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## HUMAN RESOURCE MANAGEMENT PATTERNS IN INDONESIA'S CONSTRUCTION COMPANIES

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*Research in several countries from different continents related to human resources in construction continues to be developed. However, one fact shows that human resources in Indonesia's construction field are still not ready to compete in terms of quality with the workforce of several countries in Asia. This research was conducted to determine the condition of Human Resource Management in the construction company in Indonesia. Data retrieval instruments use questionnaires and structured interviews at 50 randomly selected construction companies from different Indonesian regions. The data obtained is processed using quantitative data analysis using parametric statistics analysis. The results showed that Human Resource Management in Indonesia's construction company is in good or excellent condition provide 92%. This indicates that most of this industry has enforced and implemented policies related to human resource management. However, human resource planning patterns in Indonesia's construction company focus more heavily on Operational Planning, which means that this planning on construction companies in Indonesia is still project-oriented or short-term*

*Key words: human resource, patterns, operational, construction*

### INTRODUCTION

Factors of uncertainty in the construction industry can arise from the environment, such as unknown site conditions or the availability of resources and materials [1]. Human Resource (HR) is currently a crucial part of managing, which the HR management is planned for long-term management to assist in decision-making, considering some risks. Furthermore, the term Human Resource Management (HRM) comes as a long-term management plan to help decision-making considering some existing risks. As a result, research related to this topic in construction is constantly developing in several countries in the world. [2], [3].

Several USA studies explain how to improve HRM effectiveness related to Networking Management, Quality Assessment, Staffing Management, Empowerment, Developing, Reward/Competencies, Organizing, and Safety Management [4], [5]. Besides, in continental Europe, Denmark and Germany have developed Information of Technology (IoT) to support HRM. Their research about HR includes Information Context, Healthy & Safety, Construction Process Indication, Machine Control & Disposition, and Logistics & Supply Chain [5], [6]. In Europa, the national institutional context's influence on the implementation of sustainable HRM system in the company is greater than that exerted by the governments [7]. Research in Australia also explains construction industrialization by developing new skills, knowledge, networking, and deeper supply chain collaboration [8].

In Asia, some countries such as China, Korea, Hong Kong, Singapore, and Iran are the countries that continue to develop research related to this topic. In China, they also have combined IoT, such as Building Information Modelling (BIM), to support HRM in their country [9],

[10]. Korea is also one of the countries that have developed various methods combined with IoT to supervise HRM implementation [11]. Moreover, in Hong Kong, they are more focused on improving their HR efficiency [6]. Meanwhile, Singapore prioritizes Safety Management as a priority in implementing the HRM [5]. Lastly, Iran is also the country that conducts research related to this topic. They explain various factors that prioritize sustainability in organization HRM-related to the country's economic, social, and environmental fields [5], [12].

There is also some news about human resources development in the construction sector from various media sources in Indonesia. It shows that construction workers are one of the most important parts of time as the human need for infrastructure is continually evolving. However, problems related to human resources' low competency or capability need attention [13], [14]. Low levels of education are one of the causes of lack of competence or limited knowledge related to the construction workers certification [15], [16]. It shows that HR in Indonesia's construction is still not ready to compete in terms of quality with the workforce of neighbouring countries such as Singapore and Malaysia [17].

On the other hand, the digital economy largely determines conditions for the formation of human resources today. It proves that human potential, which is inefficient, can hinder scientific knowledge and potential in developing a country. These trends are hazardous and can spread widely, causing significant damage to society and the economy [18]. HRM phenomena often depend on context, which is to understand what is happening in the workplace to provide a relevant solution [19]. In this principle, conceptual and methodological changes in HRM

research need to be noticed and considered [20].

The current conditions, HRM in the construction sector, are critical and urgent to prevent the risk of skilled labour shortages to support the sustainability of future construction projects [21], [22]. Therefore, understanding HRM conditions in a country needs to know the management patterns used in that country to make the right policy by its culture in that country. This research will discuss the condition of HRM in construction companies in Indonesia to find out more about the existing HR planning process to build a sustainable HRM system.

**HUMAN RESOURCE MANAGEMENT (HRM)**

HRM is a method of managing human resources in an organization to achieve the organization's goals to the maximum through the development of human resources itself [23]. HRM focuses its attention on human production factors with all its activities to achieve the industry's goals. HR is an investment that plays an important role in the industry [24].

