Job Evaluation Based on Hay Method for Developing the Compensation System for The Internal Audit Function in A Transforming Oil and Gas Company

Adityo Dwi Setyanto[1,2*], Syarifa Hanoum[3]

ABSTRACT

This research focuses on evaluating the remuneration system within an oil and gas organization, with a specific emphasis on the Internal Audit department undergoing a transformation into a pooled resource organization. This transformation has led to a matrix- based division of work, involving all team members in various projects and necessitating a thorough evaluation of each position. To conduct the evaluation, the Hay Method is employed, using specific criteria such as Know-How, Problem Solving, and Accountability, with the support of the Analytical Hierarchy Process (AHP) approach. The outcome of this evaluation will serve as the foundation for designing an effective remuneration system. The study will identify the key Hay Method criteria, crucial for position evaluation and subsequently rank them using a point system for positions within the Internal Audit Function.

KEYWORDS: Job Evaluation, Remuneration, Hay Method, Analytical Hierarchy Process (AHP).

.

[1]Sr Analyst Compensation and Benefit, PT Pertamina (persero), Jakarta, Indonesia
[2]Industrial Management, Interdisciplinary School of Management and Technology, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia
[3]Department of Business Management, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia
*Corresponding author: adityodwis@gmail.com

1. INTRODUCTION

The oil and gas industry is renowned for its dynamic and constantly evolving nature, shaped by global economic trends, technological advancements, and geopolitical factors. In the midst of these challenges, companies within the sector must continuously adapt their strategies and operations to increase their profitability and marketability (Hanoum, 2021). Numerous authors have delved into the investigation of aligning strategies and operations to ensure strategic fit, for example, Hanoum and Islam (2021). Other authors (Sletten et al., 2023) have concentrated on operational effectiveness to ensure overall profitability in the oil and gas industry's dynamic environment.

This paper presents a case study of oil and gas company which is currently undergoing a transformation involving the holding of several state-owned-enterprises in Indonesia with similar or related business processes. Within the context of a transforming oil and gas company, significant organizational changes have led to the creation of a new subholding structure. This structural transformation has impacted various departments and functions within the company, including the internal audit function. The creation of subholdings involves redefining the roles, responsibilities, and reporting lines within the organization. In this process, the internal audit function may have undergone restructuring, realignment, or redistribution of resources and personnel. Such changes can lead to shifts in the distribution of workloads, changes in reporting relationships, and even alterations in job requirements.

As different subholdings are established, there is a likelihood of variations in job structures and responsibilities across the organization. Jobs within the internal audit function may be impacted differently based on their association with a specific subholding. As a result, the internal audit function is currently facing challenges and potential disruptions in the area of internal equity concerning remuneration structure. Anticipating and addressing this potential disruption is crucial. If employees perceive their remuneration as unfair, it can lead to conflicts and heightened stress, fostering a sense of unappreciation (Rai et al., 2021).

This research endeavors to develop a matrix-based remuneration system by leveraging the outcomes of a comprehensive job evaluation. The primary objective is to establish a system that accurately reflects the relative significance of various factors across different positions within the Internal Audit Function, ensuring equitable and competitive compensation aligned with employee contributions. To achieve this, the study adopts the Hay Method, a formal and systematic job evaluation approach, to determine the relative worth of positions. Additionally, the Analytical Hierarchy Process (AHP) is integrated to assign relative weights to the Hay Method factors, adding complexity to the evaluation process and highlighting the urgency for prompt and smooth implementation.

2. LITERATURE REVIEW

Job Evaluation is a system for ranking positions logically and fairly by comparing jobs with other jobs or using a predetermined scale to determine the weight of positions in an organization (Korn Ferry, 2018). According to Kahya (2018). Job evaluation is a systematic approach to determining the relative worth of different jobs in an organization. Most organizations use an analytic approach to evaluate work because this method is more accurate in terms of results (Garcia Diaz, 2001). Referring to the Human Resources Management book compiled by Dessler (2018), there are several methods that can be used to carry out Job Evaluation. Hay method is point method This method determines a job with a certain compensable factor, usually consisting of several compensable factors with different rankings or weights. The overall evaluation will be in the form of quantitative rating points resulting from the degree of importance of each factor. This method is the most popular today. The Hay Method is one of the most widely used methods in Job Evaluation often used by companies. Hay provides a ready-to-use table complete with weight figures for each compensable factor.

