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### Decision Support System on Effect of Variable Attitude and Skills and Knowledge Construction Workers on Softskills and Hardskills

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#### ABSTRACT

In the world of construction services, employee performance is one determinant in measuring the productivity of the success of the construction project. Therefore, the performance of the worker is determined on three variables: attitude, skills and knowledge. This contribution is to be a perspective that should be owned by construction workers today, many concerns that occur in the field, the workers experienced various difficulties in the face of performance, because it is very shallow mastered these three things, so the implementation in running the project encountered many obstacles that lead to productivity performance is greatly decreased. Standard competence of workers in this era are highly demanded on softskills (1) consisting of interpersonal skills (a) and intrapersonal skills (b) and hardskills (2) consisting of transforming character (a), change management (b), stress management (c), time management (d). so, that the variables can be evaluated and analyzed through decision systems (decision support system) to make the performance of workers more productive and efficient on target (cost, quality and time).

#### 1. Introduction

Human resource planning to gather and use information to support a decision in the realm of construction at this time, in a variety of activities to improve the productivity performance of the construction of the need for information technology concrete and real, so that competence in productivity can be guaranteed, competence is as capability, equipment, elements or outcomes of learning, and expertise. Competence is not independent of the three variables: attitude, skills and good knowledge. The competence consists of skills both technical and non-technical. Technical skills or so-called hardskills defined as the technical means which are easily observed, viewed and measured. Meanwhile, non-technical skills or softskills are human skills are not easily seen though is needed in working life.

The hardskills and softskills complement each other (Agustin, 2009). This indicates that the superior performance of the workers are workers who have technical skills and good manners. So, to generate maximum performance, a person must possess competence balanced between technical

and non-technical (behavior). Hardskills can be obtained from the learning or academic activities in schools, universities as well as from experts in the field. While softskills can be obtained from non-academic activity or organization. Softskills not only positive if established early, because the self-development continue to run until someone growing up with a variety of problems and constraints are different. Softskills can also be formed by the surrounding environment. Then in this study how the description of the productivity of workers in hardskills and softskills, and which one is more dominant of the two, hence the need for a system that was built as aligning and arranging the procedure is executed in accordance with all them professional workers in the construction field.

## 2. Method

To describe from the research, we need to build a system to support a decision or set the strategy of some of the impacts arising from the performance of workers in hardskills and softskills. The system is called Decision Support System (DSS). DSS is a set of specific class of computerized information system that supports decision-making activities in an organization. DSS was used to collect data, analyze and form of data collection, and take the right decisions or construct strategies from analysis. Leading companies engaged in the industry to use this modeling to make decisions, to help analyze and solve various problems within the company, particularly the field of engineering within the scope of the human resources (HR). The results of this concept can be implemented in the construction world.

## 3. Result and Discussion

The world of work today requires skilled resources, as workers are professionals required to have expertise Hard high skill, hardskills, in addition to having expertise, in an era of intense competition is also required to have softskills are skills a person in touch with people others (interpersonal skills) and skill in organizing themselves (intrapersonal skills), good hardskills and softskills is a prerequisite of success of a professional worker. As explained above that the hardskills focused on aspects of cognitive and specialized expertise in certain scientific disciplines, whereas softskills are a personal behavior and interpersonal skills required to develop and optimize the performance of a human being. Based on trial results and data processing is done with 38 respondents consisting of a foreman, craftsman data collected by observing every activity of workers, so that the data obtained by the productivity rating. Here are the results of measurements on the competence of hardskills based observations, and field observations measured starts for 15 days starting on 2 April 2014 s / d 18 April 2014.