The scope of HRM is organizing, implementing, and controlling HR in the organization to achieve the goal effectively and efficiently. As one of the organization's resources, HR plays an essential role in achieving the organization's goals [24], [25]. At the same time, four main factors that need to be considered in HRM are motivation, competence, loyalty, and work discipline to improve employee performance. Improving HR competency will assist organizations in providing reliable HR to face various challenges [24], [26], [27]. Investments in competency development are indispensable in enhancing the state's competitiveness: graduates' competence determines regional productivity potential [28]. Improving productivity is not to perform as many tasks as possible or increase workload, job output, or working hours without the work plan. Instead, the key is to maintain a consistent workflow and balance the available workload with the capability (work hours) [29].

The stages in HRM start with recruitment, including HR planning, analysis of positions that determine the job, appropriate positions, selection, training and development, job achievement assessment, compensation, and renewal related to retirement and termination of work. HRM can be used to improve the quality of an industry by enhancing its quality and performance. HR Quality Improvement is carried out on resources that have competence both from the physical and intellectual aspects. Improvement of HR Quality should always be made to find, develop, and maintain HR that suits the needs [30]. Competence is closely related to the recruitment process and performance management. The four steps that can take to improve competence are involved in a competency dictionary review consisting of competencies descriptions and proficiency various levels; involves the job design which the HR manager or practitioner chooses the ability or competency level; involves assessing the performance of an incumbent, and identify the difference

between the actual proficiency level and the required proficiency level for each particular competency [31].

There are three strategies in HR planning, e.i. HR Strategic Planning, HR Tactical Planning, and HR Operational Planning [30]. Strategic planning is an organizational process to define a strategy or direction and make decisions about allocating resources to pursue this strategy. There are several important concepts involved with concepts and strategic planning. These concepts are mission, vision, goals, and objectives. These concepts are critical components of strategic planning. The first component is the mission. A strategic plan starts with a clearly defined mission that defines the organization's fundamental goals, explaining briefly why the organization exists and what it does to achieve its vision [32]. Strategic planning characteristics can be effectively incorporated into the Project Management framework to support project success [33]. Tactical planning coordinates demand and supply planning among relevant functions [34]. Operational planning in construction companies explains the middle manager's perceptions about the operating strategy used in a short-term perspective. This planning is vital for an expert when attempting to understand why strategic planning (long-term) is challenging to realize in an organization [35].

Competitive advantage in Indonesia's construction company can be achieved through HRM practices to build and improve the safety culture that will increase employee productivity. The Company must integrate this practice with a culture of safety as the company's priority strategy because, based on empirical results, safety culture can be a competitive advantage for construction companies in Indonesia [36]. It is important to know how HRM practices can help companies from labour issues constraints to understand how companies can safeguard their human resources, [37]. Other factors that can support competitive advantage for the company include organizational culture, competency, confidence, motivation, organizational commitment, career development,



Figure 1: Levels of operations and strategies in a single-business construction company [35]

Table 1: Variables & indicators of research

Variables	Indicators	References
HR Strategic Planning (Long-term)	<ul style="list-style-type: none"> <li>• Business Strategy (Vision &amp; mission)</li> <li>• Marketing Strategy (Formulation of long-term goals)</li> <li>• Finance Strategy (Budget allocation)</li> <li>• Operation Strategy (Division of work units)</li> </ul>	[24], [25], [26], [27], [30], [35], [32], [33]
HR Tactical Planning (Medium-term)	<ul style="list-style-type: none"> <li>• Business factors analysis</li> <li>• Brainstorming in decision making</li> <li>• HR amount planning</li> <li>• Analysis additional HR needs</li> <li>• HR inventory forecasting</li> <li>• Evaluation of HR planning process results</li> </ul>	[30],[35], [34], [36], [37]
HR Operational Planning (Short-term)	<ul style="list-style-type: none"> <li>• Job analysis</li> <li>• Selection process analysis</li> <li>• Training &amp; development programs</li> <li>• Work performance assessment</li> <li>• Compensation</li> <li>• Schemes of Pension &amp; Layoffs</li> </ul>	[30], [35], [38], [40], [42], [43]

performance and productivity, well-being, perseverance, supervision, decision making, education and training, interpersonal communication, leadership, justice, job satisfaction, self-concept, work environment / working climate, cooperation, reward/salary, income, allowance, remuneration, work spirit, and productivity [38].