Hay's method is used in this study because it is a method that takes into account all compensation factors in accordance with business processes in evaluating positions in the sample companies, namely emphasizing Know-How, Problem Solving, and accountability. From the 3 main factors above, they will be broken down into 8 (eight) dimensions, which will later produce a Hay Point which is the final value of a position. A more detailed explanation regarding the 8 dimensions is as follows:

1. Know-How Factor

   - Practical/technical knowledge: measuring the technical knowledge and experience
   - Managerial Knowledge: measuring planning, management, and managerial
   - Influencing Skills: measuring the intensity and demands of communication

2. Problem Solving

   - Freedom of Thinking: measures level of freedom in demands of thinking of a position
   - Thinking Challenge: measuring the diversity of challenges

3. Accountability

   - Freedom of Act: measures the degree of freedom in control
   - Magnitude: the impact of a position from financial and non-financial aspects
   - Area of Impact: measures the level of contribution or implications from the dimension

According to Dessler (2018), Employee compensation includes all forms of payment that enter and leave employees from the company that employs them. In the concept of remuneration, the WorldatWork Institute, which is a professional institution in professional certification related to remuneration based in America, conveys that remuneration is a unitary package, which is better known as Total Reward in their

approach. WorldatWork Institute states that Total Reward is a combination of several elements, which can be in the form of cash (cash), non-cash (in kind), welfare programs that have the aim of attracting, motivating, and retaining employees (WorldatWork, 2017). According to Mondy (2008) compensation is the total amount of compensation received by employees in lieu of the services they have provided.

The Analytical Hierarchy Process (AHP) is a decision-making method developed by Thomas L. Saaty of the Wharton School of Business in the 1970s. The main component in this method is a functional hierarchy with input from human perceptions who are considered "experts" in their fields.

3. METHODS

The research aims to use the results of the job evaluation to develop a matrix-based remuneration system. Such a system should accurately reflect the relative importance of various factors in different positions, ensuring fair and competitive compensation for employees based on their contributions. The research proposes using the Hay Method, a formal and systematic job evaluation approach, to determine the relative worth of positions within the Internal Audit Function. Additionally, utilizing the Analytical Hierarchy Process (AHP) to weigh the Hay Method factors further adds complexity to the evaluation process, making timely action vital for smooth implementation. The research methodology involves both qualitative and quantitative approaches. Qualitative data is gathered through interviews and focus group discussions with key stakeholders within the Internal Audit department and Human Resources. Quantitative data is collected using questionnaires designed to assess the Hay Method criteria, and the AHP is utilized to assign relative weights to each criterion.

4. RESULTS

The data in this study comprises results from organizational analysis and questionnaire responses obtained from Subject Matter Experts in organizational development. Specifically, the collected data presents the Hay System points based on the job descriptions of each Chief Audit Executive (CAE) within each Subholding. Detailed results of the job evaluation for CAE positions in the other five subholdings are provided in the attachment, with a concise summary of the hay point results presented in Table 1 below.

TABLE 1. Hay Point Result CAE

| No | Subholding | Hay Point | | | Total |
		Know How	Problem Solving	Accountability	
1	Upstream	608	400	460	1468
2	Refinery & Petrochemical	608	400	400	1408
3	Commercial & Trading	528	400	400	1328

No	Subholding	Hay Point			Total
		Know How	Problem Solving	Accountability	
4	Gas	528	400	460	1388
5	Integrated Marine & Logistic	460	300	400	1160
6	Power & Renewable Energy	400	260	400	1060

After obtaining the Hay point data from several CAE positions, the next step involves implementing the Analytical Hierarchy Process (AHP) to establish a hierarchical structure for each criterion and its corresponding sub-criteria. This structured hierarchy serves as the foundation for our research. The main criteria and sub-criteria used are derived from the Hay method approach and have been arranged using the AHP, a method focused on achieving the primary objective: developing a compensation strategy for the internal audit function. This strategy considers the Hay method criteria through a matrix pairwise comparison, allowing for reciprocal assessments between various mutually exclusive criteria. The resulting hierarchy, categorized based on its type, is illustrated in Figure 1 below.
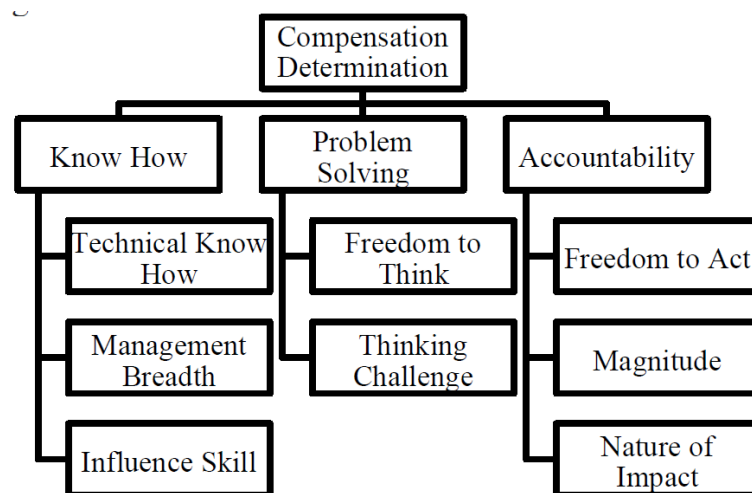

