Strategic Approach in Human Resource Management at Construction Companies in Indonesia

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Abstract. This research was carried out to take a strategic approach to Human Resources Management in Indonesia's construction companies. This was accomplished to complement previous research with the scope of 20 large contractor companies that have handled infrastructure projects and selected randomly throughout Indonesia. Collecting data using questionnaire techniques, followed by observations and interviews, to get more information. The data obtained is processed using descriptive data analysis and plotted on a mapping diagram of HR management. Data processing is carried out using the SPSS program to test the validity and reliability findings. The research results are information related to the mapping patterns of HR management in the construction and the main factor that is the key to success in the implementation of HR management. This study's results can be used as a reference for companies in making policies and determining the right strategies to improve the quality of their human resources to improve the company's performance in infrastructure. It is hoped that this research can support HR management systems within the scope of industry organizations more broadly to support government programs in realizing superior human resources for the build of Indonesia's progress.

1. Introduction
Infrastructure development in Indonesia has been significantly improved in line with government programs that support the acceleration in infrastructure development. In the effort to face these challenges, absolutely, there needs to be efforts to improve knowledge and competencies related to new technologies and industrial processes 4.0 through a new strategic approach to Human Resources (HR) as the main actors driving the construction field. So, man has become a strategic factor that determines the success of an organization. This condition points to the importance of planning activities in HR management to support an organization or company's success [1].

Construction companies have a variety of complex problems and factors such as cost, quality, and occupational safety. The construction sector involves many parties of various skills. It is inseparable from the role of a man as the main resource in a construction company. So that is the reason why Management of HR is one of the key elements of success in the company's sustainability [2]. Thus, it can be concluded that HR management has a very important role in the sustainability of an organization or company. This is due to several things related to performance, motivation, job satisfaction, and productivity if not fulfilled will result in the continuity of the company becoming impaired. One of the keys to success in HR management of a construction company is the good quality of human resources [3].
Based on various previous research, HR management in construction companies becomes very important and provides a considerable contribution to the performance of the construction field. However, there are very few studies in Indonesia that can give a broad picture of the HR management situation in the field of construction. The scope of existing research is only limited to case studies on a specific project or region. Therefore, this research will be conducted on 30 infrastructure projects spread throughout Indonesia. With this broader scope, it is hoped to provide a clearer picture of HR management in the Construction Industry, especially infrastructure in Indonesia today. This research is also focused on infrastructure projects handled by large contractors who have experience in their field so that it can be known the appropriate steps towards HR management owned by the company.

2. Methodology

2.1 HR Development Strategy

One of the keys to a company's success in achieving its vision and mission is the quality of good human resources. The strategies needed to improve the quality of HR can be based on 5 (five) main dimensions, i.e.,[4]–[6]

a) Organizational Leadership, which implements more flexible organizational leadership but does not break the rules
b) Employee Management, which conducts employee management that prioritizes teamwork, agreement, the participation of all employees, more focus on the internal management of the company.
c) Adhesive Organization, which reduces the formality of the rules underlying the organization.
d) Strategic Emphasis, which focus on the company's internals and reduce the focus on market competition
e) Success Criteria, which emphasizes the criteria of success in HR development, the internal condition of the company, teamwork and commitment, and concern for fellow employees.

HR development strategies can also be carried out by improving the quality of education, conducting work exercises or seminars, improving the employment information system and coaching construction organizations, information socialization, mastery of information technology, certification, and mastery of foreign languages [7] [8]. Improving the quality of human resources must always be done in an effort to find, develop, and maintain the human resources that suit the needs. There are 3 (three) strategies in HR management, i.e.,[9][10]

a) HR Strategic Orientation Planning
b) HR Tactical Planning
c) HR Operational Planning

Improving the Quality of Human Resources can also be done towards resources that have competence both from the physical and intellectual aspects. Improving the quality of human resources can be done in several ways, including [3][8]:

a) Physical quality improvement can be pursued through health and nutrition programs.
b) Improving the quality of non-physical abilities can be done by training, seminars, and workshops

2.2 HR Quality Improvement Factors

HR partially positively affects employee performance at construction services companies. HR construction services companies can combine four important factors to improve the quality of their human resources namely competency, motivation, loyalty, and discipline of work to improve employee performance [11].

Another opinion explains about 3 (three) important points that can be done in order to manage construction HR in an effort to improve project performance, i.e.[7]:

a) Mechanisms for management;
b) Focus on management;
c) Consistent with management.
Many factors affect the quality of HR, one of which is the leading factor with employee commitment to construction companies. Where if leadership is improved then employee commitments will also increase [12] [13]. Thus, one of the factors to generate stakeholders’ interest in construction projects is the training of human resources that needs to be done to ensure that experts carry out the project. HR training will be more appropriately focused on improving the organization's performance [14]. Based on the Library review that has been done, here is a framework that will be used as a reference in conducting the approach of human resources management in the field of construction (Figure 1).

**Figure 1. Strategic Approach to HR Management**

Furthermore, this research will map what the implementation of HR management is like, especially in the infrastructure field in Indonesia, in a broader scope so that it can be obtained an overview of the current conditions, as well as the main factors that can support in achieving success to implement effective and sustainable HR management strategies.