Developing an internship program allows workers to develop the skills they need. However, sometimes companies assume this program as something that burdens the company. Hence, it is necessary to understand employers' pressure when they make HR decisions as a major asset in making and implementing policies related to labour [39]. The leadership position is critical in a company because it will provide major work motivation and employee performance changes [40]. Leadership is one of the most common professional competencies required in engineering and construction today [41]. The combination of resources, cultural knowledge systems, and positions or roles in work relations can also be studied to explain the formulation of HR policies in organizations [42]. Besides, HRM's supporting factors include high employee motivation, government policy support, and public and private participation. In contrast, constraint factors in HRM include differences in organizational type, limitations of facilities and infrastructure, and employees' heterogeneity [43]. Well-defined HRM practices may contribute to job satisfaction, engagement, a favorable psychological contract, and sustainability. HRM can encourage employee engagement in environmental practices, creating an atmosphere of belongingness and motivation towards work [44],[45].

Some of the references can be taken as indicators to measure HRM variables to map application patterns to construction companies in Indonesia.

## RESEARCH METHODS

The data collection techniques used in this study are questionnaires and structured interviews. The objective of distributing questionnaires is to collect information to respond to the existing problems. The collection of research data were conducted by setting the sample as many as 50 construction companies consisting of consultants and contractors selected randomly from various Indonesia regions. The research respondents had some criteria for a minimum of three years experience and a bachelor's graduate. The indicators used in this research questionnaire can see in Table 1.

Furthermore, data analysis is processed with parametric statistics by conducting validity and reliability tests using SPSS software. The average of variables is calculated to determine the average score of the variable, and the criteria of average score correspond to the following Table 2.

Table 2: Variable average score criteria

Average Score	Criteria
1.00-1.75	Poor
1.76-2.50	Fair
2.51-3.25	Good
3.26-4.00	Excellent

## RESULTS AND DISCUSSIONS

Based on Figure 2, the collection of questionnaire data on HR planning variables shows that almost two-thirds of Indonesia's construction companies operate In Jabodetabek or around the nation's capital as a metropolitan city center in Indonesia. There was approximately 72% for Jabodetabek, and the smallest percentage occurred in

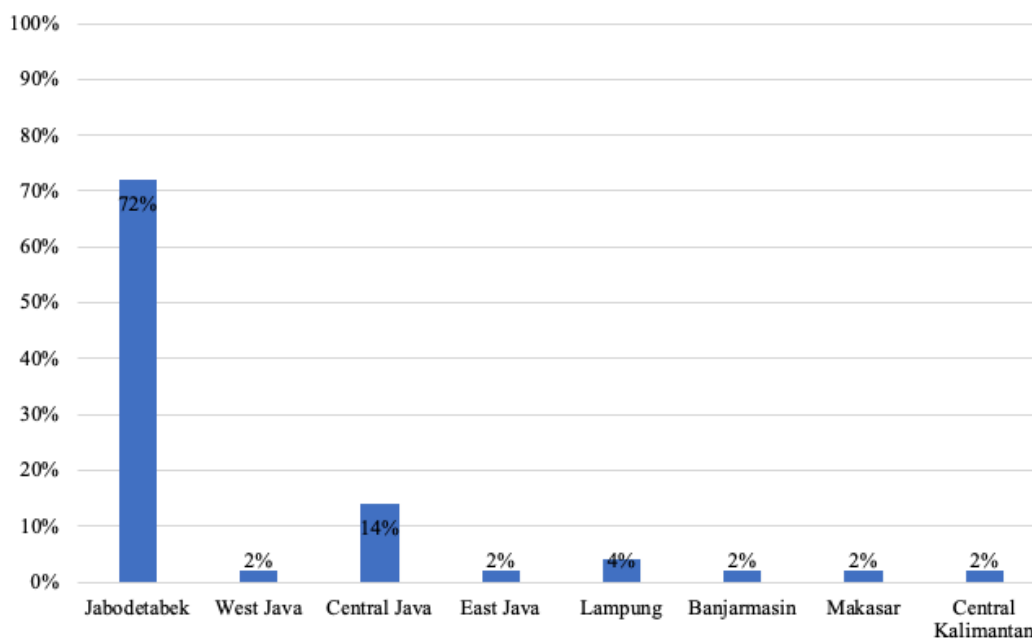


Figure 2: Respondent's Regional Profile

Table 3: Profile Respondents

Age (years)	20-25	26-30	31-35	36-40
Percentage	56	12	10	22
Experience (years)	3-5	More than 5-10	More than 10-15	More than 15
Percentage	64	22	12	2

five areas, where were West Java, East Java, Banjarmasin, Makasar, dan Central Kalimantan at 2% respectively. Subsequently, the profile of respondents from 50 construction companies in this research reveals in Table 3.