FIGURE 1. Hierarchy of Compensation Development Strategy in the Internal Audit Function

Level 1 Hierarchical Weights

The conclusions drawn from the first level of the hierarchy in Figure 2 reveal the relative importance and priority of different aspects in the job evaluation process. The most crucial aspect that occupies the highest position and holds the utmost significance is the "Know How" aspect, with a substantial criterion weight of 63.33%. This indicates that "Know How" is a fundamental aspect that must be thoroughly assessed to determine the appropriate value of a position. It highlights the essential competencies and technical

expertise required for a particular role. Following closely in the second rank is the "Problem Solving" aspect, with a value of 26.05%. This aspect's placement in the second position signifies its pivotal role in the job evaluation process. A well-structured strategic policy for effectively solving problems and addressing challenges relies heavily on the presence of sufficient technical competency within the position. Lastly, the "Accountability" aspect is ranked third, with a value of 10.62%. Although positioned last in the level 1 hierarchy, this aspect holds significance as it represents the obligation and responsibility attributed to a position concerning its success or failure.
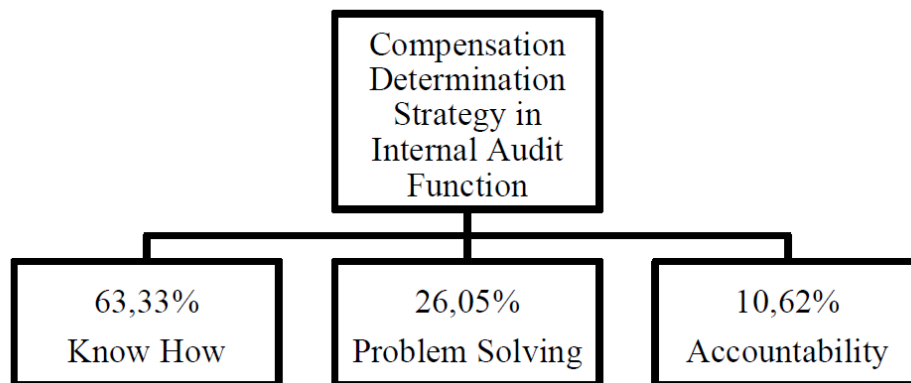

FIGURE 2. Hierarchical Weight Level 1 Hay Method

Level 2 Hierarchical Weights

To analyze the compensation development strategy for the Internal Audit function, it is essential to calculate priority weights at the second level of the sub-criteria hierarchy in the Hay method (please see Figure 3).

The results of the level 2 hierarchy for the Know How aspect indicate that the most critical sub-criterion is "Technical Know How," ranking first with a value of 65.55%. This underscores the significant importance of technical competence for a position. In second place is "Management Breadth" with a value of 18.67%. This reflects the necessity of possessing managerial skills, such as planning, organizing, directing, and controlling resources, within a position, although it is not the primary and fundamental aspect. Finally, "Influence Skill" ranks last with a value of 15.78%. This implies that the ability to wield interpersonal skills for influencing others is not considered the most critical aspect in a position.