This study’s research methodology starts by identifying and formulating problems, literature studies, data collection, validation, data processing, analysis, and conclusions. The development of research instruments is carried out by assigning populations and samples. The population used in this research is some large contractor companies that have handled Indonesia's infrastructure projects. Simultaneously, the sampling used in this study was conducted with randomized methods for 20 companies. The number of companies selected is limited to the funds and time constraints researchers have in retrieving their data. In this study, the types of instruments used are questionnaires, observations, and interviews to get more information.

The indicators used in the questionnaire related to HR management based on the indicators in Figure 1 are further developed into 14 indicators that will be assessed to find out the implementation of HR management measured from several indicators starting from the recruitment process, which includes HR planning, job analysis to determine appropriate jobs and positions, selection process, skill improvement through training and development, assessment of work performance, compensation, and renewal related to retirement and work stoppages.

Analysis of instrument data starts by processing the questionnaire's data by describing the data using statistical techniques. Presentation of data in tables and diagrams to find and show the conditions of implementing resource management to answer the first problem. Furthermore, the data of human resources quality improvement factors from the collection of respondent data is summarized and grouped according to the number of values of all respondents and sorted according to their respective levels so that it is obtained data containing a summary of the level of factors to answer the second
problem. The research was followed by conducting a factor analysis with SPSS from the data obtained from the previous analysis results to look for the 3 (three) main factors that determine the success in implementing infrastructure construction to answer the third problem

3. Result and Discussion

3.1. Respondent Profile

The profiles of respondents in this study can be described in the following images. A glance at figure 2 provided reveals a profile of respondents based on the type of company they work for. Based on Figure 2, the types of respondent companies are dominated by private companies. It has happened because of the number of private construction companies in Indonesia more than the government companies.

![Figure 2. Profile of Respondents by Company Type](image)

Figure 2. Profile of Respondents by Company Type

Figure 3 displays the respondent's profile based on gender. This figure explains that the gender of most respondents is male. This situation common in Indonesia's construction area, with the majority of workers, is the man.

![Figure 3. Profile of Respondent Based on Gender](image)

Figure 3. Profile of Respondent Based on Gender

The respondent's profile based on the length of work in the construction field is depicted in Figure 4. From this figure, most respondents have worked in construction for more than 10 years, and the least are those who have less than 5 years of construction experience. Respondents in this study had various types of positions with minimal positions as site managers.

![Figure 4. Profile of Respondent Based on Long Work in Construction](image)

Figure 4. Profile of Respondent Based on Long Work in Construction
3.2. Discussion
The following will discuss the results of validity and reliability testing of the existing questionnaire data. The validity data test results using SPSS showed each Pearson Correlation coefficient's value compared to the Product Moment's value on the Sig. 0.05 (Two Tail), obtained a value of r for the number of N as many as 20 respondents is 0.423. The Pearson correlation value of all existing indicators is more than 0.423; it is shown that data validation is fulfilled and valid. Furthermore, the data reliability test results can be seen in Table 1.

| Table 1. Reliability Test | Cronbach's Alpha | N of Items |
|---------------------------|------------------|------------|
|                           | .961             | 14         |

The value of Cronbach's Alpha for 14 existing indicators based on Table 1 is 0.961. This value of Cronbach's Alpha will be compared to the standard reliability level value, which explains if the value is closed to 1 (one), then the reliability is better. The existing Value of Cronbach's Alpha explains that the existing question item is reliable. Furthermore, to determine the various factors that affect HR management in construction, companies are carried out using SPSS factor analysis. From the test obtained results as in Table 2.

| Table 2. Factors Analysis |
|---------------------------|

Based on Table 2, the Measures of Sampling Adequacy (MSA) value obtained a coefficient value of >0.50 for all existing factors. The 14 factors that exist are proven to affect human resources management. These factors include: 1) Recruitment Policy; 2) Employee Placement; 3) Compensation; 4) Career Development; 5) Management Mechanism; 6) Management Focus; 7) Management Consistency; 8) Management Consistency.
Information System Enhancements; 9) Organizational Coaching; 10) Mastery of Information Technology; 11) Information Socialization; 12) HR Tactical Planning; 13) HR Operational Planning; 14) HR Strategic Orientation Planning

The 14 factors will be determined which the main factors that affect success in HR management are. The following table 3 shows the results of the factor's extraction into two main factors.