Table 3 illustrates that respondents were dominated by young age employees between 20 and 25 years old by 64%, with experience between 3-5 years in the construction industry at 56%. Meanwhile, the minor percentage of respondents were 31-35 years-old at 10% and for the lowest rate of experience more than five years, only

2%. It means that construction needs more young age employees to use theirs physically for creating the infrastructure. Meanwhile, after a maximum of 15 years in their job, they will change to another job or retire.

The collecting data result has tested validity and reliability. The validity test results show that all variables in Table 4 have a Pearson Correlation coefficient for strategic planning about 0.811, tactical planning at 0.921, and operational planning of 0.846. That value represents that the r coefficient calculation is greater than the r table val-

Table 4: Validity Test Result

		Strategic	Tactical	Operational	Total
<b>Strategic</b>	Pearson Correlation	1	.701**	.531**	.811**
	Sig. (2-tailed)		.000	.000	.000
	N	50	50	50	50
<b>Tactical</b>	Pearson Correlation	.701**	1	.704**	.921**
	Sig. (2-tailed)	.000		.000	.000
	N	50	50	50	50
<b>Operational</b>	Pearson Correlation	.531**	.704**	1	.846**
	Sig. (2-tailed)	.000	.000		.000
	N	50	50	50	50
<b>Total</b>	Pearson Correlation	.811**	.921**	.846**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	50	50	50	50

\*\* . Correlation is significant at the 0.01 level (2-tailed).



ue for the number of data as 50 (0.361). It means that all research variables are valid.

The data reliability test results in Table 5 can be explained that Cronbach's Alpha value at 0.845, and this value close to 1 (one) means that the existing data is reliable.

Table 5: Reliability test result

Cronbach's Alpha	N of Items
.845	3

The result of data from each variable was calculated by the average score using the following formula.

$$\text{Average Score Based on Variables} = \frac{\text{Total value of each variable}}{\text{Number of respondents}}$$

The average score based on HRM variables in Table 1 from 50 construction companies in Indonesia provides an overview of HRM implementation conditions in Indonesia's Construction Companies, as in Table 6.

Table 6 describes that the least average score of indicators was an analysis of additional HR needs, including HR Tactical Planning with average score only at 2.7. It means that in this country, awareness about the limitation of HR ability was low. Usually, this country's industry has the policy to force them overtime if a load of work peak season. At the same time, the highest average score was compensation, which included HR Operational Planning. It means that this country's industry

has been giving compensation for employee well-being, for example, related to safety guarantees, health insurance, and other compensation from the company. This compensation is also associated with their policy about overtime in peak season. Based on the average score in Table 6, the HR Planning result is obtained as in the following Table 7.

Table 7 shows that Indonesia's construction companies' average HR planning score for strategic and tactical planning is in good condition, and operational planning in excellent condition. The highest average HR planning score in these industries is HR Operational Planning. It means that the planning process for construction companies in Indonesia is focused on operational planning or short-term planning, the second focus on long-term planning, and the last on medium-term. It indicates that Indonesia's construction companies have had policy in strategic planning such as business, marketing, financial, and operation. However, they presume that tactical planning is the least urgent planning according data on Table 7.

Furthermore, the data from each respondent also was calculated by the average score using the following formula.

$$\text{Average Score Based on Respondent} = \frac{\text{Total value of each respondent}}{\text{Number of variables}}$$

This value gain based on HRM variables from 50 respondents provides an overview of HRM implementation condi-

