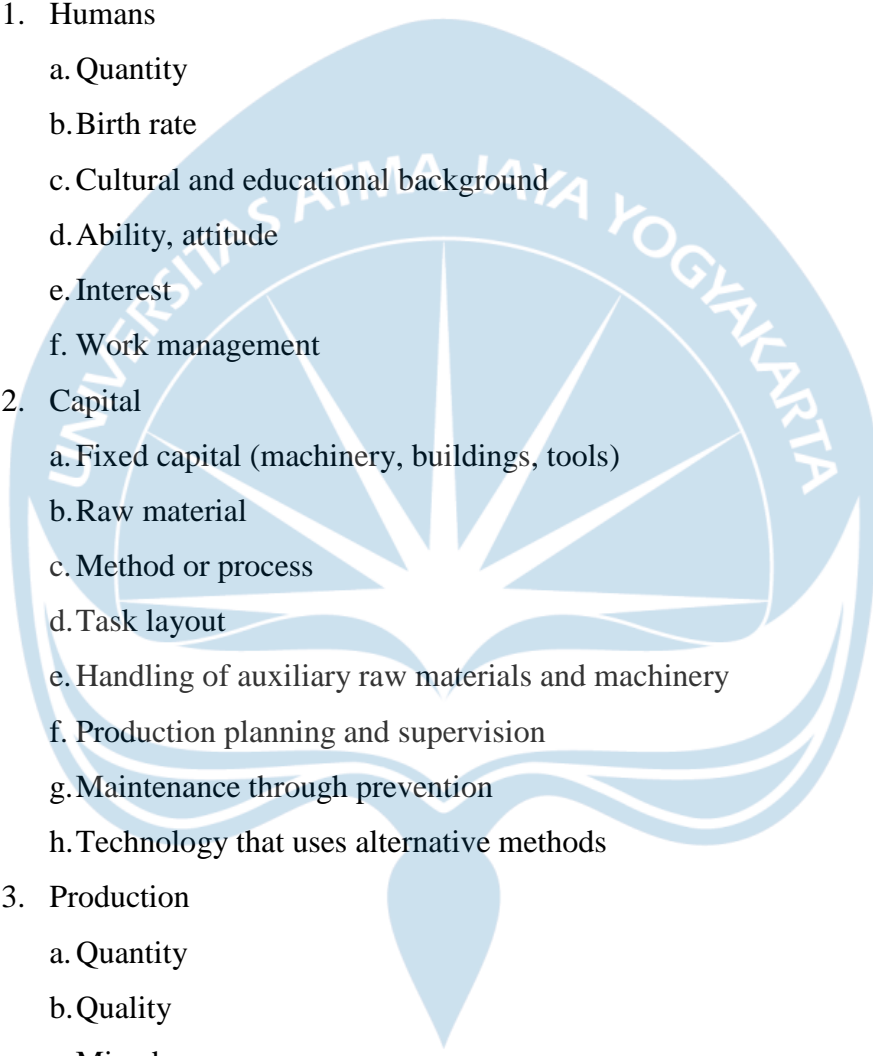
1. There is a work ethic which is an attitude of life that is willing to work hard for a better future. good, the spirit to be able to help himself, have a simple life pattern, able to cooperate with fellow humans and be able to think forward and creatively.
2. Develop a disciplined life attitude towards time and himself in the sense of being able to exercise control over regulations, discipline towards duties and responsibilities as human.
3. Better motivation and future orientation. Work productively with motivation / motivation to achieve a better future.

According to Manullang, M (2012) explains that the factors that can affect work productivity are:

1. Expertise, is an important factor and must be possessed by executing supervisors and leaders.
2. Experience, the experience factor is closely related to intelligence, namely the ability employees in completing certain tasks with results that are not only determined by certain experiences but also must be supported by intelligence.
3. Age, generally older employees have relatively limited physical energy than young employees, so they use more employees.
4. The physical condition, the physical condition is closely related to the task at hand. For example, work that requires physical energy
5. Education, education is often associated with training which generally shows the ability to work.
6. Talent and temperament play an important role in supporting work success. Talent and temperament relate to special characteristics of a

person's personality and are not considered to be influenced by their surroundings.

According to Sinungan (2018), factors affecting worker productivity are:

1. Humans
 - a. Quantity
 - b. Birth rate
 - c. Cultural and educational background
 - d. Ability, attitude
 - e. Interest
 - f. Work management
 2. Capital
 - a. Fixed capital (machinery, buildings, tools)
 - b. Raw material
 - c. Method or process
 - d. Task layout
 - e. Handling of auxiliary raw materials and machinery
 - f. Production planning and supervision
 - g. Maintenance through prevention
 - h. Technology that uses alternative methods
 3. Production
 - a. Quantity
 - b. Quality
 - c. Mixed room
 - d. Production specialist
 4. Social environment
 - a. Planning organization
 - b. System and management
 - c. Production supervision
 - d. Working conditions
 - e. Work discipline
- 
- The image contains a large, light blue watermark of the Universitas Atma Jaya Yogyakarta logo. The logo is circular with a sunburst design in the center and the text 'UNIVERSITAS ATMA JAYA YOGYAKARTA' around the perimeter. It is positioned behind the list of factors.

- f. Work climate
- g. Personnel policy

2.3 Worker

A worker is a person who works. This usually means a person who does manual labor, like manufacturing goods. In economics there are three factors of production. These are labor (the work done by workers), land (usually people need some space to produce something), and capital (it will cost resources, or money, to produce something).

Worker is human resources that greatly affect a work to produce goods or services both to fulfill their own needs and for the community accordance with their expertise in field, including in a construction work. Provision of workers is needed in construction project activities accordance with the types of skills and expertise because they follow the demands of changes in ongoing construction projects.

According to Sumarsono (2009), worker are all people who are willing to work. This means that all people who carry out work activities for themselves or others without receiving wages or those who are able to work.

According to Subri (2003), worker is the demand for work participation in producing goods or services or residents aged 15-64 years. Worker is included in the workforce (people who are looking for work / unemployed are added to people who work) and not the workforce such as people who manage the household.

According to Wijaya *et al* (2015), Construction workers can be classified into 2 types:

- a. Supervisors, duty for supervise and direct the implementation work by field workers. Every supervisor in charge of number of workers.
- b. Craft workerers, consists of various kinds of artisans who have certain skills, such as: handyman wood, blacksmith, mason, artisan aluminum and

painters. In carry out, they are usual assisted by artisan helpers or workers (trained workers, semi-trained workers, and untrained worker).

According to Wijaya *et al* (2015), project workers are divided into two:

- a. Bulk worker, worker based on the work bonds that exist between worker supply company (worker supplier) with the contractor for the term certain time.
- b. Direct hire, worker work recruited and signed individual work ties with the company contractor. Generally followed by practice, until it is considered sufficiently capable and have basic skills.

In the implementation of the project, the largest number of worker needs is in field workers. This worker is directly related to the physical work of construction in the field (Pramuji, 2008).

Construction projects are always requiring workers to work using their physical in open fields in any weather or conditions (Ervianto, 2002).