**Table 3. Extraction Factors**

| Component | Initial Eigenvalues | Extraction Sums of Squared Loadings | Rotation Sums of Squared Loadings |
|-----------|---------------------|------------------------------------|---------------------------------|
|           | Total               | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1         | 9.351               | 66.789       | 66.789       | 9.351 | 66.789       | 66.789       | 5.958 | 42.555         | 42.555       |
| 2         | 1.423               | 10.163       | 76.953       | 1.423 | 10.163       | 76.953       | 4.816 | 34.397         | 76.953       |
| 3         | .770                | 5.502        | 82.454       |       |              |              |       |                |              |
| 4         | .540                | 3.855        | 86.309       |       |              |              |       |                |              |
| 5         | .531                | 3.793        | 90.102       |       |              |              |       |                |              |
| 6         | .432                | 3.085        | 93.187       |       |              |              |       |                |              |
| 7         | .302                | 2.158        | 95.345       |       |              |              |       |                |              |
| 8         | .215                | 1.534        | 96.879       |       |              |              |       |                |              |
| 9         | .180                | 1.285        | 98.165       |       |              |              |       |                |              |
| 10        | .116                | .830         | 98.995       |       |              |              |       |                |              |
| 11        | .063                | .448         | 99.443       |       |              |              |       |                |              |
| 12        | .044                | .311         | 99.755       |       |              |              |       |                |              |
| 13        | .027                | .190         | 99.944       |       |              |              |       |                |              |
| 14        | .008                | .056         | 100.000      |       |              |              |       |                |              |

Extraction Method: Principal Component Analysis.

Table 3 explains that the 14 indicators can be classified into two main factors judging by the Total value on Extraction Sums of Squared Loadings, a value greater than 1 (one). The grouping of existing factors can be seen by comparing coefficients on components 1 and 2. Factors grouping is based on the largest component value, as in Table 4.

**Table 4. Grouping Factors**

| Factors | Component | 1 | 2 | Grouping Factors |
|---------|-----------|---|---|------------------|
| X1      | .780      | .390 | 1st Factor |
| X2      | .885      | .220 | 1st Factor |
| X3      | .683      | .423 | 1st Factor |
| X4      | .601      | .753 | 2nd Factor |
| X5      | .819      | .246 | 1st Factor |
| X6      | .702      | .566 | 1st Factor |
| X7      | .341      | .708 | 2nd Factor |
| X8      | .315      | .729 | 2nd Factor |
| X9      | .584      | .664 | 2nd Factor |
| X10     | .079      | .863 | 2nd Factor |
| X11     | .290      | .818 | 2nd Factor |
| X12     | .915      | .133 | 1st Factor |
| X13     | .760      | .541 | 1st Factor |
| X14     | .719      | .538 | 1st Factor |
Based on Table 4, the two factors were identified to be Table 5. This table explains that the two main factors affecting HR management in construction companies are employee management systems and information management systems. Success in HR management can be realized with the employee management system supported by a good information management system.

**Table 5. Identification of Factors in HR Management**

| No | Factors / Variables                  | Subfactors                                               |
|----|-------------------------------------|----------------------------------------------------------|
| 1  | Employee Management System          | • Recruitment Policy                                     |
|    |                                     | • Employee Placement                                     |
|    |                                     | • Compensation                                           |
|    |                                     | • Management Mechanism                                   |
|    |                                     | • Management Focus                                       |
|    |                                     | • HR Strategic Orientation Planning                      |
|    |                                     | • HR Tactical Planning                                   |
|    |                                     | • HR Operational Planning                                |
| 2  | Information Management System       | • Career Development                                     |
|    |                                     | • Management Consistency                                 |
|    |                                     | • Information System Enhancements                       |
|    |                                     | • Organizational Coaching                                |
|    |                                     | • Mastery of Information Technology                      |
|    |                                     | • Information Socialization                             |

Furthermore, the data analysis will be accomplished by calculating the average value of the variables against the 20 existing companies, as shown in Figure 5.

**Figure 5. Chart of The Distribution of HR Management Quality in Construction**

Figure 5 is apparent from the information supplied that HR management quality is determined based on employee management system and information management system, according to the factor in Table
5. This assessment is accomplished by setting the assessment standard based on the initial grade standard stipulated to fill out the questionnaire with a Likert scale, as in Table 6.

| No | Average Value Criteria | Interpretation |
|----|-------------------------|----------------|
| 1  | 1.0-1.5                 | Poor           |
| 2  | More than 1.5-2.5       | Less Good      |
| 3  | More than 2.5-3.5       | Quite Good     |
| 4  | More than 3.5-4.0       | Good           |

By calculating the average values of the four criteria compared to the standard values in Table 6, the percentage of each group of values can be seen in Figure 6. This figure explains that most of Indonesia's large construction companies are already good at managing their HR management. Further analysis of 55% of companies that have been well-manageable, as much as 54.5% are government companies, and 45.5% are private companies. This shows that only a few large construction companies in Indonesia are aware and pay attention to the criteria of success in HR management.

![Figure 6. Percentage of Construction Companies based on HR Management](image)

4. Conclusions
Factors that can affect HR management in construction companies in Indonesia are 14, i.e., Recruitment Policy, Employee Placement, Compensation, Career Development, Management Mechanism, Management Focus, Management Consistency, Information System Improvement, Organizational Coaching, Information Technology Mastery, Information Socialization, HR Tactical Planning, HR Operational Planning, and HR Strategic Orientation Planning. The main factor in HR management that supports the success of HR management in construction companies in Indonesia is the employee management system supported by a good information management system. The implementation of HR management in Indonesia's construction companies is only about 55% who have done good HR management, from the percentage dominated by government companies.

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