Table 1. Competence hardskills respective professional skilled labor

No	Date	Productivity	Percentage man and Hour/10 kg					Worker
			Foreman	Head Worker	Skill Bricklayer	Skill Carpenter	Skill blacksmith	
1	2/4/2014	P1	0.0520	0.3080	0.2080	0.2080	0.2080	0.41630
2	3/4/2014	P2	0.0520	0.3081	0.2081	0.2081	0.2081	0.41720
3	4/4/2014	P3	0.0521	0.3081	0.2081	0.2081	0.2081	0.41660
4	5/4/2014	P4	0.0524	0.3083	0.2083	0.2083	0.2083	0.41700
5	7/4/2014	P5	0.0522	0.3082	0.2082	0.2082	0.2082	0.41660
6	8/4/2014	P6	0.0520	0.3080	0.2080	0.2080	0.2080	0.41700
7	9/4/2014	P7	0.0521	0.3081	0.2081	0.2081	0.2081	0.41650
8	10/4/2014	P8	0.0521	0.3081	0.2081	0.2081	0.2081	0.41630
9	11/4/2014	P9	0.0522	0.3083	0.2083	0.2083	0.2083	0.41660
10	12/4/2014	P10	0.0523	0.3083	0.2083	0.2083	0.2083	0.41700
11	14/4/2014	P11	0.0520	0.3080	0.2080	0.2080	0.2080	0.41630
12	15/4/2014	P12	0.0520	0.3081	0.2081	0.2081	0.2081	0.41720
13	16/4/2014	P13	0.0521	0.3081	0.2081	0.2081	0.2081	0.41660
14	17/4/2014	P14	0.0524	0.3083	0.2083	0.2083	0.2083	0.41700
15	18/4/2014	P15	0.0522	0.3082	0.2082	0.2082	0.2082	0.41660
<b>TOTAL</b>			<b>0.7821</b>	<b>4.6222</b>	<b>3.1222</b>	<b>3.1222</b>	<b>3.1222</b>	<b>6.2508</b>
<b>Average (Skills)</b>			<b>0.0521</b>	<b>0.3081</b>	<b>0.2081</b>	<b>0.2081</b>	<b>0.2081</b>	<b>0.4167</b>

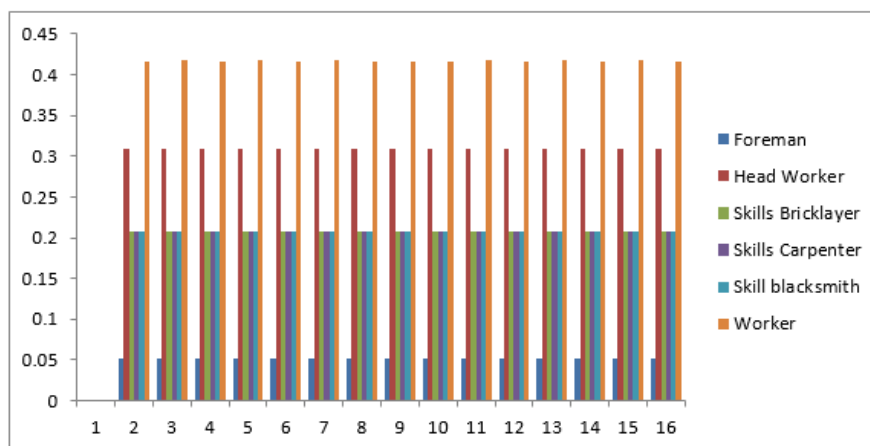


Figure 1. Graphs the percentage of skilled labor hardskills

Table 2. Skilled worker productivity SKKNI and head plumbers

No	Indonesia Standard Worker Competences (SKKNI)	Productivity/Employee Performance Assessment	Information
1	Caring for stone work/works place hygiene: basic K-3, care and set up tool work	Occupational health and safety	good (takes precision)
2	Preparing material rock work in accordance with list of materials requirements, quality and standard material	Materials science	very good need understanding
3	Preparing tool and work equipment and equipment/ tool knowledge, how to set up, use and caring for tools.	Knowledge tools	good need understanding
4	Accepting understanding carrying out the work, work related, reading the working drawings sign and theory/size	Drafting/Design	good need understanding
5	Construction wood/stone/iron/welding	Construction wood/stone/iron/welding	good
6	Budget plan	Owner, consultant	good

Table 3. SKKNI and professional productivity foreman and supervisor

No	Indonesia Standard Worker Competences (SKKNI)	Productivity/Employee Performance Assessment	Information
<b>Standardization Vocational</b>			
1	Applying the provisions of environmental control work the workplace	Professional ethics & work culture	good
2	Applying the provisions of enactment construction services legislation, occupational safety and health and control work environment, implementing provisions Law services construction in place work	Law on construction services and good corporate governance	good
3	Applying the provisions of occupational health and safety in the workplace	Occupational health & safety	good
4	Applying the provisions of environment control work the workplace	Environmental control, traffic arrangement & security	good