Table 6: The result of research data based on variables

Variables	Indicators	Average score	Criteria
HR Strategic Planning (Long-term)	a. Business Strategy	3.2	Good
	b. Marketing Strategy	3.2	Good
	c. Finance Strategy	3.2	Good
	d. Operation Strategy	3.2	Good
HR Tactical Planning (Medium-term)	a. Business factors analysis	3.1	Good
	b. Brainstorming in decision making	3.1	Good
	c. HR amount planning	3.2	Good
	d. Analysis additional HR needs	2.7	Good
	e. HR inventory forecasting	3.1	Good
	f. Evaluation of HR planning process results	3.1	Good
HR Operational Planning (Short-term)	a. Job analysis	3.5	Good
	b. Selection process analysis	3.5	Good
	c. Training & development programs	3.4	Good
	d. Work performance assessment	3.5	Good
	e. Compensation	3.6	Excellent
	f. Schemes of Pension & Layoffs	3.3	Good

Table 7: Average score of HR planning

HR Planning	Average Score	Criteria
Strategic (Long-term)	3.2	Good
Tactical (Medium-term)	3.1	Good
Operational (Short-term)	3.4	Excellent

Table 8: The result of research data based on respondents

Number of Respondent	Average Score	Criteria	Number of Respondent	Average Score	Criteria
1	4.0	Excellent	26	3.1	Good
2	4.0	Excellent	27	3.4	Excellent
3	2.7	Good	28	2.9	Good
4	3.1	Good	29	2.7	Good
5	2.8	Good	30	1.9	Fair
6	3.0	Good	31	3.6	Excellent
7	2.8	Good	32	3.4	Excellent
8	3.0	Good	33	4.0	Excellent
9	2.7	Good	34	3.6	Excellent
10	3.7	Excellent	35	3.4	Excellent
11	3.9	Excellent	36	3.3	Excellent
12	3.6	Excellent	37	3.9	Excellent
13	3.6	Excellent	38	3.4	Excellent
14	3.3	Excellent	39	3.3	Excellent
15	3.7	Excellent	40	3.1	Good
16	2.4	Fair	41	3.5	Excellent
17	3.8	Excellent	42	2.8	Good
18	3.1	Good	43	4.0	Excellent
19	3.3	Excellent	44	2.9	Good
20	3.3	Excellent	45	2.5	Fair
21	3.5	Excellent	46	3.0	Good
22	2.9	Good	47	4.0	Excellent
23	2.3	Fair	48	3.5	Excellent
24	3.0	Good	49	4.0	Excellent
25	4.0	Excellent	50	3.2	Good

tions in Indonesia's Construction Companies, as in Table 8. Based on Table 8, The lowest average score in HRM implementation of Indonesia's construction companies was 1.9, and the highest average score was 4.0. The HRM implementation criteria in Indonesia's construction companies only consist of Excellent, Good, and Fair. It can be illustrated in Figure 3.

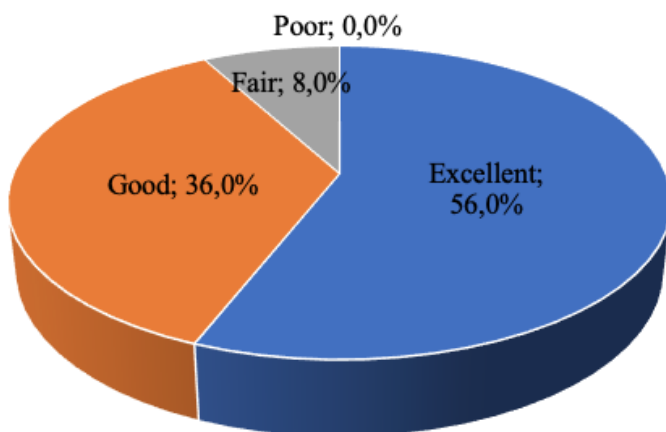


Figure 3: Grouping of construction companies based on HR planning criteria

Figure 3 shows that no of Indonesia's construction companies had poor HRM implementation criteria, and the highest percentage of HRM implementation of Indonesia's construction companies was in excellent conditions, which was 56%. Almost all of Indonesia's construction companies have implemented HR planning in good or excellent, about 92%. However, this management's implementation needs more optimization in some indicators to reach success in HRM implementation, as the discussion before.

**CONCLUSION**

The data analysis results and discussion that have been conducted can be concluded that construction companies in Indonesia already implement policies related to HRM. HR planning patterns in Indonesia's construction companies focus more heavily on Operational Planning. It means that it is still focused on project oriented or short-term. However, the percentage of implementation HRM in Indonesia's construction companies was in good or excellent condition, roughly 92%. It indicates that the implementation of this management still has not optimal.

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