In summary, the level 2 hierarchy for the Know How aspect highlights the relative importance of technical competence as the primary sub-criterion, followed by management breadth, and lastly, influence skill. Understanding these priority weights aids in formulating a well-informed compensation development strategy tailored to the specific requirements and significance of different sub-criteria within the Internal Audit function.
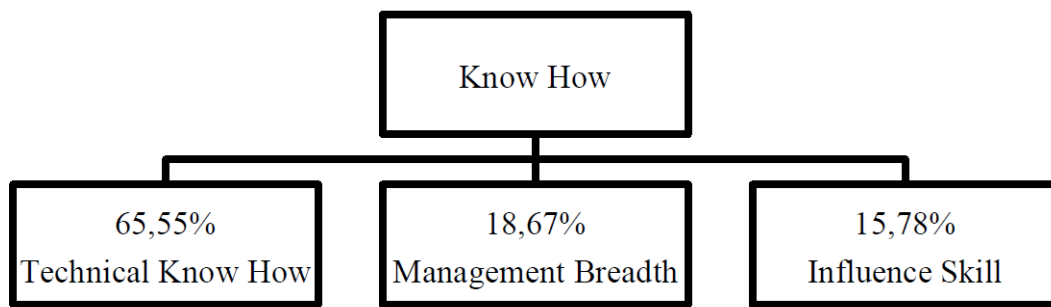
FIGURE 3. Level 2 Hierarchy Weight Know How Aspect

In the sub-criteria analysis for the Problem Solving aspect, it was observed that "Freedom to Think" received a significantly higher rating, namely 83.33%, compared to "Thinking Challenge," which only obtained a value of 16.67%. This indicates that the ability and freedom of thought to devise policies and solutions with strategic implications for the company are far more critical than merely facing challenges in deep problem-solving. The results of the sub-criteria for the Problem Solving aspect confirm that "Freedom to Think" holds a higher rank, specifically 83.33%, in comparison to "Thinking Challenge," which received a value of 16.67%. The Level 2 sub-criteria hierarchy for the Problem Solving aspect, consisting of "Freedom to Think" and "Thinking Challenge," is presented in Figure 4 below. This hierarchy visually depicts the relative importance and ranking of these sub-criteria within the context of the Internal Audit function.
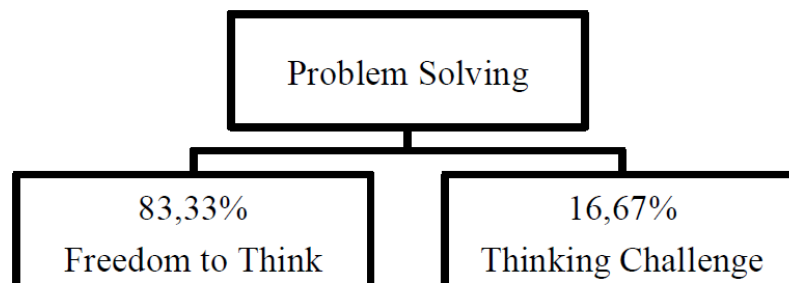

FIGURE 4. Level 2 Hierarchy Weight Aspects of Problem Solving

The hierarchical weights for the Accountability sub-criteria reveal that "Magnitude" holds the highest rank with a value of 47.96%. Following closely in the second rank is "Freedom to Act" with a value of 40.55%, while "Nature of Impact" occupies the last position with a value of 11.50% (see Figure 5). These results illustrate that the size of achievement is given significant consideration in determining a position, compared to the level of organizational empowerment to achieve goals and even when compared to non-financial impacts that are not quantitative targets of the organization.
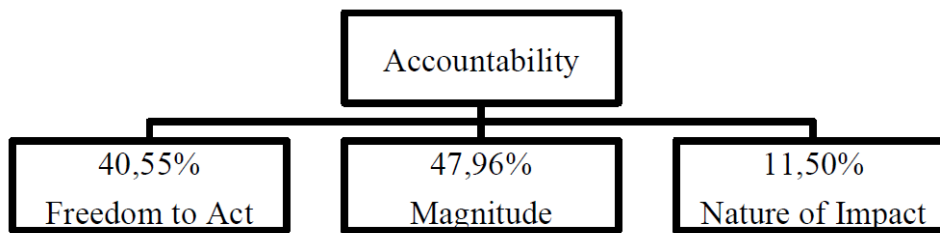
FIGURE 5. Level 2 Hierarchical Weight of Accountability Aspect

Based on the data presented in Table 2 below, the "Technical Know How" criterion obtained the highest percentage value with 41.51%, making it the most influential factor in the evaluation. Following that, the "Freedom to Think" criterion ranked second with a value of 21.71%, while the level 2 criterion of "Know How," specifically "Management Breadth," held the third position with a value of 11.83%. The "Influence Skill" criterion secured the fourth place with a value of 9.99%, while "Magnitude" ranked fifth with a value of 5.09%. The level 2 criterion of "Problem Solving," known as "Thinking Challenge," came in sixth place with a value of 4.34%. "Freedom to Act," another level 2 criterion of "Accountability," followed in seventh place with a value of 4.30%. Lastly, "Nature of Impact" obtained the lowest value, placing it in the last order with 1.22%.