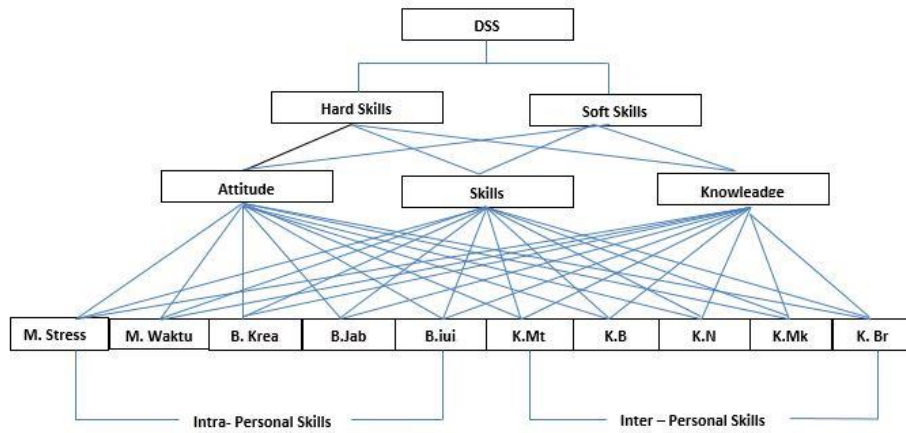


Figure 2. Flow chart Decision Support System

**Information:**

DSS: Decision Support System  
 M. Stress: stress management  
 M. Waktu: Time Management  
 B. Krea: Creative Thinking  
 B. Jab: Responsible  
 B. JJJ: being honest

KMT: Ability to Motivate  
 K.B: The ability to Cooperate  
 K.N: Ability to Negotiate  
 K.Mk: Ability to communicate  
 K.Br: Adaptability

Category variable intra-skills comprising: stress management, time management, creative thinking, responsible and honest and also the category of inter-personal skills consisting of: the ability to motivate, ability to cooperate, ability to negotiate, communication skills and abilities adaptations, the second was terika by three variables that determine the productivity performance of the construction workers are attitude, skills and knowledge, so we could see and understand hardskills and softskills to workers, as well as the extent to which the development of skills to professional of workers. So, that the decision makers can take a step and can decide competence balanced and efficient against his subordinates, in that they use methods DSS.

Table 4. Result analysis behavior competence

No	Intra personal skill	before (%)	after (%)	Inter personal skill	before (%)	after (%)
1	stress management	2.5	4	ability to motivate	4	5
2	time management	5	6	ability to cooperative	5	7
3	creative thingking	3	4	ability negotiations	3	4
4	responsibility	5	6	communication skills	3	4
5	be honet	3.2	5	adaptability	4	5

In the world of work, competence is defined as an important aspect in determining the performance of workers. Most of the workers would produce an effective performance if they have the knowledge, skills and behaviors (knowledge, skills and attitude) are quite good and can be applied simultaneously. Defines competence as character attitudes and behavior, or individual abilities that are relatively stable when faced with a situation in the workplace, which is formed from the synergy between the character, self-concept, internal motivation, as well as the capacity of contextual knowledge (Han, 2011). Various types of job competence can be expressed and grouped in two categories, namely technical competencies and behavioral competencies.

Is the type of competence expressed in job skills, or often called hard competence or hardskills. Technical skills of someone drawn from its ability to complete its main tasks, or work-related competencies to produce the best performance. These competencies associated with a person's ability to work with skills, or the ability to understand the details of a job. Given each job basically have different details, the kind of technical competency has a very long list, because it is unique depending on the type of work.

The ability hardskills is all things related to enrichment theory that became the foundation of analysis or decision (Utomo, 2010). Hardskills can be assessed from the technical test or practical

test. Hardskills is mastery of science, technology and technical skills related to the field of science (mechanical engineer should certainly be competent in knowledge engineering, physicians should be qualified in medicine, as well as other professions) (Sailah, 2008). When each profession has demanded, hardskills are different, not so with softskills, as these skills are competencies (skills,) that should be possessed by all people, regardless of their profession. Meanwhile, hardskill describe the behaviors and skills that can be seen in the eyes of (explicit). Hard kills are skills that can produce something visible and immediate nature. It can be concluded that the hardskills are the technical skills related to the field of science that can be observed and measured, obtained by studying science and can also be obtained from people who are experts and experienced in their field (Basir, 2011). Here is a skill (hardskills) owned by construction workers and professional fields: planning pictures/drafter, planning measurement/ surveyor, masonry, expertise smith, expertise carpenter, and artisan craftsmanship granite/marble.

Is the type of competence which is expressed in the behavior of someone at work, or often called soft competence or softskills. Behavioral competencies will have a list that is less than the technical competence, because of several different jobs may require the same behavioral competencies. Softskills are usually difficult to be observed and measured. These skills are necessary for everyday life such as is also required in terms of employment. Relate to each other, communicate, listen, engage in dialogue, working together as a team member, to solve the problem is some of the activities that require these skills (Coates, 2007). Softskills are the skills a person in touch with other people (interpersonal skills) and skills in organizing themselves (intrapersonal skills) who can develop to the maximum performance (Islami, 2012). Softskills is a sociological term in about EQ (emotional intelligence quotient) a person, which can be categorized into social life, communication, spoken language, habits, friendliness, optimization.

It concluded that softskills are skills that cannot be measured and observed. This is because, softskills have no benchmark. These skills are formed through the relationship of self to the surrounding environment is also a desire in him. There are two types of softskills: intra-personal skills and nter-personal skills (Wicaksana, 2012). Intra-personal skill is a skill to govern themselves. While inter-personal skills are the skills a person in dealing with others. Both function optimally for development work. Here is an example of both these types of skills.

Stress management is a skill that allows one to anticipate, prevent, manage and recover from the stress they felt for their threats and incompetence in coping performed. Time management is the ability to allocate time and resources (limited) to achieve the goal that we want (Anbari & Kwak, 2004). To be able to manage the right time, we must be careful in arranging a good portion for worship, for yourself, to work, even for other social activities. Creative thinking is actually the ability to see something not seen before, creating something new or modifying something that already exists. Responsible is obliged, bear, bear everything, and suffer the consequences of all that has been done. Honestly if interpreted by default is recognized, say, or give information in accordance reality and truth. And its application in practice, someone's honesty is marked by the accuracy of recognition or what has been told by the truth and reality of the matter (Widayanti, 2010).

Motivation is an impulse that will cause a person to perform an act to achieve certain goals. Motivation comes from the word motive which means encouragement or stimulation or driving forces that exist in a person (Anton & Billy, 2013). Cooperation is the work normally done by individuals but done simultaneously by two or more persons with the aim that the job becomes lighter. By working together, we can also realize one special characteristic of Indonesian society that is finishing work with mutual cooperation and find a way out with deliberation. In cooperation course, there are some rules that should be the foundation so as to carry out such cooperation exists in mutual disadvantage. Negotiation is a form of social interaction that serves to reach an agreement among the parties who have different interests. Communication skills are the skills or the ability of delivering messages, ideas, or thoughts to others with the intention that other people understand what is meant by good, directly or indirectly verbally. Adaptation is the ability of living organisms to adapt to its environment. Adaptability is a very complex behavior because in involves a number of functions and intellectual.

#### **4. Conclusion**

Softskills and hardskills are the two things are mutually complementary. Both are very important for success in harsh working environments. Hardskills and softskills needed to develop the creativity of each individual. We do not just rely on one of the ordinary course. Both should be balanced. This is

because, softskills can affect hardskill. While too proud to hardskills will make us proud. For the construction workers, should prepare themselves by developing hardskills as a basis to perform various work items and offset by softskills as a foundation to spur motivation in completing the work. Hardskills and softskills are the two competencies that are interconnected by a packed by three variables: Behavior, expertise and knowledge. These three variables are packed within the scope of competence based on vocational technical. All of this is done with the system and good performance models, one model or system determination with DSS so that the construction project is well structured.

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