TABLE 2. Results of Level 1 and Level 2 Final Weights

First Level		Second Level		Final Weight
Know How	0,63	Technical *Know How*	65,55%	41,51%
		Management Breadth	18,67%	11,83%
		Influence Skill	15,78%	9,99%
Problem Solving	0,26	Freedom to Think	83,33%	21,71%
		Thinking Challenge	16,67%	4,34%
Accountability	0,11	Freedom to Act	40,55%	4,30%
		Magnitude	47,96%	5,09%
		Nature of Impact	11,50%	1,22%

From Table 1 and Table 2 above, we can create a weighting cluster for each Hay Point criterion in each Subholding to facilitate the ranking process in the compensation system development strategy. The clusters are organized based on the level 1 criteria, as the resulting Hay Points already represent the descriptions of the level 2 criteria obtained from the Hay Method conversion table. In the Know How cluster, it is divided into 4 (four) categories based on the Hay Points obtained by each Subholding, as follows:

1. Point Value > 600
2. Point Value 500 – 599
3. Point Value 401 – 499
4. Point Value <= 400

Job Evaluation Based on Hay Method

The weights with details are according to Table 3 below.

TABLE 3. Pair Wise Comparison Hay Point Aspect Know How

Know-How Parameter	> 600	500 - 599	401 - 499	<=400
> 600	1	3	5	7
500 - 599	0,33	1	3	5
401 - 499	0,20	0,33	1	3
<=400	0,14	0,20	0,33	1
Total	1,68	4,53	9,33	16,00

TABLE 4. Determination of the Weight of each Criterion

Know-How Parameter	> 600	500 - 599	401 - 499	<=400
> 600	0,60	0,66	0,54	0,44
500 - 599	0,20	0,22	0,32	0,31
401 - 499	0,12	0,07	0,11	0,19
<=400	0,09	0,04	0,04	0,06
Total	1,00	1,00	1,00	1,00

TABLE 5. Final Criterion Weight Hay Point Aspect Know How

Know How Parameter	Criterion Weight
> 600	0,56
500 - 599	0,26
401 - 499	0,12
<=400	0,06
Total	1,00

To test the consistency of the data, the data above is tested with the matrix consistency ratio according to the table below

TABLE 6. Random Index

Matrix Order	1	2	3	4	5	6	7	8	9
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45

The formulation to calculate the consistency of the index is

$$CI = \frac{(\lambda - n)}{(n - 1)}$$

$$CI = \frac{(4,18 - 4)}{(4 - 1)}$$

$$CI = 0,0589$$

Where: CI = Consistency Index

λ = vector consistency average

n = amount of criteria

after that we must found the consistency ratio with the formulation shown below:

$$CR = \frac{CI}{RI}$$

$$CR = \frac{0{,}0589}{0{,}90}$$

$CR = 0{,}07 < 0{,}1 \ (consistent)$

Where: CR = Consistency Ratio

RI = Random Index that obtained from the table 2

The results obtained with reference to the consistency index of 0,0589 and the index ratio for matrix order 4 is 0,90, so the resulting data is consistent with a consistency ratio of 0,07. Same as the calculation of the weight of the criteria on the know how aspect, calculations are also carried out for other aspects such as problem solving and accountability, with the results and approach of the criteria according to each hay point range. Hay point parameter clusters on the Problem Solving aspect in this study the authors divided into 3 (three) clusters, namely as follows:

1. Point value >=400
2. Point value 300 – 400
3. Point value < 300

Hay point parameter clusters on the Accountability aspect in this study the authors divided into 2 (two) clusters, namely as follows:
1. Point Value >=450
2. Point Value <450

Same as the calculation of the weight of the criteria on the know how aspect, calculations are also carried out for other aspects such as problem solving and accountability, with the results and approach of the criteria according to each hay point range above. The final criterion weighting results are as follows:

TABLE 7. Final Criterion Weight Hay Point Problem Solving Aspect

Problem Solving Parameter	Criterion Weight
>= 400	0,72
300 - 400	0,19
< 300	0,09
Total	1,00

TABLE 8. Final Criterion Weight Hay Point Accountability Aspect

Job Evaluation Based on Hay Method

Accountability Parameter	Criterion Weight
>=450	0,75
<450	0,25
Total	1,00

The last step to determine the ranking of the final criterion weights is to multiply the Level 1 criterion weights with the Hay Point weights for each organizational entity, the resulting data is in accordance with the table below.

No	Subholding	Know How	Problem Solving	Account ability	Multiplication Conversion			Total	Rangking
		0,63	0,26	0,11	Weight Level 1 x Weight Hay Point				
		Criterion Weight Hay Point							
1	Upstream	0,56	0,72	0,75	0,353	0,188	0,080	0,621	1
2	Refinery & Petrochemical	0,56	0,72	0,25	0,353	0,188	0,027	0,568	2
3	Commercial & Trading	0,26	0,72	0,25	0,167	0,188	0,027	0,382	4
4	Gas	0,26	0,72	0,75	0,167	0,188	0,080	0,435	3
5	Integrated Marine & Logistic	0,12	0,19	0,25	0,077	0,050	0,027	0,154	5
6	Power & Renewable Energy	0,06	0,08	0,25	0,036	0,022	0,027	0,084	6

5. CONCLUSIONS

Based on the initial objectives of this research and the results of the analysis and discussion presented in the previous chapter, the following conclusions can be drawn: First, the most significant compensable factor in the remuneration system development strategy is "Know How" with a weight of 63.33%, followed by "Problem Solving" with 26.05%, and "Accountability" with 10.62%. Second, position weights vary among Chief Audit Executives (CAEs) in different subholdings. The Upstream subholding has the highest position weight (0.621), followed by Refinery & Petrochemical (0.568), Gas (0.435), Commercial & Trading (0.328), Integrated Marine Logistics (0.154), and Power & Renewable Energy (0.084). Third, salary mapping recommendations align with the ranking and weighted criteria, placing Upstream as the highest-paying subholding,

followed by Refinery & Petrochemical, Gas, Commercial & Trading, Integrated Marine Logistics, and Power & Renewable Energy.

In summary, the research findings provide valuable insights for developing an effective remuneration system within the Internal Audit function. The prioritization of compensable factors, differentiation of position weights, and corresponding salary mapping contribute to fostering a fair, competitive, and motivated workforce in the organization's evolving and diverse subholdings. These conclusions serve as valuable guidelines for decision-making in HR and organizational management, ensuring the overall effectiveness and success of the remuneration strategy.

REFERENCES

Amirul Mu'minin, dkk (2017). Penentuan Grade Jabatan setingkat Staf menggunakan Hay Job Evaluation Methods (Studi Kasus Divisi Keuangan dan Administrasi PT.XYZ), Jurnal Teknik Industri Vol. 5 No. 3 November 2017.

Hanoum, S. (2021). Manufacturing enterprise performance using network DEA: a profitability and marketability framework. International Journal of Business Excellence, 25(3), 277-299.

Hanoum, S., & Islam, S. M. (2021). Linking performance measurements and manufacturing process improvements: the two-stage analytical framework. International Journal of Process Management and Benchmarking, 11(4), 542-564.

Kahya, E. (2018). A wage model consisted of job evaluation, employee characteristics and job performance. Pamukkale University.

Korn Ferry (2022), Handbook of Job Analysis Workshop, Jakarta.

La Ode AMT. (2012). Analisis Strategis Pembangunan Kabupaten Muna. (Tesis Master, Universitas Indonesia) Diakses pada tanggal 12 Maret 2023 <https://lib.ui.ac.id/file?file=digital/20297362-T30161-Analisis%20strategis.pdf>

Mondy RW. 2008. Human Resource Management, Volume 2 Edition 10 (Translation). Jakarta (ID): Erlangga Publisher.

Rai, N. G. M., Silmina, N., Fitrananda, H., Hanoum, S., Sinansari, P., & Noor, B. A. (2021, December). The Effect of work Conflict and Job Stress on The Human Resources Performance (Case Study: Maintenance & Engineer Division at PT. Paiton Operation & Maintenance Indonesia). In 3rd International Conference on Business and Management of Technology (ICONBMT 2021) (pp. 305-309). Atlantis Press.

Sletten, S., Wangen Jonasmo, K., & Solheim, M. C. (2023). Changing industrial trajectories through business model innovation: a case study of the oil and gas industry in Norway. European Planning Studies, 1-20.

WorldatWork (2017), Handbook of Total Reward Management, Washington.